# Sustainability report
# 2021

KME GROUP
Osnabrück

# Sustainability report **2021**

**KME Germany GmbH**
**KME Special Products & Solutions GmbH**
Osnabrück

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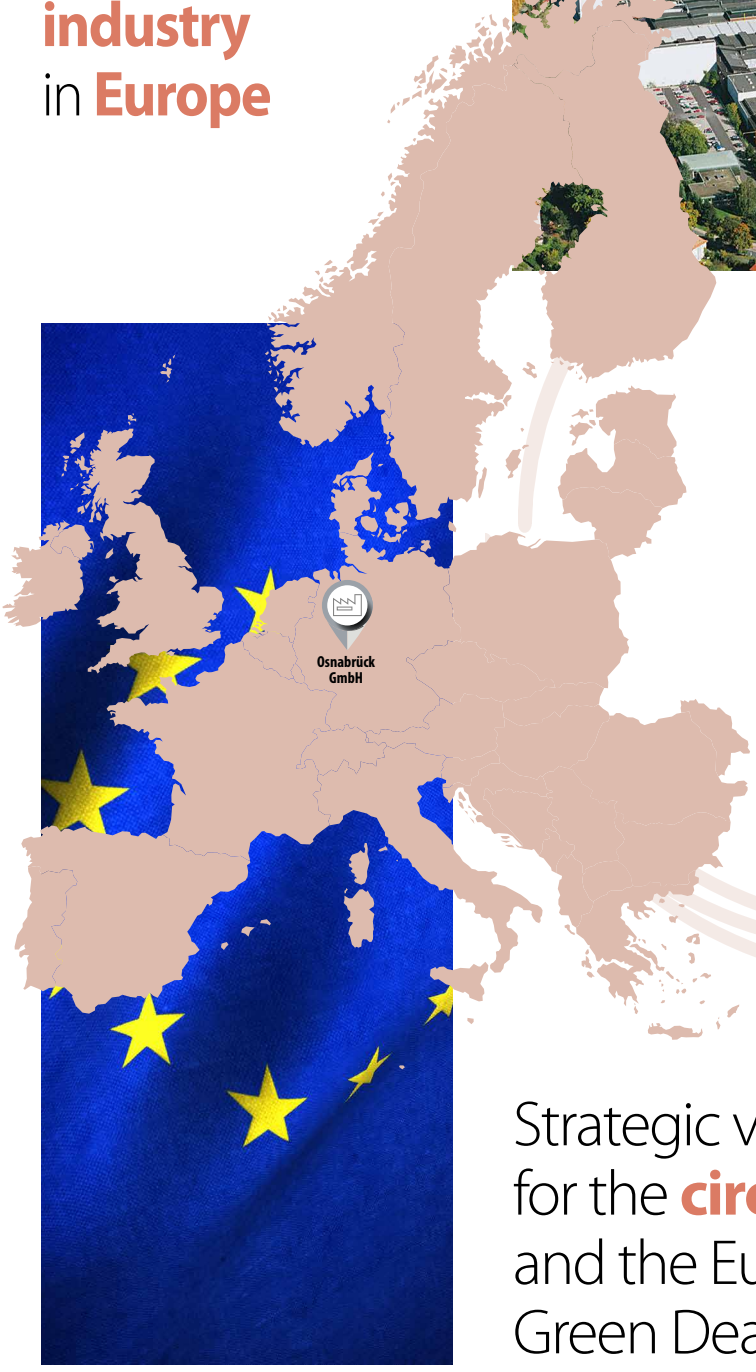
# Index

KME Osnabrück

# KME, an integrated system of the **copper industry** in **Europe**



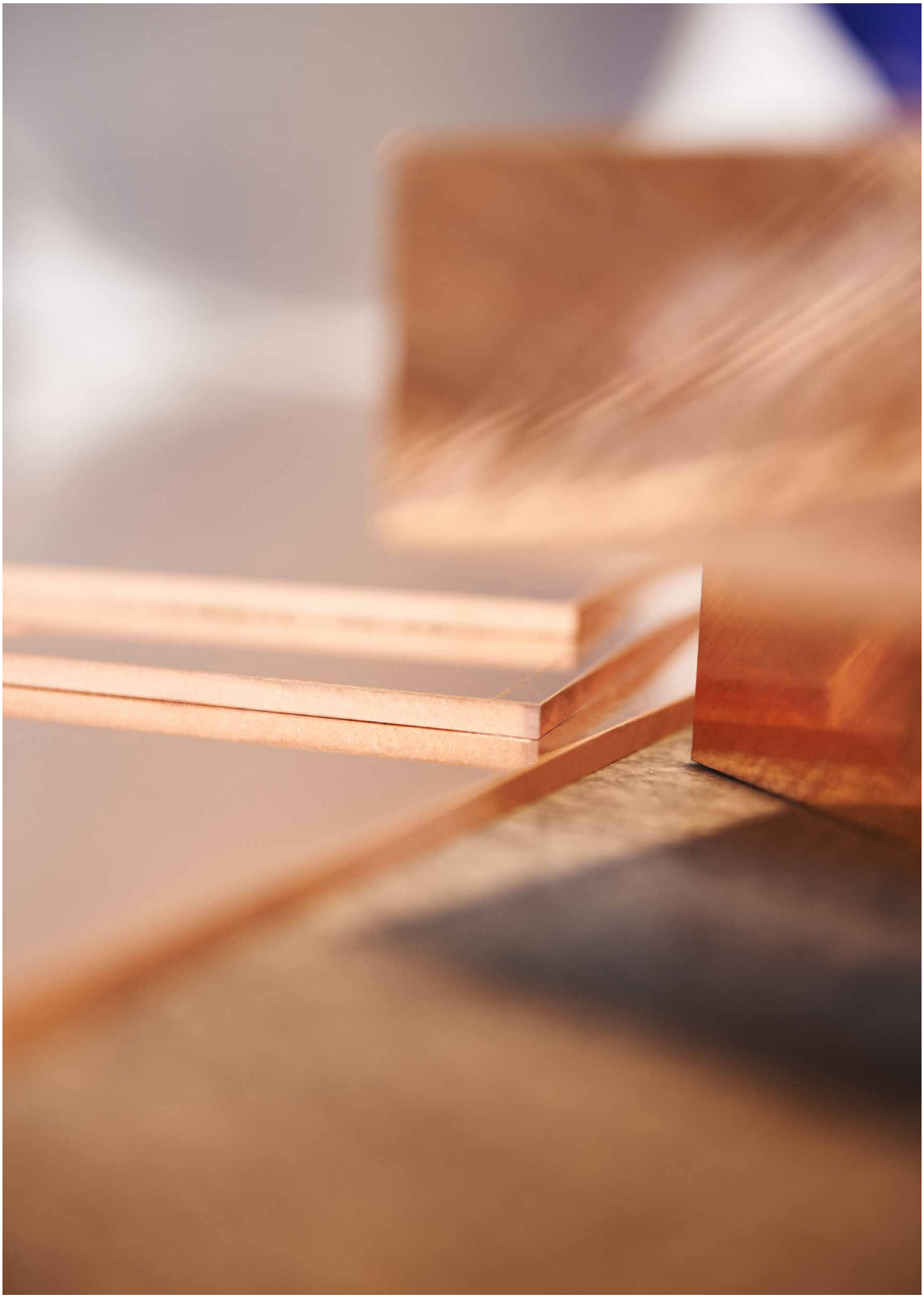

**Sales**
**120,662 t**

**Employees**
**1,634**

**Turnover**
**933.8 million euro**

## Strategic value for the **circular economy** and the European Green Deal

# 1 Report guidance



# **REPORT** GUIDANCE

We live through difficult years. First, in 2020, the pandemic. Then, in 2022, the war in Ukraine. The economic recovery that had characterised 2021 has been held back by international tensions. Industries operate in this difficult context. But this does not affect the process of evolution of KME's Sustainability Reports, which on the contrary sees this year the realisation of a new important milestone.

## The KME Group Sustainability Reports

In fact, the perimeter of the activities surveyed is even wider. The first report, five years ago, only covered the KME Italy plant in Fornaci di Barga. The second included the service centres of Besançon in France and Barcelona in Spain. The third year saw the report of KME Mansfeld GmbH and then, since last year, our Osnabrück plant. From this year, the sustainability reports also extend to the Serravalle (Italy) and Stolberg (Germany) plants, while the Brescia service centre will also be included in the KME Italy report.

It is a further step towards more and more extensive reporting for the entire KME Group. For this reason, already from this edition, the sustainability reports will be structured in a partially different way from previous years. In addition to the individual reports reporting on the activities of the plants, there will also be a general document offering an overview of the KME Group and the context in which it operates.

**Complete data can be found in the company's economic balance sheet*

## Circularity indicators

In order to further illustrate the company's activities and strategies, in addition to the reporting carried out on the basis of GRI guidelines and standards, a special chapter of the report also uses **circularity indicators** to measure the company's performance in relation to the objectives connected with the **transition to a circular economy**.

## An act of transparency and social responsibility

As with the previous report, the decision to produce and publish the sustainability report, which was carried out with the support of an independent company, is not a legal obligation for KME Osnabrück, but an expression of a strong strategic focus on corporate social responsibility (CSR) and Environmental Social Governance (ESG) criteria, as well as a concrete commitment to the ecological transition and the circular economy. KME Germany GmbH and KME Special Products & Solutions GmbH present their second sustainability report as a voluntary act of **transparency** and **social responsibility.**

## Guidelines and indicators

The report has been prepared on the basis of the guidelines of the **Global Reporting Initiative** (GRI), an independent international organization recognized by the UN and the main reference for *sustainability reporting* activities worldwide.
The report uses 4 sets of indicators related to the GRI standards:
1. **general**, regarding the governance of the companies;
2. **environmental indicators**, in particular concerning energy, materials, water, waste, emissions;
3. **social indicators**, concerning personnel, training, safety, equal opportunities, human rights, relations with the local community.
4. **economic indicators**, concerning the main economic results* and the added value distributed to the main stakeholders.

## Reporting

This sustainability report covers the year **2021**. Data for 2019 and 2020 are also reported to allow for an assessment of the performance of key indicators over the last three years. There are two separate and cooperating operating companies* at the plant: **KME Germany GmbH** and **KME Special Products & Solutions GmbH**. In the report all data are however reported in aggregate form for the whole year; some data are also reported separately.

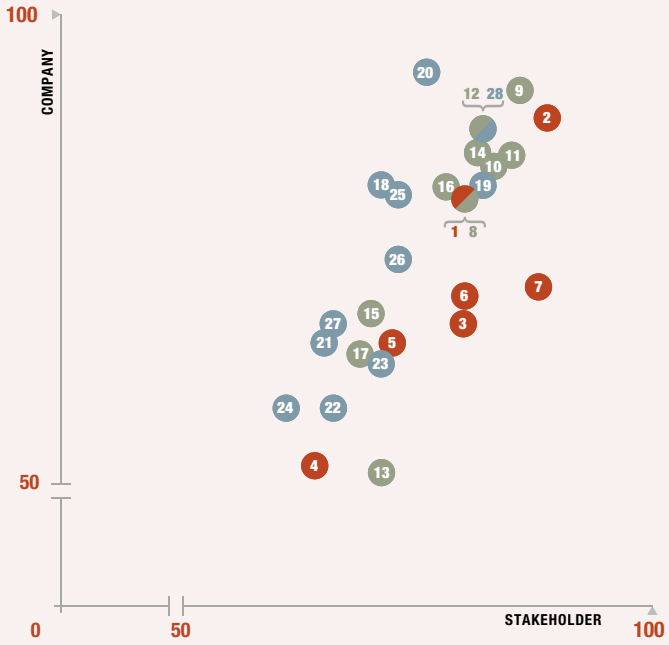
** *The division into two legally separate companies took place in July 2020.*

## Materiality matrix

The most relevant issues to be reported in the report were identified through discussion with **management** and key **stakeholders** (employees, shareholders, institutions, local community, trade associations, research bodies, etc.). The tool used to select the most interesting indicators is the "**materiality matrix**", which measures the degree of importance attributed to the various aspects subject to reporting*.

** Stakeholders and company management were asked to assign a priority level from a minimum of 0 (not relevant) to a maximum of 100 points (very relevant) to the various aspects being reported on. The evaluations make up the "materiality matrix".*

# Materiality matrix




1 CORPORATE DEVELOPMENT

2 HEALTH PROTECTION AND OCCUPATION AL SAFETY

3 PARTICIPATION OF EMPLOYEES AND INCLUSION OF THEIR INTERESTS

4 COMPANY CONTRIBUTION TO THE DEVELOPMENT OF INFRASTRUCTURE AND THE RELATIONSHIP WITH THE REGION

5 SUSTAINABLE SUPPLY CHAINS (E.G. REGIONAL PARTNER COMPANIES, TRANSPORT ROUTES)

6 EQUAL OPPORTUNITIES FOR ALL

7 PROTECTION OF HUMAN RIGHTS

8 WASTE MANAGEMENT

9 USE OF RAW MATERIALS/ RECYCLING/ CIRCULAR ECONOMY

10 WATER USE: USE / RECYCLING / WASTE WATER

11 PROTECTION OF SOIL AND GROUNDWATER

12 CLIMATE PROTECTION MEASURES

13 SAFEGUARDING BIODIVERSITY (BIOLOGICAL DIVERSITY)

14 AIR QUALITY: EMISSION OF AIR POLLUTANTS/ ODOUR EMISSIONS

15 NOISE EMISSIONS

16 ENERGY EFFICIENCY MEASURES AND USE OF RENEWABLE ENERGIES

17 TRANSPORT ROUTES / ACCESS TO THE COMPANY/ TRANSPORT LINKS

18 CREATING INTEGRATED ADDED VALUE

19 COMPLIANCE WITH LAWS

20 ETHICS / VALUES

21 DEALING WITH PUBLIC AND PRIVATE INSTITUTIONS

22 PARTICIPATION OF ALL STAKEHOLDERS AND CONSIDERATION OF THEIR INTERESTS

23 INDUSTRIAL GROWTH TAKING INTO ACCOUNT REGIONAL CONDITIONS

24 REMUNERATION POLICY AND SYSTEM FOR EVALUATING THE PERFORMANCE OF TOP MANAGEMENT

25 CONSIDERATION OF THE ELEMENTS OF SUSTAINABILITY IN CORPORATE MANAGEMENT

26 RISK MANAGEMENT TAKING INTO ACCOUNT SUSTAINABILITY ASPECTS

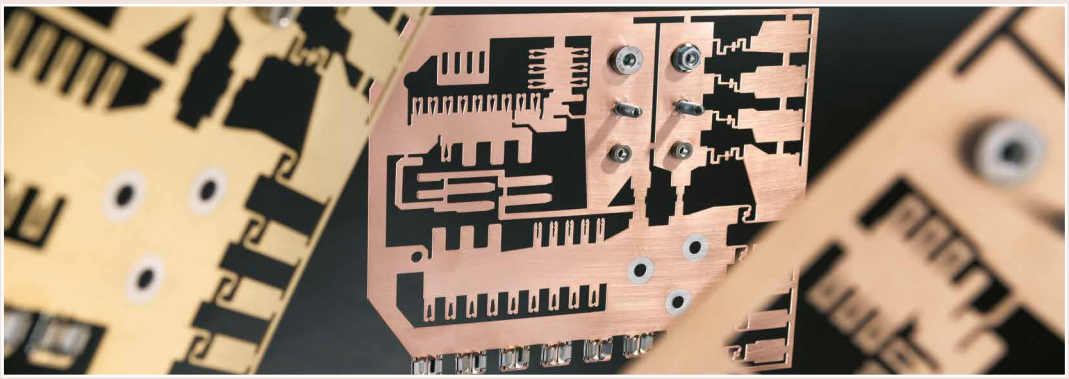
27 ASSESSMENT OF THE SUSTAINABILITY OF INVESTMENTS IN REPORTS TO THE FINANCIAL PARTNER

28 TECHNOLOGY AND INNOVATION IN BUSINESS PROCESSES

**Sustainability goals**
The activities and performances are reported by referring, through special icons, also to the sustainability goals of the United Nations 2030 Agenda.


# Our commitment

As in the early 1900s, when the plant was one of the protagonists of electrification in industry, today, after more than 100 years of history, it will support the turn towards a sustainable economy characterized by renewable energies and circular economy.
Our copper products are made with a minimum of $CO_2$ and help to reduce harmful carbon emissions in other fields.
Our factory is a responsible actor and strives to protect the environment through reducing emissions and overall environmental impact.
The idea of copper recycling has had a firm place in our economic activities since the beginning of copper production. So we work embedded in the European metal industry to establish copper cycles and to save resources. For years, our activities have focused on the circular economy as a pillar of sustainability in development. All copper-containing waste is recycled. All other waste is recycled or returned to other use.



## **INDUSTRIAL STRATEGIES** AND PROJECTS RELATED TO **ECOLOGICAL TRANSITION**

**Strategy**
Circular society / establish decarbonisation roadmap for net zero

**Program circular society**
Copper foundry: new refining line for secondary raw material

Goals:
- increase usability of scrap
- substitution of sourcing of virgin copper
- decarbonisation scope 3

**Decarbonisation roadmap**
analysis off-heat usability (source / sinking analysis)

Goals:
- Decarbonisation scope 1
- Implementation Energy Efficiency Controlling System (EnEffCo)
- Potential analysis to electrify natural gas heated processes (e.g. annealing)
- Substition of natural gas by H2 > project Electrolyseur

**Environmental impact**
- noise reduction program

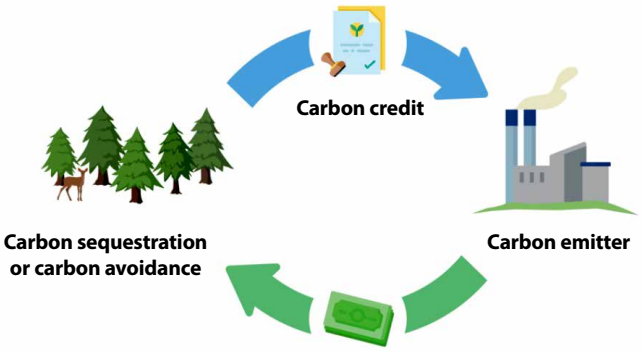
In 2021, **KME Germany GmbH** signed its commitment to emission reduction targets through the Science Based Targets (SBTi) initiative

SCIENCE BASED TARGETS
DRIVING AMBITIOUS CORPORATE CLIMATE ACTION

## OFFSETTING **CLIMATE CHANGING EMISSIONS**

With the aim of decreasing their Corporate Carbon Footprint, and contributing to the achievement of climate neutrality, the companies KME Italy, KME Mansfeld and KME Germany have planned offsetting measures through an agreement with Natural Capital Italia SpA, the first Italian holding company dedicated to the defence and conservation of natural capital (water, air, soil, biodiversity).

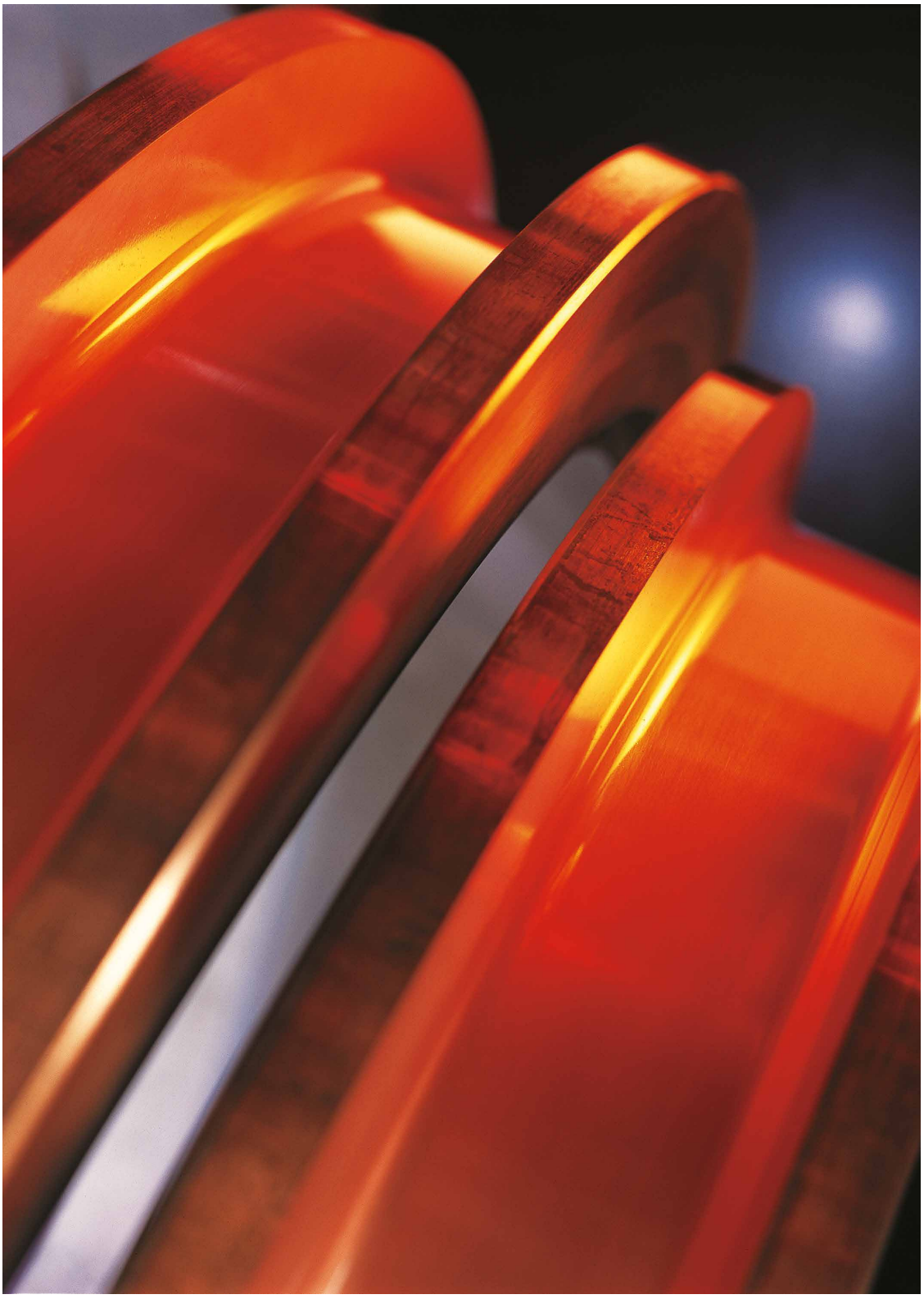
The Intek Group, which through KME carries out industrial activities, will in fact be able to purchase carbon credits from Natural Capital Italia for a value of approximately EUR 500,000, corresponding to offsetting measures for its own climate-altering emissions.
The compensatory measures are carried out at Oasi Dynamo, a nature reserve of over 1,000 hectares, affiliated to the WWF, at an altitude of 1,110 metres in the Pistoia Apennines (Municipality of San Marcello Piteglio), next to Dynamo Camp, a facility dedicated to the care of disadvantaged children. The area also includes a farm, accommodation facilities, a visitor centre, and promotes educational activities with students and researchers. In the past, this area was home to a hunting reserve; today, however, it is a virtuous model of environmental sustainability and social responsibility. In fact, Oasi Dynamo represents a perfect synergy between environmental conservation, dissemination of an environmentally friendly culture and traditional agricultural practices.




Natural Capital ITALIA

Oasi Dynamo

# 2 Companies



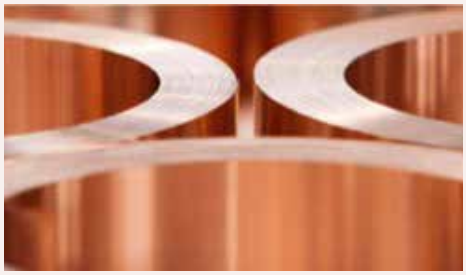
## COMPANIES

In the plant there are two operating companies, distinct and cooperating: **KME Germany GmbH** (copper products) and **KME Special Products & Solutions GmbH** (special products).

The division into two legally separate companies took place in July 2020.

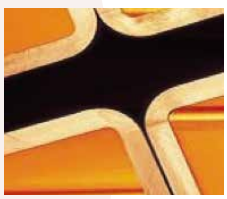
### KME Germany GmbH
(copper products)

The company is 100% owned by KME SE



### KME Special Products & Solutions GmbH
(special products)

Service Center worldwide.
Production sites in USA and China
in addition to the main site of Osnabrück.



# 2.1 Our history


**1873**
Hermann Kämper gives up his position as technical and business director of an important wire mill to become an entrepreneur. On the 1st of July he founds together with the brothers Carl and Hermann Witte the Wire and Pin factory Witte and Kämper, in which iron wire is drawn and and also further processed into pins.

**1888**
On the search of a new and additional production , which could start with the existing factory equipment, the engineer Emil Schemmann decides on the important material in the future: copper.

**1890**
On the initiative of Hermann Witte the company is converted into a public limited company the „Osnabrücker Kupfer- und Drahtwerk" (OKD) with an original capital of 1,2 Mio RM.

**1919**
The Gutehoffnungshütte Aktienverein, Oberhausen, acquires the majority of the OKD share capital. The company subsequently grows by starting cable production and becomes internationally known through exports.

**1945**
On 25 March, 1/3 of the production facilities and half of the buildings are destroyed. It is no longer possible to continue production. On April 03, the OKD is occupied by British troops. In succession the reconstruction of the destroyed plant begins. The first order after the war are shaft covers for the „MS Europa". The client is Norddeutscher Lloyd.

**1966**
On the 28 December 1966, the entry in the commercial register is made by the merger of all copper-processing companies belonging to the Gutehoffnungshütte AV group to form Kabel- und Metallwerke Gutehoffnungshütte AG. The headquarters of The Kabel- und Metallwerke Gutehoffnungshütte AG is relocated from Hannover to Osnabrück.

kabelmetal

**1982**
Kabelmetal electro GmbH, Hannover, founded one year earlier, is sold to the French company Les Cables de Lyon, based in Clichy. Kabelmetal secures a minority stake in Les Cables de Lyon.

**1987**
The Kabel- und Metallwerke Gutehoffnungshütte AG, Osnabrück, takes over the majority holding in Stolberger Metallwerke GmbH & Co. KG, Stolberg. One year later the R. & G. Schmöle Metall werke GmbH & Co. KG, Menden, are also taken over.

**1989**
The company name is shortened to KM-kabelmetal Aktiengesellschaft.

**1990**
The Italian SMI- Societa Metallurgica Italiana SpA, Florence, acquires majority stake in KM share capital.

**1995**
Following the contribution of the non-ferrous metal activities of Europa Metalli, based in Florence, and Tréfimétaux, based in Paris the company is renamed KM Europa Metal AG, or KME for short.

**1998**
The location in Osnabrück celebrates it´s 125th anniversary.

**2006**
SMI-Societa Metallurgica Italiana changes it´s name to KME Group S.p.A., making the link with it´s indutrial and productive reality more direct.

**2007**
GIM General Metallurgical Industries is integrated into Intek S. p. A. . In order to strengthen the integration between the different companies of the group, the KME Group decided to introduce the single brand KME© for all it´s subsidiaries. As a result, KM Europa Metal AG is renamed KME Germany AG, Europa Metal AG on May 1, 2007.

**2008**
On 01 April, 2008 KME Germany AG transfers it´s operating business to it´s new subsidiary, KME Germany AG & Co. KG.

**2019**
The conversion of KME AG into KME SE is followed by a 100% takeover of MKM Mansfelder Kupfer und Messing GmbH and the sale of brass and tube production in Germany and Spain. In addition, 49% of Trefimetaux SAS in France was acquired.

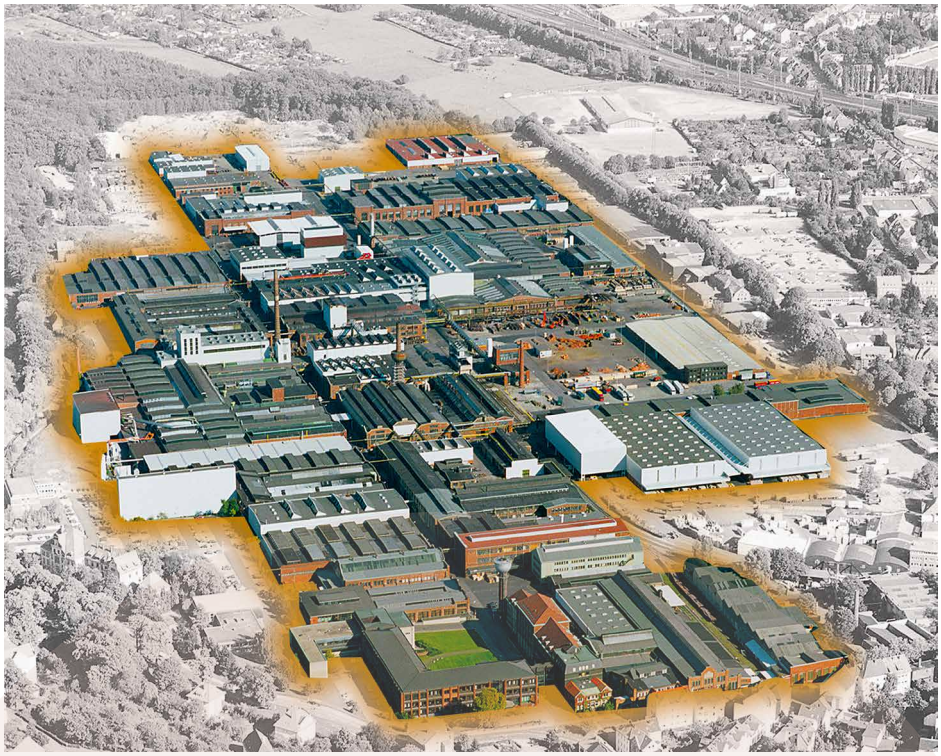
**2020**
KME Group has bundled its operations and sales activities on Osnabrück Site in separate legal entities, following a corporate reorganization to reflect the specialization and divisional competences.

**2021**
In February 2021 KME Special Products GmbH changes its name to KME Special Products GmbH & Co.KG.

KME Special Products & Solutions GmbH starts in 01.2022

# 2.2 The factory

The plant occupies an area of 575.297 $m^2$, of which about 388.399 $m^2$ are buildings and sealed areas.



**Sales**
**120,662 t**

(Rolled, Billets for tubes, Engineered, Extruded and Drawn, Marine Applications, Tube Bundles)

**Employees**
**1,634**

There is also a research center, supporting innovative developments, which includes approx. 50 patents and 60 trademarks.

# Copper Products
## Industrial Rolled Copper

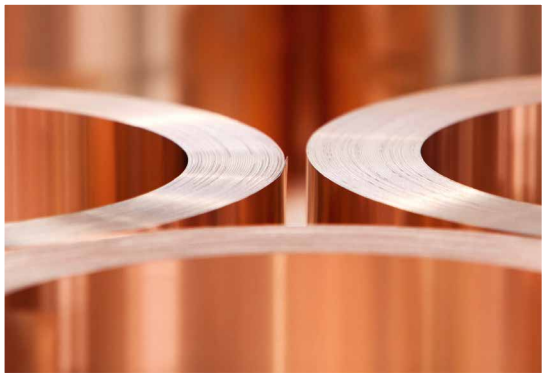
**KME** offers its customers a wide and diverse range of industrial rolled products, high quality and service to provide the best solution for specific needs, e.g.:

- the electric and electronics industry
- household appliance manufacturing
- air conditioning/refrigeration
- mechanical industry
- metal small wares
- telecommunications
- automotive industry

**COPPER PRODUCTS ARCHITECTURE**
Durable TECU® products from KME leave plenty of opportunities for modern architecture in roofing and cladding. The striking natural surfaces in copper and copper alloys allow for singular design.

**ROOFING**
TECU® Classic sheets and coils are manufactured in state-of-the-art production facilities according to EN 1172 and KME's own strict guidelines.
They are made from Cu-DHP – oxygen-free, phosphorus-deoxidised copper with limited residual phosphorus. Cu-DHP is outstandingly malleable, regardless of temperature or rolling direction.


**TECU® ECOLOGICAL COPPER**
for a greener, more responsible architecture



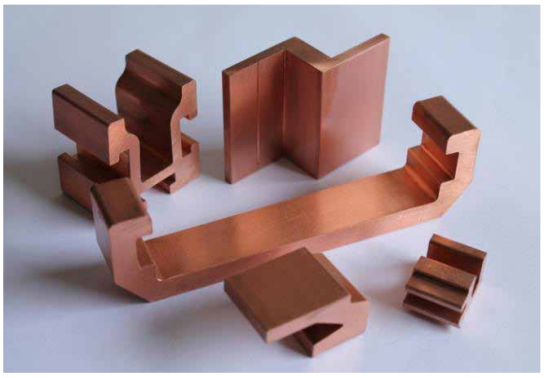
# **Special Products**
## Melting & Casting

The BU Engineered Products has all the resources and technical expertise for designing and manufacturing high performance and innovative products for the melting and casting industry.

- AMT® Advanced Mould Technology
- AMM® Advanced Mould Materials
- AFM® Advanced Funnel Mould
- AMC® Advanced Mould Coatings
- AME Advanced Mould Engineering
- ACT Advanced Crucible Technology
- ASM® Advanced Slab Mould
- AMM Advanced Mould Monitoring
- ATSM Advanced Thin Slab Mould

**EXTRUDED & DRAWN PRODUCTS**
Special requirements demand special solutions. The Special Division, of which the BU Extruded & Drawn Products is a part of, supplies just this sort of solution - often developed in close collaboration with customers and in-house or external research facilities.

- Copper- Silver
- ProCu®: Hollow Profiles and Profiles
- ANCU®-Anodes
- OSNA-Cu58®
- ELBRODUR®
- OSNISIL®



**MARINE APPLICATIONS**
Shipbuilding and offshore technology applications place especially high demands on the materials they use. KME developed products made of alloys based on copper-nickel, copper-zinc and copper-aluminium are highly resistant to the extremely corrosive effects of sea water.

- OSNA® 10/30 tubes and fittings for seawater applications
- OSNALINE® tube bundles
- Fittings of large diameter made of special material for marine shipbuilding

# 2.3 Governance

**KME Germany GmbH**
Managing Directors: Kakha Avaliani, Claudio Pinassi
Chairwoman of the Supervisory Board: Diva Moriani

**KME Special Products & Solutions GmbH**
Managing Directors: Axel Gerle, Dr. Bernhard Hoffmann

## KME Germany GmbH
## Members of the Supervisory Board

- **Ms Diva Moriani**
*Managing Director*
*(Chairperson of the Supervisory Board)*

- **Mr Marco Miniati**
*Board of Directors*
*(Deputy Chairman of the Supervisory Board)*

- **Mr Pierpaolo Di Fabio**
*Board of Directors*

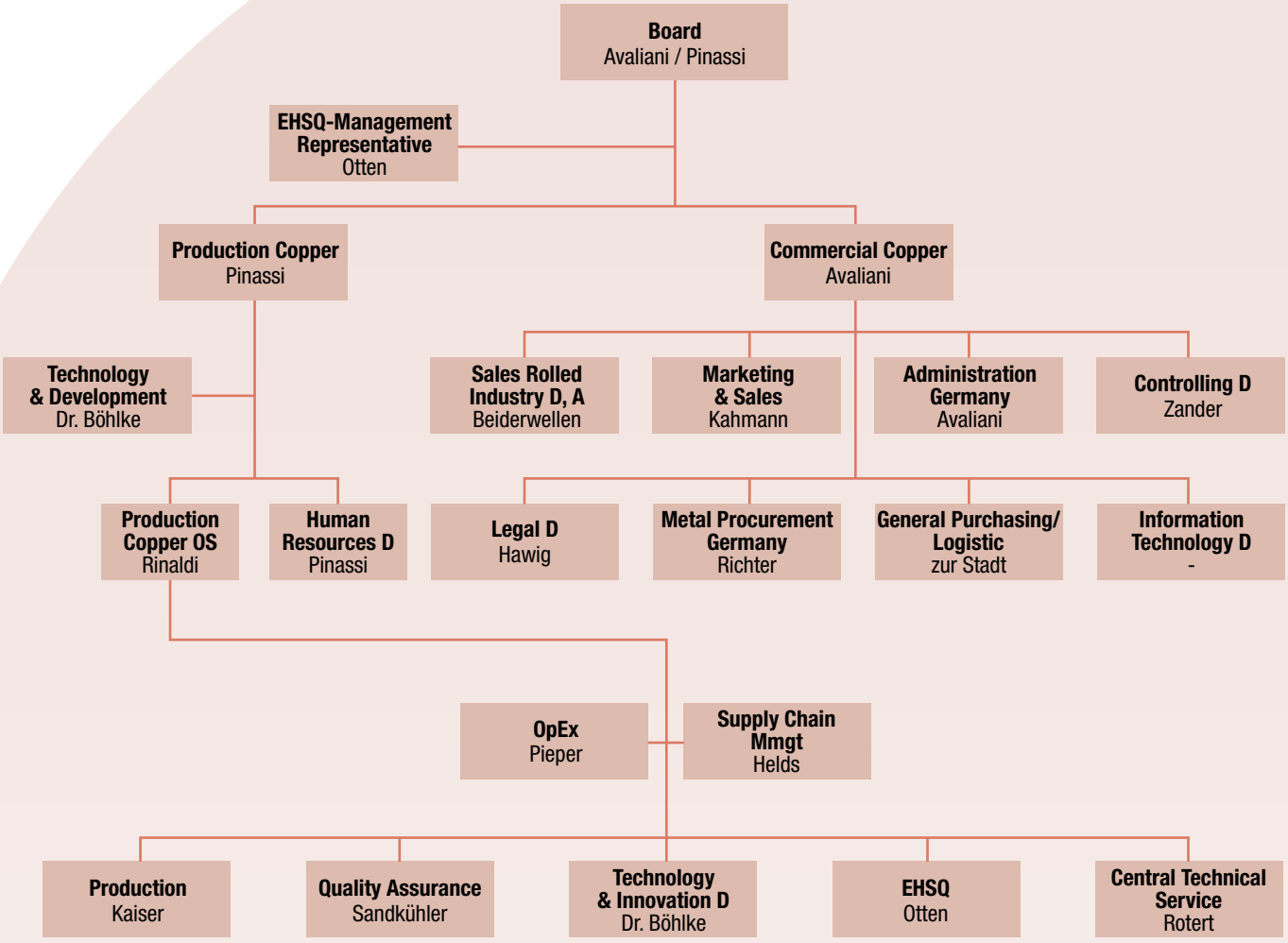
- **Ms Alessandra Pizzutti**
*Lawyer KME Group*

- **Mr Volker Asmus**
*Industrial Mechanic*

- **Mr André Lücke**
*Plumber*

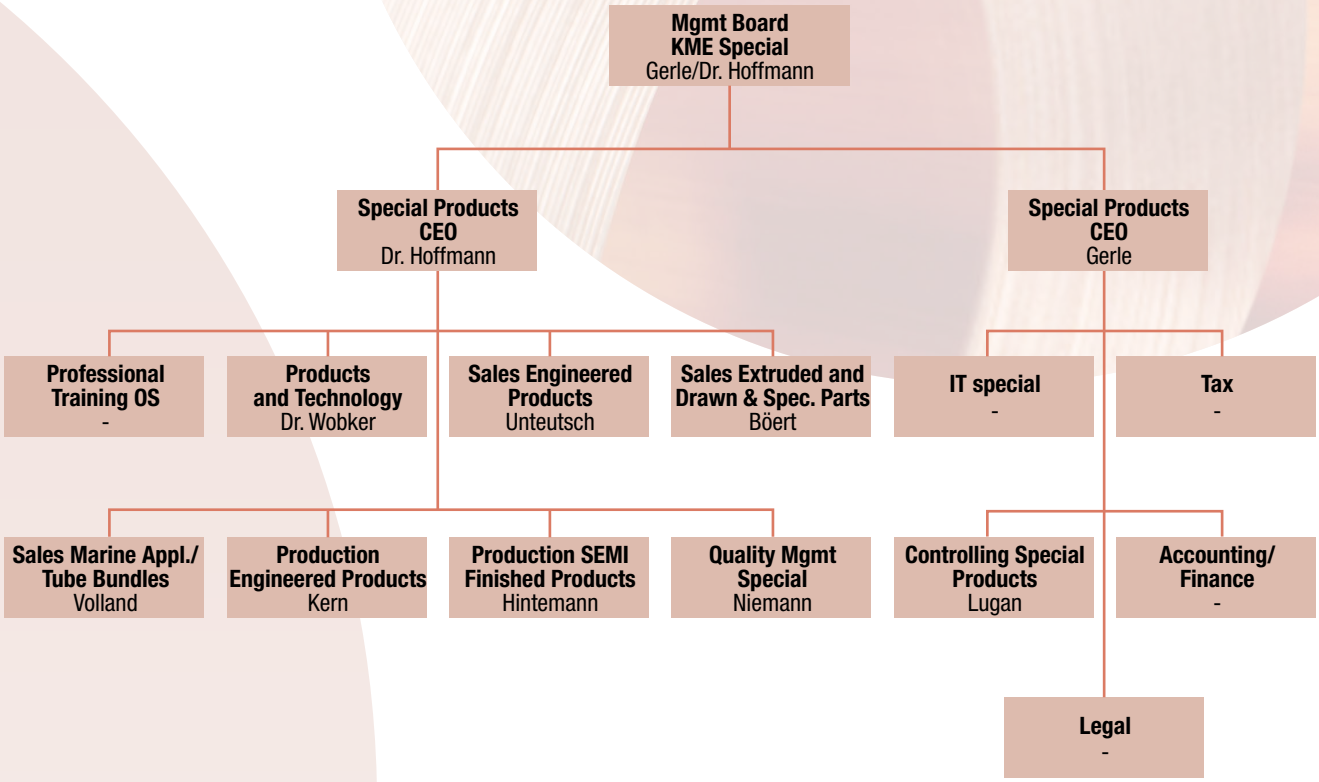
# Copper Division

## Organigram KME Germany



# Special Division

## Organigram KME Special



# 2.4 Code of conduct

The companies operate according to principles of social responsibility. It is aware of the consequences of its business decisions and actions in economic, technological, social, and environmental terms, based on its code of conduct.
KME voluntarily contributes to the long-term well-being and development of a global society at every possible point in the places where it operates. It is oriented towards ethical values and universal principles, in particular integrity, honesty and respect for human dignity. The code of conduct applies in all KME units, as well as at every possible point for its suppliers and other parts of the value chain. KME actively works to ensure that the following core values for social responsibility are put into practice in business management and are respected.

The principles and the guidelines of the KME's Group Code of Conduct (Adherence to laws, Organizational integrity and governance, Consumer interests, Communication, Human rights, Privacy, Heath and Safety, Harassment, Freedom of conscience, Working conditions, Environmental protection, Civic engagement) are explained in even more details in another document (Group Sustainability Report).

## No supply from war zones

KME purchases materials only from approved and registered suppliers, and constantly inspects their work. **Does not purchase materials from** mines located in regions of **armed conflict**.

## Legality

KME fights **corruption** in all its forms by embracing the principle enshrined in the UN Convention: *"No potential additional income of any amount can justify illegal business practices"*.

With regard to foreign countries where gifts may be offered as a form of courtesy, KME requires its employees to ensure that no dependence can develop on either the donor or the recipient, and that all applicable national and international regulations are complied with. The company also requires them to inform the project supervisor about gifts of any kind.

# 2.5 Certifications

EHSQ MANAGEMENT SYSTEM (environment, industrial safety and health protection, energy, quality)
The management systems implemented at KME comply with the requirements of the international standards:

### KME Germany GmbH

- ISO 9001:2015 (Quality Management System)
- IATF 16949:2016 (Quality Management System for Automotive Applications)
- ISO 14001:2015 (Environmental Management System)
- ISO 45001: 2018 (Occupational Health and Safety Management Systems)
- ISO 50001:2018 (Energy Management)

### KME Special Products & Solutions GmbH

- ISO 9001:2015 (Quality Management System)
- ISO 14001:2015 (Environmental Management System)
- ISO 45001: 2018 (Occupational Health and Safety Management Systems)
- ISO 50001:2018 (Energy Management)

# 2.6 Sales

In 2021 sales amounted to **120,662 t**, of which:

- 108,888 tons related to KME Germany
- 11,774 tons to KME Special Products.

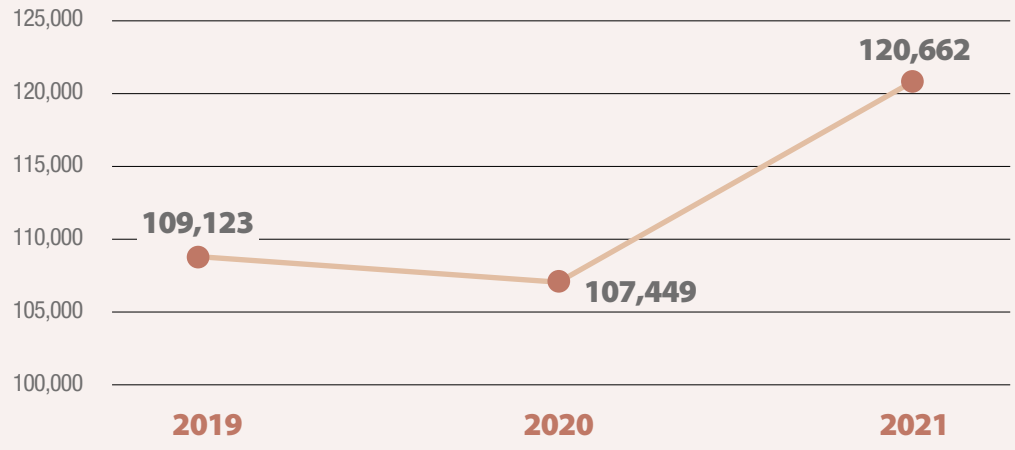
Compared to 2020, sales increased by **12.3%**.

| SALES (t) | | 2019 | 2020 | 2021 |
|---|---|---|---|---|
| KME Germany | Rolled Building | 6,282 | 10,618 | 7,904 |
| | Rolled Industry | 49,828 | 44,536 | 60,192 |
| | ARC Solutions | 1,198 | 934 | 1,291 |
| | Tubes Industrial /Plumbing/Billets | 39,857 | 38,791 | 39,502 |
| KME Special | Engineered Products | 5,445 | 5,944 | 3,177 |
| | Maritime Applications | 1,728 | 2,545 | 1,623 |
| | Extruded and Drawn Products | 4,785 | 4,081 | 6,974 |
| **Total** | | **109,123** | **107,449** | **120,662** |

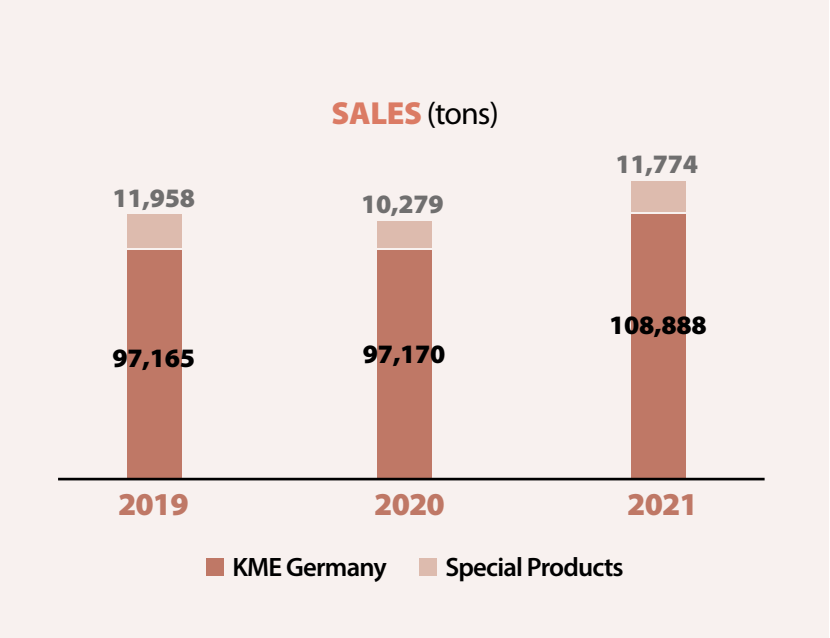
**Sales**
**120,662 tons**

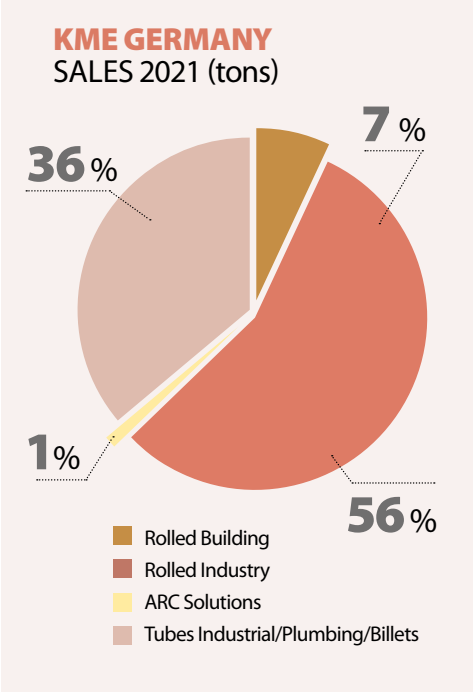
**+12.3%**

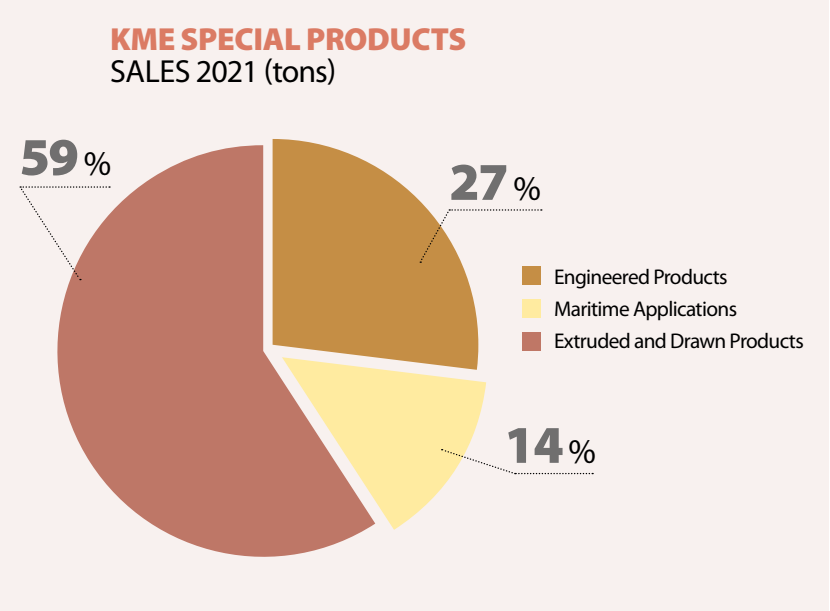
**TOTAL SALES**
(tons)

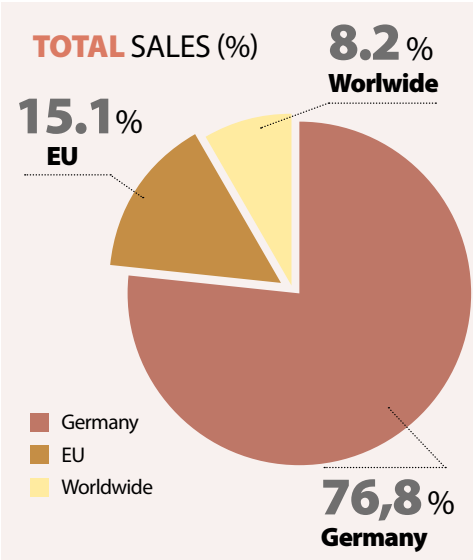


# SALES



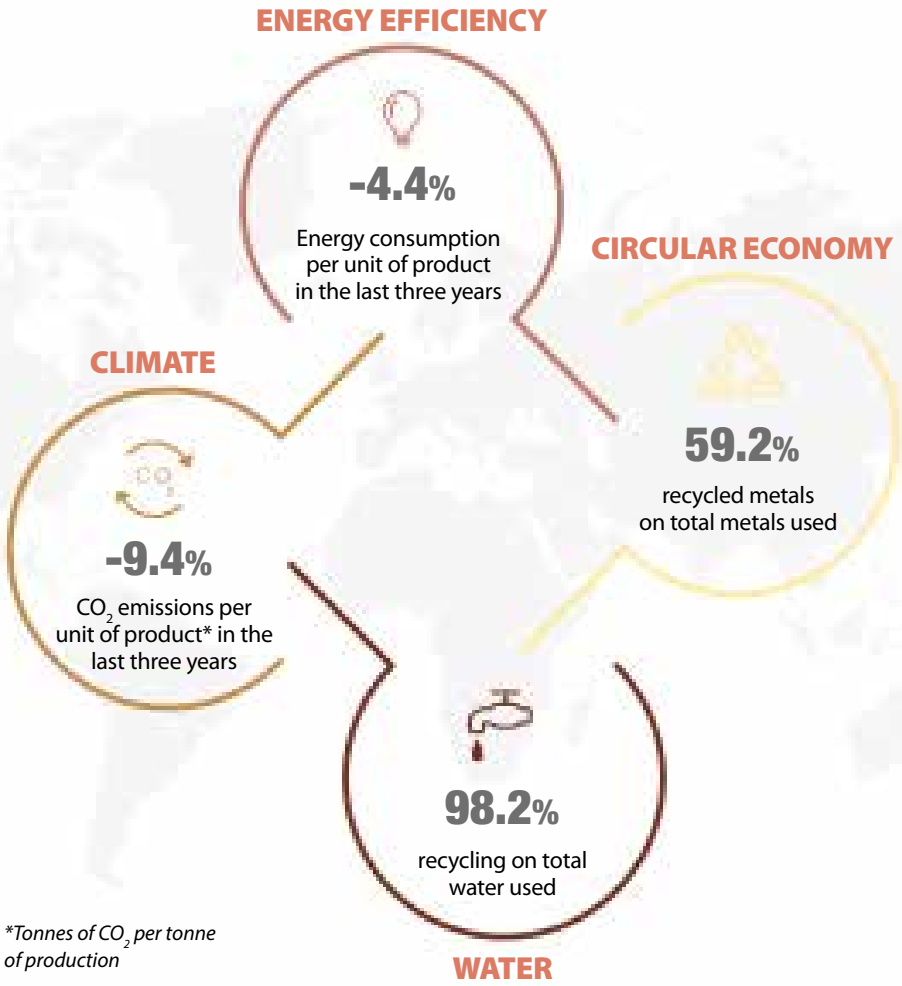




Sales are 76.8 % in Germany, 15.1 % in other European Union countries, and 8.2 % in the rest of the world.

| SALES (t) | KME Germany | % | KME Special | % | Plant | % |
|---|---|---|---|---|---|---|
| Germany | 89,234 | 81.9 | 3,421 | 29.1 | 92,655 | 76.8 |
| EU | 14,190 | 13.0 | 3,979 | 33.8 | 18,169 | 15.1 |
| Worldwide | 5,465 | 5.0 | 4,374 | 37.1 | 9,839 | 8.2 |
| **Total (tons)** | **108,888** | **100.0** | **11,774** | **100,0** | **120,662** | **100.0** |

# 3 Environmental sustainability




*Tonnes of $CO_2$ per tonne of production*

# 3.1 Environmental management system

As stated in the KME Group's Code of Conduct, protecting the environment is a priority for our business.
There are 8 assets in operation that require approval under German law. In addition, 5 of these assets are subject to the European Industrial Emissions Directive and are controlled by German authorities. The results of the inspections are made public. For years, these reports have confirmed that the company is operating in compliance with the European law. The installation of a certified management system includes the obligation of the top management to specify the energy and environmental policy and to have the necessary resources ready to activate procedures and processes that aim to bring about a continuous improvement in energy and environmental performance.
To this end, the energy and environmental performance is assessed, deficits identified and measures generated. Internal and external audits are carried out. Results will be reported to the management.

# **Company** policy

CONCERNING ENVIRONMENTAL PROTECTION,
ENERGY EFFICIENCY, OCCUPATIONAL HEALTH
AND SAFETY AS WELL AS QUALITY MANAGEMENT (EHSQ)

We wish to maintain our companies in the long-term through the continual fulfilment of shareholders' fair profit expectations. The essential requirements for achieving this are the long-term satisfaction of our customers, the health and safety of our employees, efficient and sustainable business processes, as well as reasonable consideration of the issues which concern all other interested parties. This policy documents our attitude towards economical and ecological responsible management of business activities whilst providing safe and reliable jobs. We are convinced that quality, environmental protection, industrial safety and health protection as well as energy efficiency represent a positive complement to the economic activity of our company and are therefore considered equally important. The manufacture of our products by melting, casting, drawing and rolling, together with mechanical processing, involves energy-intensive processes. Even using state-of-the-art technology, these processes nevertheless involve certain safety-related residual risks as well as the utilization of natural resources. The situation of our location within urban areas also necessitates an increased degree of consideration.
The management system applies in this context and takes the following requirements into consideration:

- ISO 14001 - Environmental management system
- ISO 50001 - Energy management system
- ISO 45001 - Occupational Health and Safety Management
- ISO 9001 - Quality management system
- IATF 16949 - QMS standard for the automotive industry (KME Germany)

Apart from the fulfilment of requirements resulting from the ongoing evaluation of our processes concerning quality, industrial safety and health protection, and environmental protection and energy efficiency we commit ourselves to:

- the continuous improvement of our management systems
- fulfilment of customer requirements
- adherence to prevailing legal requirements and all requirements in the context of this management system
- continual improvement of our energy related performance

For the determination of our targets and as an indicator of our achieved performance derived from the contextual analysis we establish the following strategic framework:

- assurance of high customer and employee satisfaction
- adherence to the zero defect principle (minimal failure costs) and the "zero-accident company" philosophy
- opening up to new markets by innovation in product development and expansion of strategic partnerships
- continuous improvement of performance, in particular by
  - optimising internal processes and interfaces within the company, innovation in process development
  - continuous improvement of energy and resource efficiency.

- prevention of occupational diseases as well as preservation and improvement of employees'health
- reduction of environmental impact, with regard to air pollutants and sound emissions
- consideration of state of the art technology in investment plans
- procurement of energy efficient products and services inasmuch as they are affecting our energy related performance

MONITORING
By means of internal and external audits, we review the effectiveness and improvement of the management system and the requirements to which we are obliged to adhere. All managers are committed to implementing necessary quality measures, corrective and preventive actions relating to their area of responsibility in a manner, which takes root causes and deadlines into account and to constantly monitor adherence as well as effectiveness of these measures.

PARTNER COMPANIES
We put great emphasis on the procurement of flawless, environmental-friendly and energy-efficient products and services. We expect our business partners to share our rules and goals. Performing activities at our premises, we require adherence to the same standards as we exercise ourselves.

COMMUNICATION
Open dialogue ensures the transparency of our actions. For this purpose we guarantee our employees, as well as persons acting on our behalf, access to all necessary information and training. We review the company policy regularly to ensure relevance and appropriateness and inform employees as well as all other persons acting on our behalf. Further interested parties have the opportunity to view our policy on our company website. Other appropriate information can be supplied upon justified request. We urge all employees and other persons who work for KME to engage actively and, by means of their personal commitment, to contribute to the successful implementation of this policy and its' related targets As senior management, we assure our own commitment as well as the provision of all necessary information and resources.

# Methodological **note**

*To calculate the specific indicators per unit of products, reference was made to the official company figures for sales. It means that production corresponds to sales. Change in inventory is not taken in account.*

# 3.2 Energy

Reducing energy consumption is a very important objective for the copper industry. First of all from an environmental point of view, to contribute to the reduction of greenhouse gas emissions. But it is also important from an economic point of view to reduce production costs.

## **Energy efficiency** to protect the climate

Copper is potentially climate friendly. According to calculations published by the Eco Institute in Freiburg, its **global warming potential** per kilogram of primary metal is 2 kg of $CO_2$ equivalent. In comparison, one kilogram of gold has a global warming potential of 18,000 kg of $CO_2$ equivalent. The cumulative energy consumption of gold per kg of primary metal is also 8,700 times that of copper. However, the energy expenditure in copper production is still high.

Because the energy used to obtain copper from recycled materials is up to 90% less than that required to obtain copper from ore, we use recycled copper in addition to copper from ore. And the companies pay close attention to **energy conservation**, taking a wide range of measures to significantly increase its energy efficiency. We have an **energy management system** based on the international standard ISO 50001:2018, which it applies consistently and successfully.

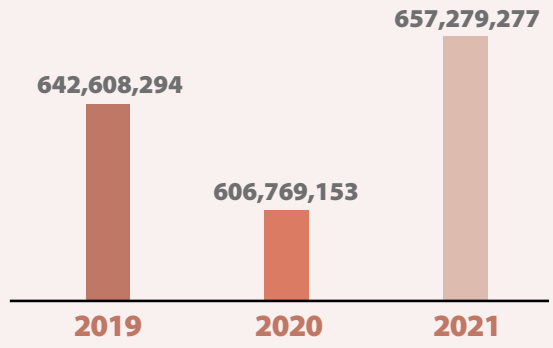
### Energy consumption

The factory uses **natural gas** and **electricity**. It also uses limited quantities of diesel, petroleum and heizol EL.
Electricity consumption amounted to **109,222,634 kWh**, while those of natural gas amounted to **657,279,277 MJ**. The total energy consumption in 2021 was **294,700,318 kWh eq**. Compared to 2020 there was an increase of 9.2%.

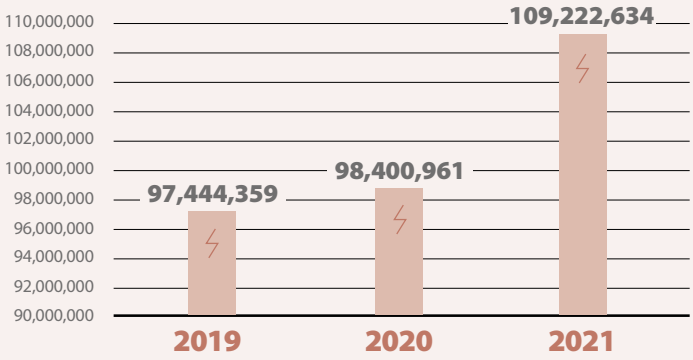
### ENERGY CONSUMPTION

| | 2019 | 2020 | 2021 |
|---|---|---|---|
| **Natural gas (MJ)** | 642,608,294 | 606,769,153 | 657,279,277 |
| **Diesel (MJ)** | 10,035,826 | 9,985,938 | 10,408,786 |
| **Petroleum (MJ)** | 55,815 | 51,545 | 24,400 |
| **Heizol EL (MJ)** | - | - | 7,200 |
| **Electricity (kWh)** | 97,444,359 | 98,400,961 | 109,222,634 |
| **Total (kWh eq.)** | **278,749,897** | **269,736,138** | **294,700,318** |

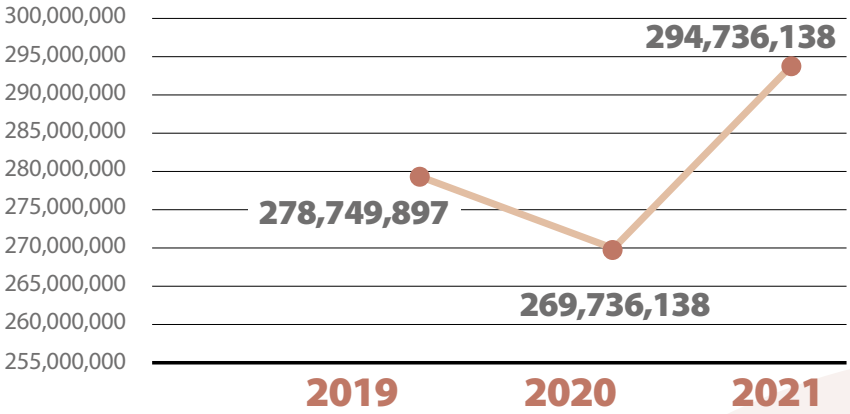
## NATURAL GAS (MJ)




## ELECTRICITY (kWh)




## TOTAL ENERGY CONSUMPTION (kWh eq.)




### Energy intensity

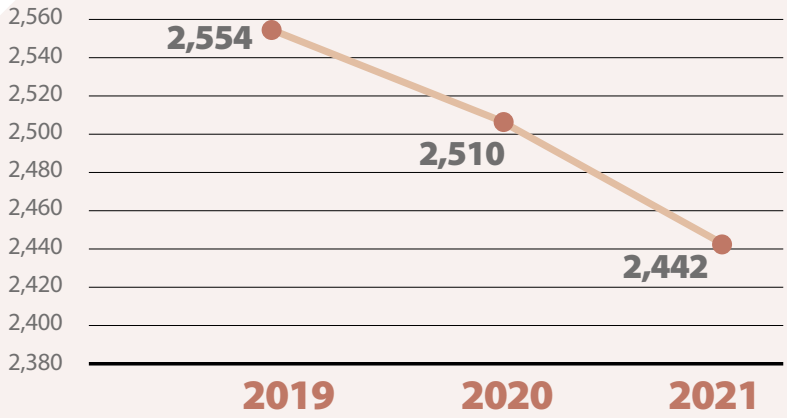
However, the absolute value of consumption does not help to fully understand efficiency levels, because they obviously depend on the production volume.
The most significant figure for measuring efficiency is **energy intensity**, i.e. **specific consumption per unit of product**.
2,442 kWh eq was consumed per ton of product in 2021. Compared to 2020 there was a reduction of 2.7%. Data shows continuous improvement in recent years.

### Energy efficiency measures

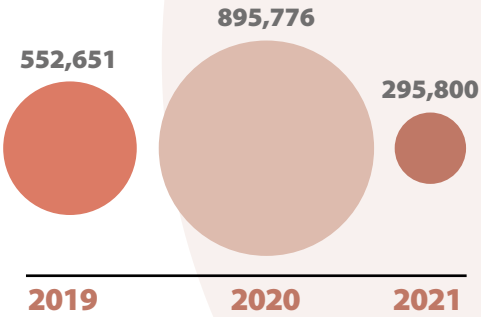
Some data highlight the results achieved through energy efficiency measures and energy savings in the use of natural gas and electricity (measures on gas oven, lighting and heating systems, etc.):

- In **2021**, through measures related to electricity and gas consumption, the savings were **295,800** kWh eq.
- Over the three-year period (2019-2021), interventions in natural gas and electricity use have saved **1,744,227** kWh eq.

## ENERGY INTENSITY (kWh eq/ton)




Reduction of consumption thanks to **energy efficiency** measures



# 3.3 Materials

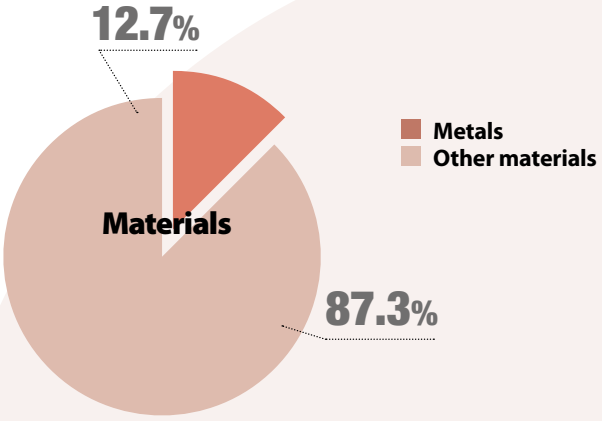
**Efficiency in the use of material resources** and the **use of recycled materials** are very important elements for the environmental sustainability of the industry. Those who produce copper and copper alloys, from this point of view, can leverage the fact that copper is a so-called "permanent" material, potentially infinitely recyclable. The factory uses **copper scraps**.

## Materials used

**133,307 tons** of materials (mining and refining; metal scraps market; metal trade; chemical, wood, paper, plastic industry; other sources) were used in 2021. The materials used are **87.3% metals** (new metal, scrap and semi-finished)*.

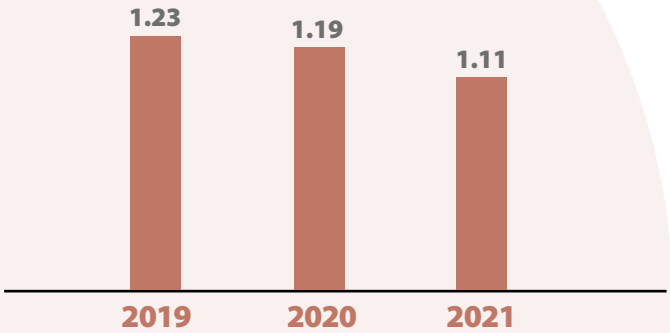
**Metals not used for the process are not included*

| MATERIALS | (tons) |
|---|---|
| **New metal** (copper, zinc, tin, nickel, silverin cathods, ingots, etc.) | 45,496 |
| **Scraps** | 48,306 |
| **Semi-finished** (produced with new metal) | 22,580 |
| **Total Metals (t)** | **116,447** |
| **Other Materials (t)** | **16,859** |
| **Total (t)** | **133,307** |

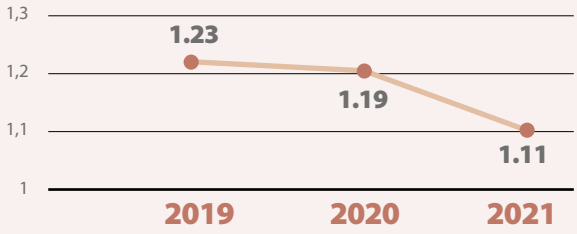



## Materials used per unit of product

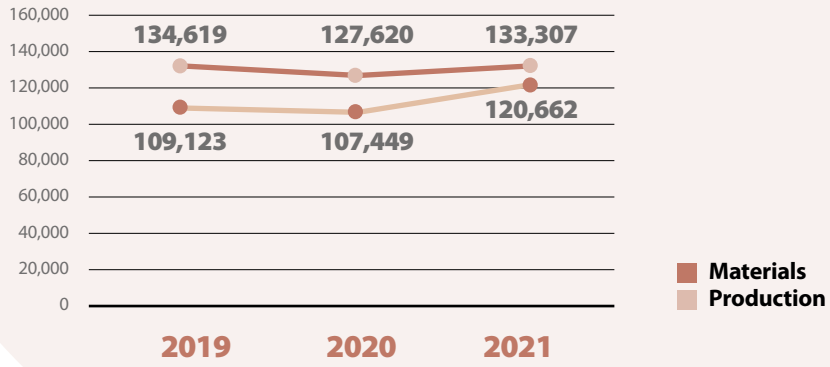
In 2021 for every ton of product 1.11 tons of materials were used. Compared to previous years there is an important reduction.



## MATERIALS USED PER UNIT OF PRODUCT (tons/ton)




## MATERIALS AND PRODUCTION (tons)




### Renewable raw materials

3,038 tons of materials used in 2021 (wood packaging) can be classified as **renewable raw materials**. Of the total materials used, they make up only 2.3%, but net of metals the percentage of renewable raw materials rises to 18%.

## RENEWABLE RAW MATERIALS

| | 2019 | 2020 | 2021 |
|---|---|---|---|
| **Tons** | 3,767 | 3,517 | 3,038 |
| **Percentage of total materials** | 2.8% | 2.8% | 2.3% |
| **Percentage of other materials** (net of metals) | 16.9% | 20.2% | 18% |

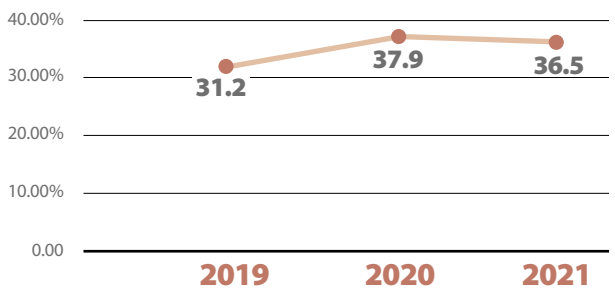
### Recycled materials

In 2021, the plant used 48,306 tons of **scraps** from external processes. Including the use of **recycled packaging** (321 tons), the total amount of materials for recycling is **48,627 tons**, corresponding to **36.5%** of materials used.

## RECYCLED MATERIALS

| | 2019 | 2020 | 2021 |
|---|---|---|---|
| **% recycled materials used** | 31.2% | 37.9% | 36.5% |

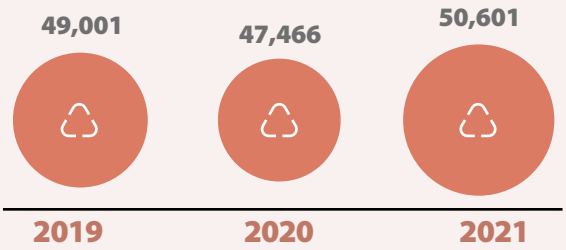
## RECYCLED MATERIALS (%)




### Internal recycling

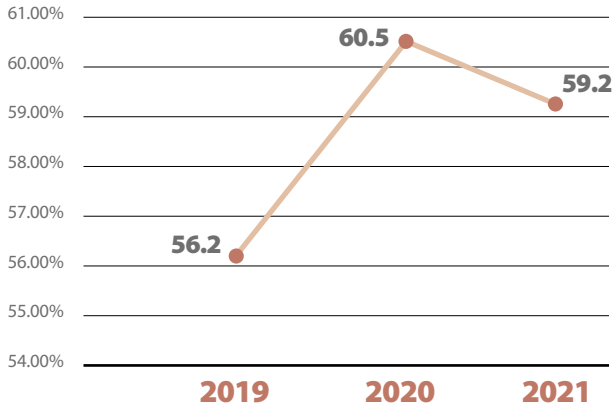
From the point of view of the principles of circular economy, another significant figure is that of internal recycling at the plant. In fact, a relevant part of metals, otherwise destined to come out as waste, is reused through **internal recovery processes** at the plant. **50,601 tons** were thus recovered and reintroduced into the production cycle. This makes it possible to increase efficiency in the use of materials, reduce the consumption of virgin raw materials and minimize waste.

## INTERNAL RECYCLING (tons)




Calculating also the quantity of metals re-introduced in the production cycle through internal recycling, the tons of metals processed are 167,048 tons (metals from outside plus metals recycled inside the plant). In this sense, the **percentage of total metals recycled** (from external recycling and internal reuse) **is 59.2 % of metals processed**.

## TOTAL RECYCLED METALS
(% metals processed)



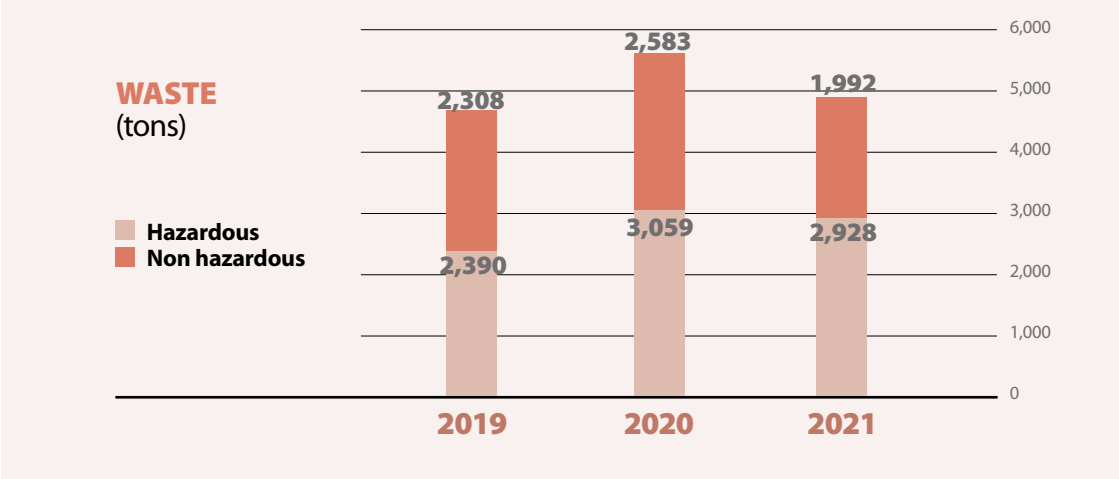
# 3.4 Waste

## Waste production

The amount of waste produced by the plant amounted to 4,920 tons (-12.8% compared to 2020).

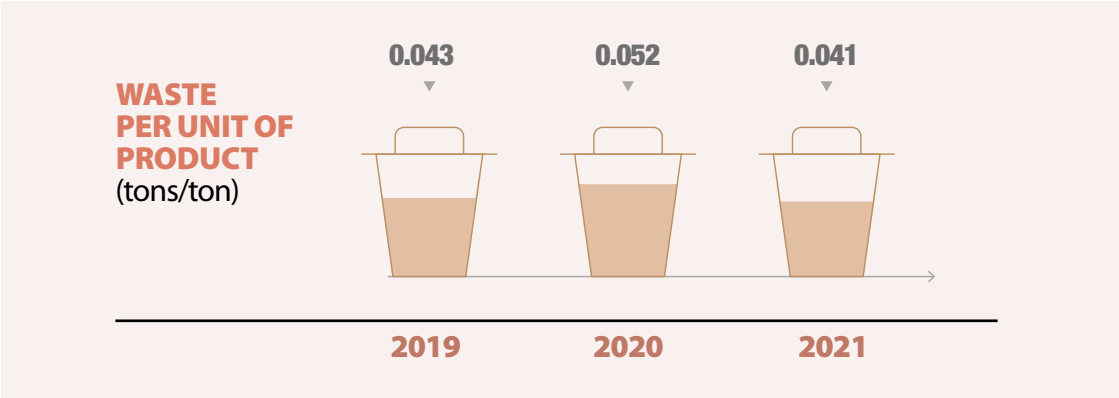
**WASTE** (tons)

| | 2019 | 2020 | 2021 |
|---|---|---|---|
| **Non hazardous** | 2,308 | 2,583 | 1,992 |
| **Hazardous** | 2,390 | 3,059 | 2,928 |
| **TOTAL** | **4,698** | **5,642** | **4,920** |




## Waste per unit of product

An important indicator is the amount of waste generated per unit of product. In 2021 it is **0,041 tons** per unit of product.



# WASTE

### Waste Management

**43.6%** of the waste produced is sent for **recovery**.

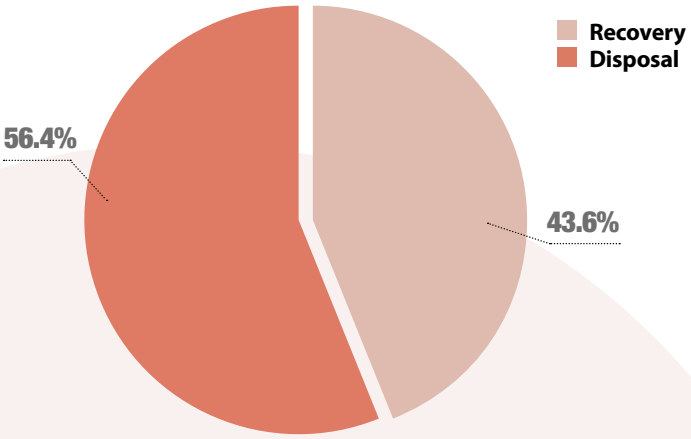
## HAZARDOUS WASTE (tons)

| | 2019 | 2020 | 2021 |
|---|---|---|---|
| **Recovery** | **212** | **150** | **162** |
| **Disposal** | 2,178 | 2,909 | 2,766 |

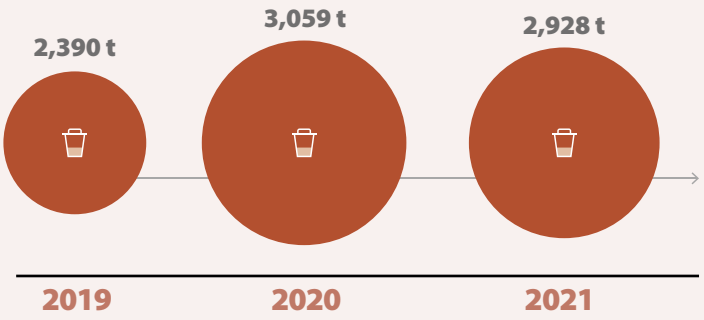
## NON-HAZARDOUS WASTE (tons)

| | 2019 | 2020 | 2021 |
|---|---|---|---|
| **Recovery** | **2,308** | **2,583** | **1,984** |
| **Disposal** | - | - | 8 |

## WASTE MANAGEMENT




Dangerous **waste** transported (tons)



# 3.5 Greenhouse gas emissions

Since 2013, copper-producing industries have been involved in the Emission Trading Scheme (ETS), the main tool adopted by the European Union to achieve $CO_2$ reduction targets in major industrial sectors.

## How greenhouse **gas emissions** are calculated

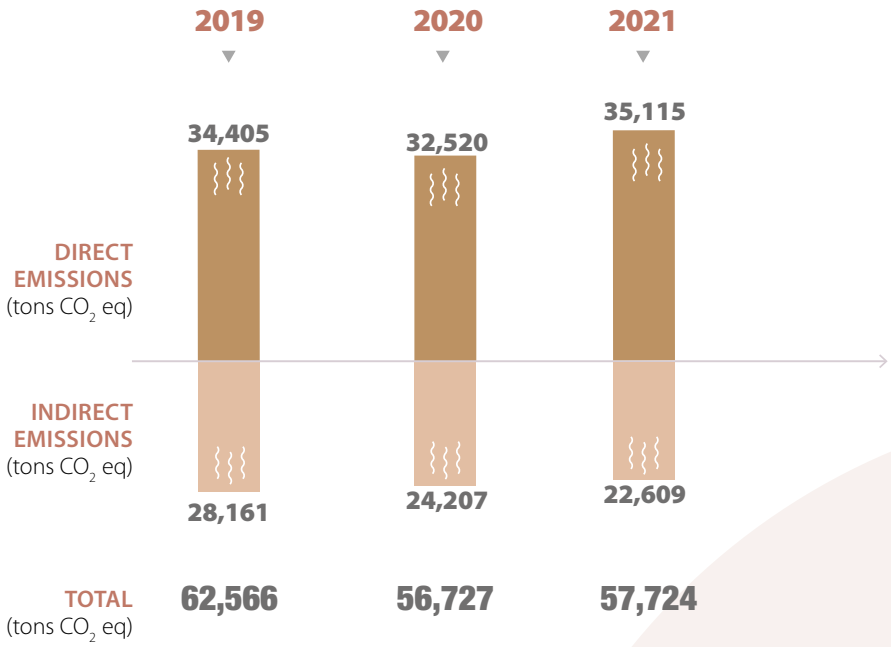
The calculation of GHG emissions is based on the GHG reporting system, which classifies GHG emissions into:
- direct emissions;
- indirect emissions* from the production processes of purchased and consumed energy;
- other indirect emissions (e.g. from transport).

As information on the latter is not available, the calculation of emissions reported in this report concerns direct emissions and indirect emissions connected with the production of electricity purchased from the grid.

**The calculation of indirect emissions from electricity consumption is made with reference to the greenhouse gas emission factors of the national energy mix.*

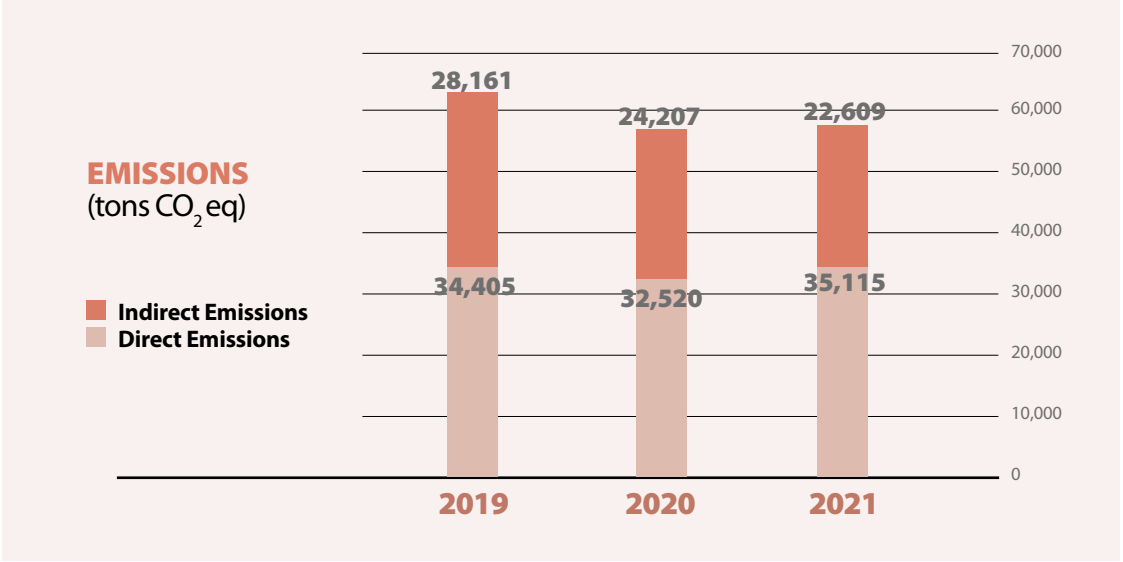
### Total emissions

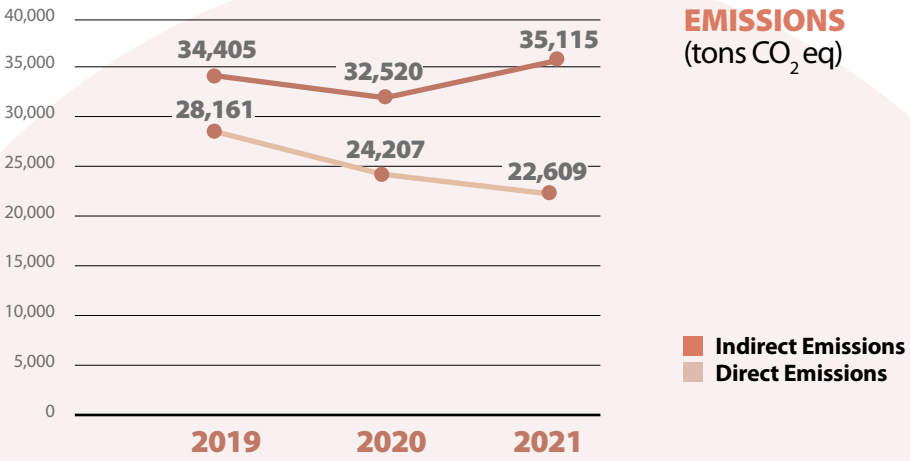
Adding together direct emissions (from production at the factory) and indirect emissions (related to the production of purchased and consumed electricity), **total emissions** in 2021 were **57,724 t $CO_2$ eq.**, with an increase of 1.7% compared to 2020 and a reduction of 7.7% compared to 2019.




| GREENHOUSE GAS EMISSIONS $CO_2$ EQ. (t) % 2020 /2021 | |
|---|---|
| DIRECT EMISSIONS | +8% |
| INDIRECT EMISSIONS | -6.6% |
| TOTAL | +1.7% |

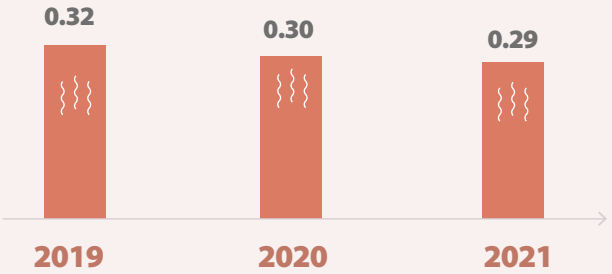
# GREENHOUSE **GAS EMISSIONS**



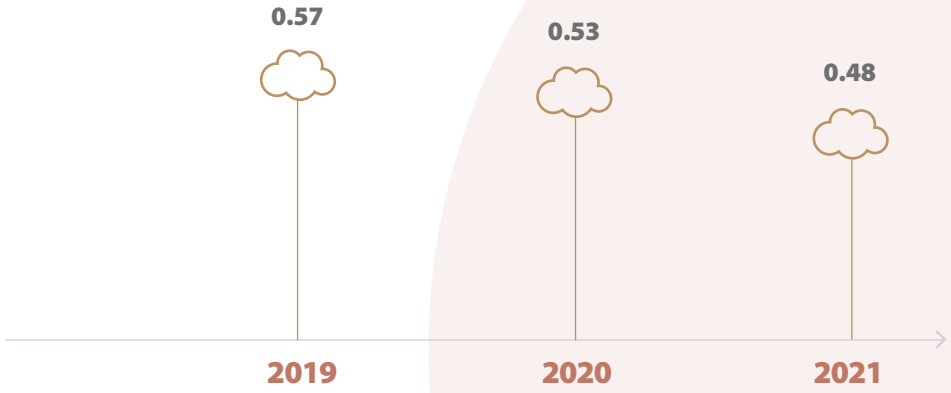

## DIRECT EMISSIONS PER UNIT OF PRODUCT
(tons $CO_2$ eq/ton)

**Emissions per unit of product**
Direct greenhouse emissions per unit of product decreased of 3.3% compared to previous years.



**Total greenhouse emissions** (direct plus indirect) **per unit of product** decreased by 9.4% compared to 2020. Indeed **0.48 tons** of $CO_2$ eq. per unit of product was generated in 2021, while it was 0.53 in 2020 and 0.57 in 2019.

## TOTAL EMISSIONS PER UNIT OF PRODUCT
(tons $CO_2$ eq/ton)




If we compare it with 2018, when the total emissions per unit of product were 0.73 tons, the reduction is even more important, because it amounts to 34.2%.

From **2018** to **2021** **emissions** per unit of product **have been reduced** by

**34.2%**

### Avoided emissions

The measures taken to improve energy efficiency in the plant have significantly reduced greenhouse gas emissions. 63,9 tons of $CO_2$ eq. were avoided in 2021.

| **Avoided emissions** through energy efficiency measures | 2019 | 2020 | 2021 |
|---|---|---|---|
| **tons $CO_2$ eq.** | **159.7** | **385.5** | **63.9** |

In the three-year period 2019-2021 were avoided 609.1 tons of $CO_2$ eq.

Greenhouse emissions avoided in the last three years thanks to energy efficiency and energy saving actions

**609.1**

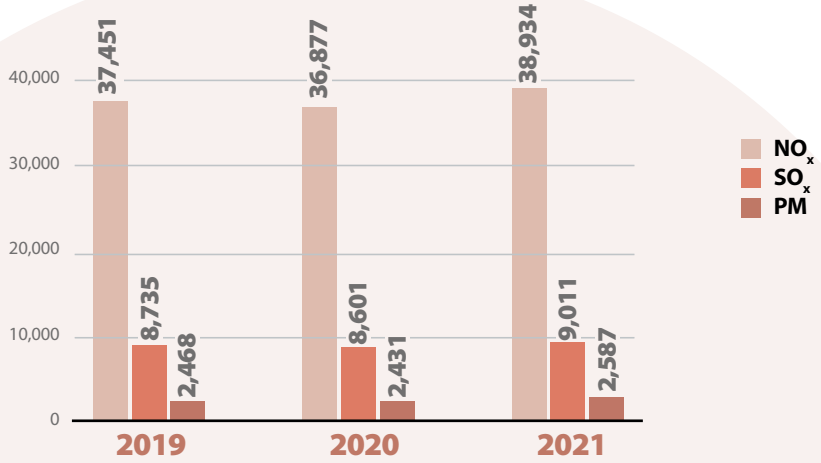
tons $CO_2$ eq

# 3.6 Other emissions

### Emissions

The emissions generated by the activities of the plant concern in particular **nitrogen oxides ($NO_x$)**, **sulphur oxides ($SO_x$)** and **particulate matter (PM)**.
**$NO_x$** emissions were 38,934 kg; **$SO_x$** emissions were 9,011 kg and **PM** emissions were 2,587 kg.

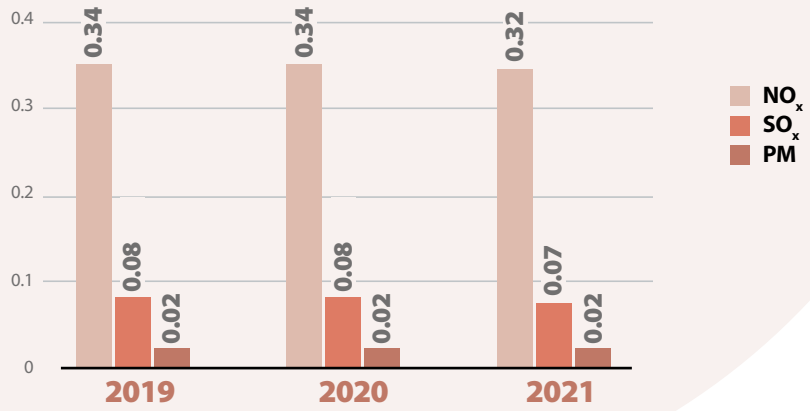
**EMISSIONS** (Kg)




### Emissions per unit of product

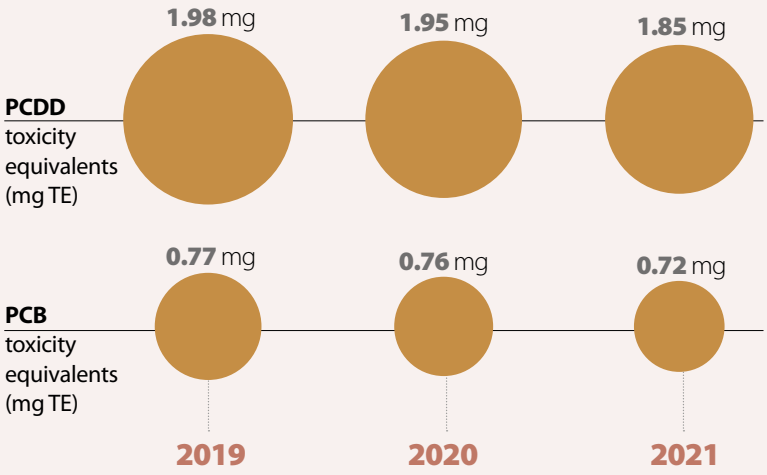
Data on specific emissions, i.e. the amount of emissions per unit of product, show a reduction in the last year.

**EMISSIONS PER UNIT OF PRODUCT** (Kg/t)



## OTHER EMISSIONS

There are also emissions of hazardous air pollutants, which have been decreasing over the last three years.



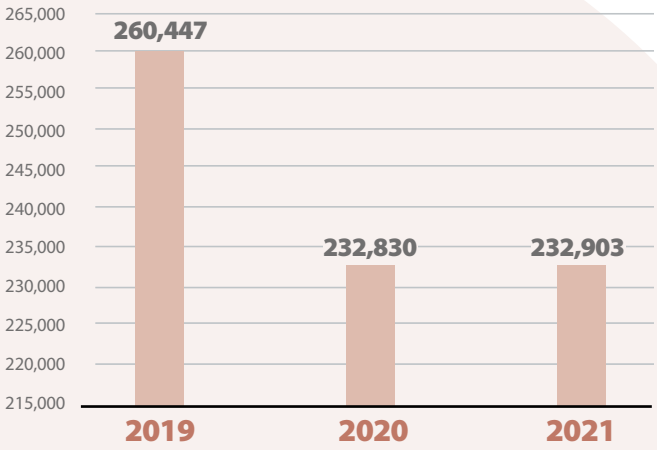

# 3.7 Water

**232,903 m³** of water was withdrawn in 2021.

**WATER** ($m^3$)

| | 2019 | 2020 | 2021 |
|---|---|---|---|
| WATER SOURCE | **149,786** | **134,062** | **139,841** |
| PUBLIC PIPELINE | **110,661** | **98,768** | **93,062** |
| **WATER WITHDRAWAL** | **260,447** | **232,830** | **232,903** |
| **WATER DISCHARGE** | **19,366** | **18,094** | **22,703** |
| **WATER CONSUMPTION** | **241,081** | **214,736** | **210,200** |

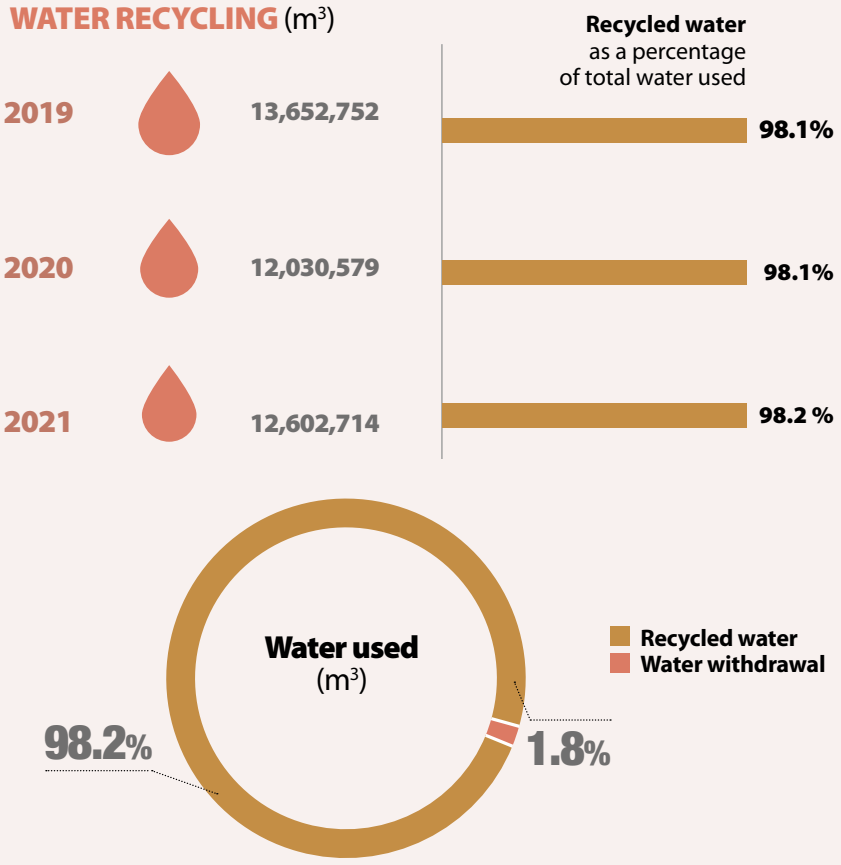
**WATER WITHDRAWAL** ($m^3$)




**22,703 m³** of water (of which 13,328 $m^3$ after physico-chemical purification treatment) were discharged into the river.
So 210,200 $m^3$ of water were consumed in 2021 (**-2.1%** compared to 2020).

## Recycling

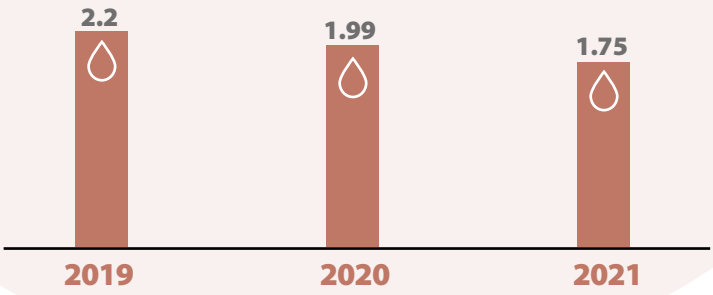
Thanks to this virtuous system, a considerable amount of water is recycled and reused in the industrial process. 12,602,714 $m^3$ were recycled and reused in 2021. This means that the total volume of water required, without these recirculation systems, would have been 12,835,617 $m^3$. The prevailing share of water used in the process comes from recycling: in the last year, this percentage reaches 98.2%.
So this system of recycling avoids the withdrawal of significant volumes of water.




# WATER

**Specific consumption**
For every ton of products, 1.75 m³ of water was consumed in 2021.

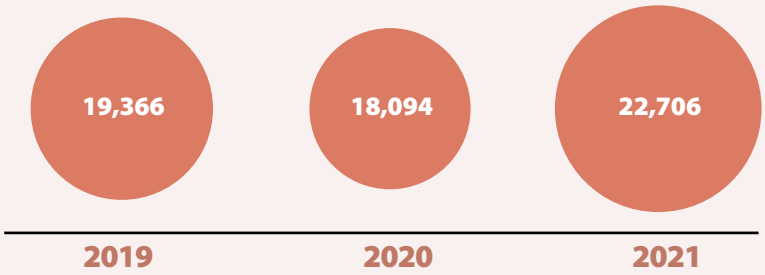
## WATER CONSUMPTION PER UNIT OF PRODUCT (m³/ ton)



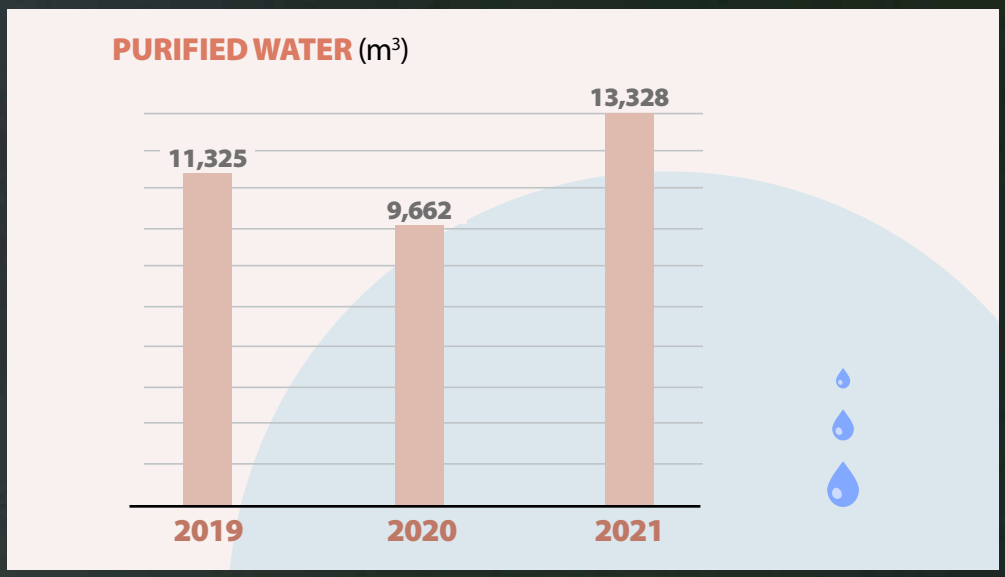

# 3.8 Purification and water discharges

**22,703 m³** of water were discharged into the Hase river.

## WATER DISCHARGES (m³)




**13,328 m³** of water were purified through a physico-chemical treatment with selective resins for heavy metals, sand filter and carbon filter.

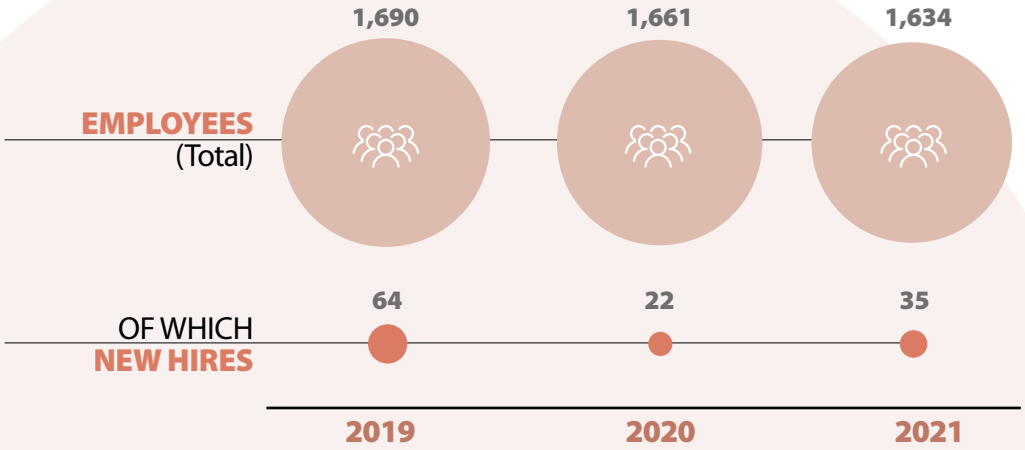



The values of pollutants in the wastewater are well **within the limits**, according to federal acts.

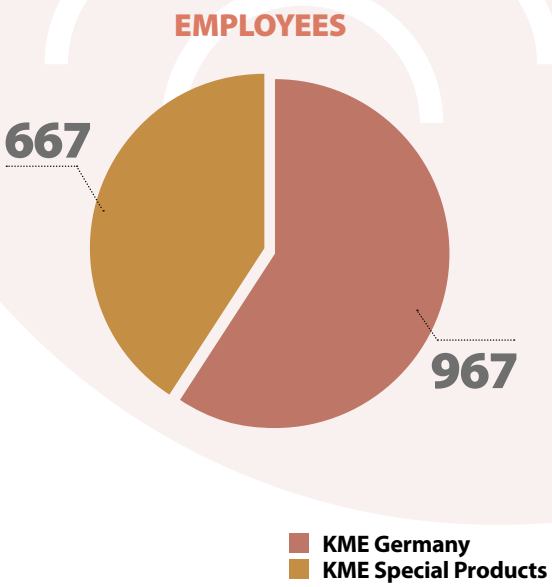
# 4 Social sustainability

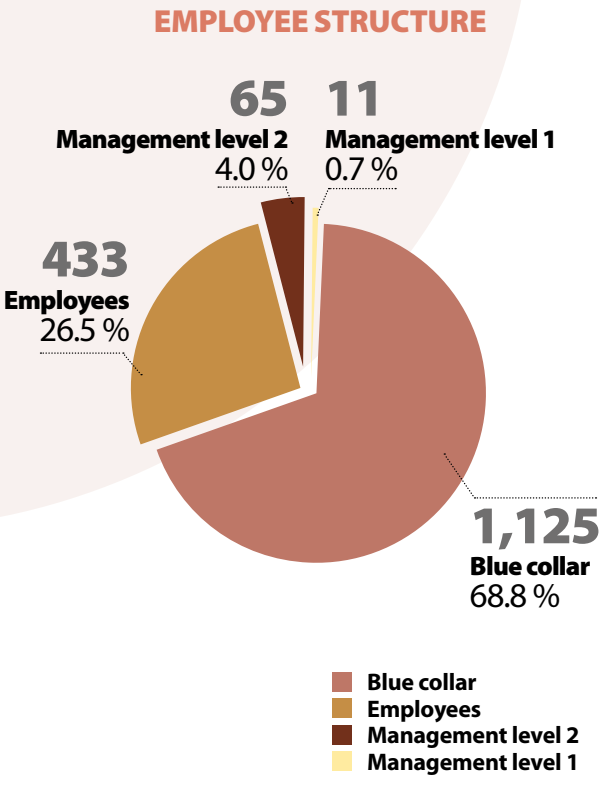
# 4.1 Employees

As of December 31, 2021, KME Osnabrück had 1,634 employees, of which 967 worked in KME Germany and 667 in KME Special Products and Solutions.
During the last year 35 new employees (including apprentices) were hired.
Employees turnover affected 62 people.

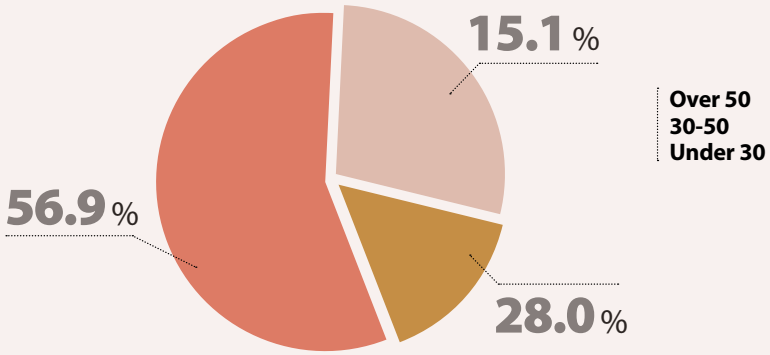



Regarding the contract, 1,482 employees are permanent and 152 are fixed-term.
1,546 employees are full-time, 88 are part-time.
The company's social benefits are the same for all employees, whether full-time or part-time. Among other things, the companies have a company pension scheme, an occupational health service, support for canteen meals, preventive health measures, etc.



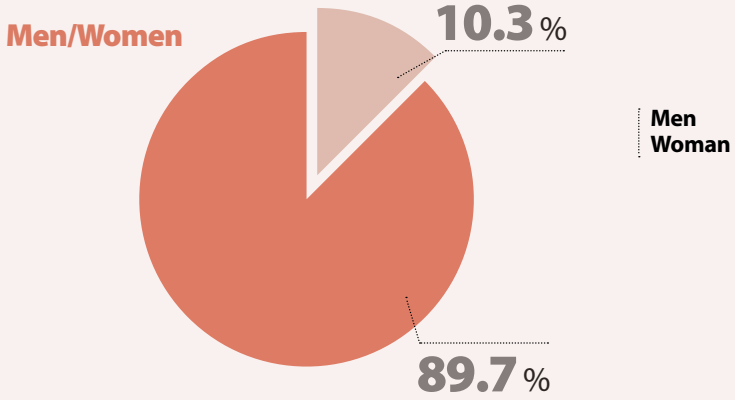



**Age groups**
- **247 employees** (15.1%) are under 30;
- **458 employees** (28%) are between the ages of 30 and 50;
- **929 employees** (56.9%) are over 50.




## 4.2 Equal opportunities

**1,466** men (89.7%) and **168** women (10.3%) work at the factory.




Of 65 second level managers, 7 are women (10.8%). Among the 433 employees there are 142 women (32.8%). Among the 1,125 blue collar, there are 19 women (1.7%). In first level managers there are no women.

No incidents of discrimination were detected or reported during the period examined.
According to the metal industry collective labor agreement, there is no difference in payment between men and women. Within the pay group, the basic salary is the same for all employees, regardless of gender.

During the last year 43 employees (28 men and 15 women) took parental leave, as provided for by law and the collective labor agreement.

# 4.3 Health and safety

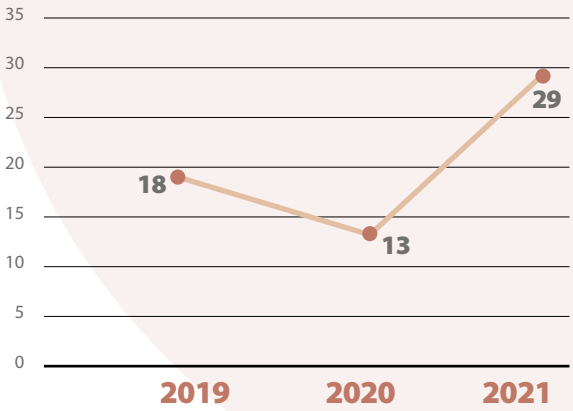
Worker health and safety are key priorities. The main goal is to prevent accidents, work-related illnesses and inappropriate physical and mental exertion.
The occupational health and safety management system is certified according to ISO 45001.
KME Germany and KME Specials are subject to the rules of the German Occupational Health and Safety Act (ArbSchG).
Several times during the year, the occupational safety committee meeting with the management, works council, production managers, employee representatives, occupational physician and safety officers takes place. There is a company medical service with daily consultation hours on site. There are regular health examinations for employees. There are pre-employment examinations for new employees, including verification of health fitness for work.

## Accidents

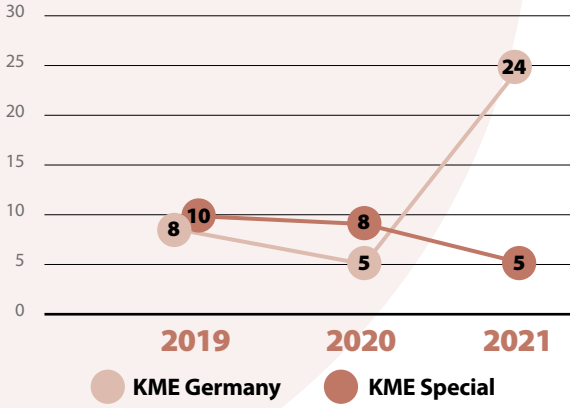
There were 29 relevant accidents (*absence > 1 day*) in the plant during 2021, of which 24 in KME Germany GmbH and 5 in KME Special Products. All the accidents involved male workers.

| Accidents | 2019 | 2020 | 2021 |
|---|---|---|---|
| **KME Germany** | 8 | 5 | 24 |
| **KME Special Product** | 10 | 8 | 5 |
| **TOTAL** | 18 | 13 | 29 |

**TOTAL ACCIDENTS**
(absence > 1 day)




**ACCIDENTS**
(absence > 1 day)




In 2021 the plant recorded:

- an **Injury Rate** (*Injury Rate, according to Occupational Safety and Health Administration (OSHA)*) number of injuries with absence greater than 1 day/number of hours worked x 200,000) of 3.85 in KME Germany (+441%) and of 1.18 in KME Special products (-43%).

- a **Gravity Index** (days of absence due to injury/ number of hours worked x 1,000) of 0.51 in KME Germany and of 0.40 in KME Special Products.

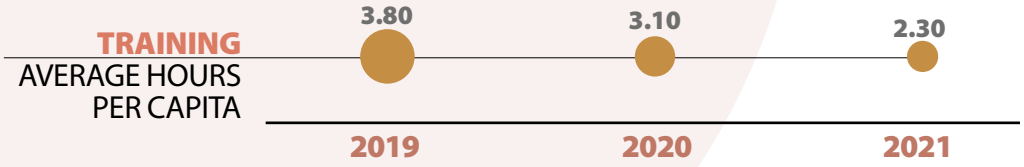
- an **Occupational Diseases Rate** of zero.

| Injury rate | 2019 | 2020 | 2021 |
|---|---|---|---|
| **KME Germany** | 1.76 | 0.71 | 3.85 |
| **KME Special** | 2.72 | 2.08 | 1.18 |

## 4.4 Training

In 2021, hours dedicated to training averaged 2.30 per employee. In more detail:
- **Men**: 2.40 hours per head
- **Women**: 1.10 hours per head
- **Blue collar**: 2.70 hours per head
- **White collar**: 1.20 per head

Training activities are specifically aimed at growing professional skills and safety at the workplace.
Two training activities are highlighted: High Potentials development program and OPEX-methods-training program




## 4.5 Suppliers

The company's procurement model is based on transparent processes and precise criteria, at accordance with the KME Group's compliance regulations, to ensure ethical and legal standards.

# **Sustainability** of business processes

KME is committed to pursuing a sustainable strategy in the organization of its business processes, in particular with regard to:
- Transparent customer orientation during product and process design;
- Observance of a corporate code of conduct;
- A healthy and safe working environment for employees and contractors;
- Continuous risk assessment;
- Adherence to current regulations;
- Implementation of best available techniques and procedures for continuous process improvement;
- Developing preventive strategies to reduce environmental impacts;
- Efficient use of materials and energy in the manufacture and supply of products;
- Manufacture of products with safety, energy efficiency and recyclability requirements.

We obtain all materials exclusively from well-known suppliers who have confirmed compliance with the Dodd-Frank Wall Street Reform and the Consumer Protection Act (Wall Street Reform Act). To this end, we conduct surveys on the origin of the materials at regular intervals.

Since all of the declarations made by KME are based on statements from material suppliers, we cannot guaranty the liability for this. We are currently participating in the initative MARS - Metal Alliance for Responsible Sourcing project.

- **Economic value of supplies of goods and services**
  *(net of metal and taxes)*
  € **105,452,268**
  (+28.7% compared to 2020)

- **Suppliers** *(net of metal)*
  € **2,131**
  (+5% compared to 2020)

  of which
  **371 *regional suppliers***
  *(Lower Saxony)*

- **Economic value of supplies**
  *(excl. metal and taxes)* **by area of origin**

  **Local** (Lower Saxony)
  € **16,737,821**
  (+24.3% compared to 2020)

  **Rest of Germany**
  € **81,719,950**
  (+33%)

  **Other E.U. countries**
  € **2,969,126**
  (+30.7%)

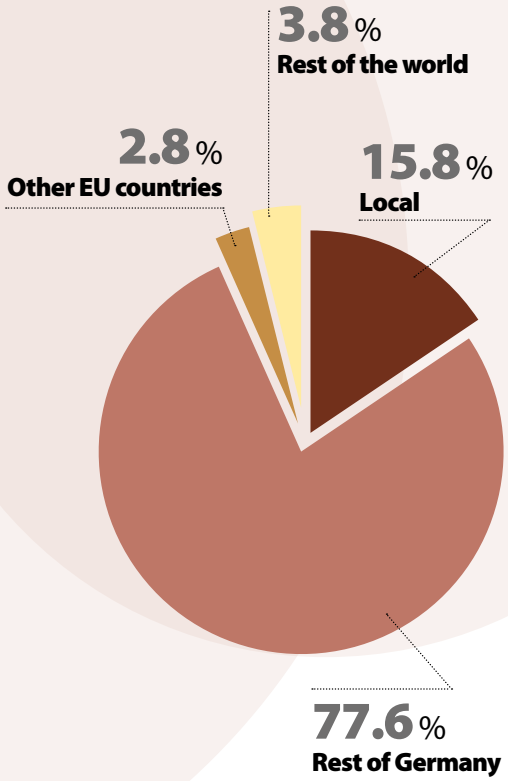
  **Rest of the world**
  € **4,025,370**
  (-15.6%)

- **Total economic value of supplies of goods and services including metals**
  *(excl. taxes)*
  € **881,049,268**
  (+36% compared to 2020)

Number of suppliers assessed for environmental impacts

| | |
|---|---|
| 2019 | 27 |
| 2020 | 30 |
| 2021 | 28 |

**SUPPLIES**
*(EXCL. METALS)*
BY AREA OF ORIGIN




# 4.6 Relations with local community

The companies promote social and cultural activities in favour of the local community and other external initiatives. The following initiatives implemented during the last years are highlighted:

- Offer of apprentice education for refuges and support for school leavers with learning difficulties
- Implementation of "Future Day" for pupils in years 5-8
- Initiative "Pro Ausbildung", e.g. "RoboTec" school competitions
- Support for initiative "Generations Workshop" of the Cause Foundation -Fostering Good Causes
- Refurbishment of the David star at the "Old Synagogue" memorial by KME trainees
- Production and donation of a Felix Nussbaum bronze memorial plaque to the Felix Nussbaum Society
- Cooperation with local colleges and universities (Bachelor's and Master's theses)
- Joint project with the city of Osnabrück on Strengthening cycling in the "Gartlage" redevelopment area, sub-project on commuters
- Participation in charity events, e.g. Osnabrück company run to support the campaign "Jede Oma zählt"; HelpAge Deutschland e.V.
- Public lunch offered by the KME company canteen
- Inclusion / participation in economic life for severely disabled people
- participation in Oasi Dynamo Societa Agricola s.r.l.
- Research project with the German Research Institute for Artificial Intelligence (DFKI). Winning the "Future Festival" award from the state of Lower Saxony
- Support of the Osnabrücker Tafel e.V. e.g. through the renovation of the entrance gate
- Partnership or participation in the 75th anniversary of Lower Saxony

# 5 Economic sustainability

**TURNOVER**

**933.8 million**
**euro**

**TURNOVER** NET OF RAW MATERIALS

**130.5 million**
**euro**

**SALES**

**120,662**
**tons**

Economic, financial and balance sheet data are published in the accounting documents and financial statements, which are drawn up in accordance with the law. Please refer to these for all detailed information. The sustainability report merely highlights some essential data and some information that is particularly relevant from the point of view of social sustainability, including the economic value provided to employees and the public administration. Particular attention is also paid to investments related to ecological transition and safety at work.

## 5.1 Results


### KME Germany

In 2021 turnover amounted to 933.8 million euro.

Turnover net of the cost of raw materials* was 130.5 million euro.

**This is particularly significant as it allows us to measure company performance without the effect of raw material price variability.*

The economic value paid to employees as direct remuneration was 64.7 million euro.

The economic value paid to the public administration (direct and indirect taxes) was 44.5 million euro.

### KME Special

In 2021 turnover amounted to 327.6 million of euro.

Turnover net of the cost of raw materials was 128.7 million of euro.

The economic value paid to employees as direct remuneration was 41.1 million of euro.

The economic value paid to the public administration (direct and indirect taxes) was 6.8 million of euro.

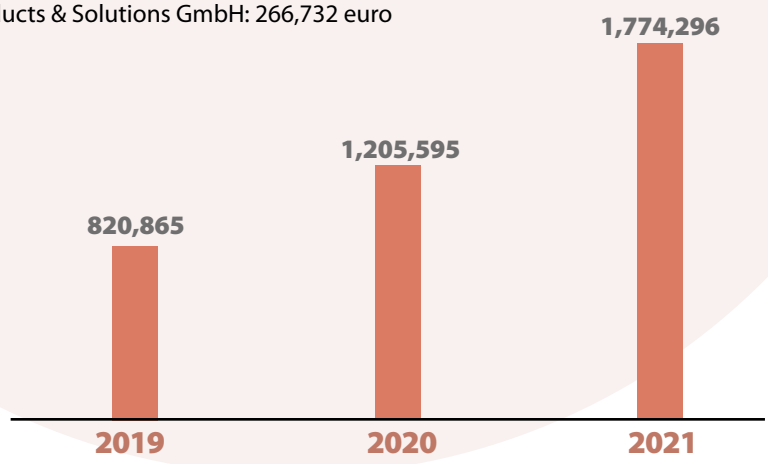
# 5.2 Investments

The value of investments by KME Germany GmbH in 2021 was 4,434,000 euro. These were the main ones:

- LTA S400-2 - 2,000,000 euro
- Extraction filter Hot Rolling Mill - 800,000 euro
- Substitution of telephone equipment - 170,000 euro
- New procurement of a G-format mould - 115,000 euro
- BAGA 2: converter for a melting furnace - 90,000 euro

The economic value of investments aimed at **environmental protection** and **health and safety** was in 2021 overall **1,774,296 euro**, of which:
- KME Germany GmbH: 1,507,564 euro
- KME Special Products & Solutions GmbH: 266,732 euro

**ENVIRONMENT AND SAFETY INVESTMENTS** (euro)




**INVESTMENTS** (euro)

| | KME Germany | KME Special | Total plant |
|---|---|---|---|
| Water protection/waste water | 72,315.00 | 7,753.00 | 80,068.00 |
| Noise protection | 829,047.00 | - | 829,047.00 |
| Occupational health and safety | 284,753.00 | 242,817.00 | 527,570.00 |
| Fire protection | 72,672.00 | 13,410.00 | 86,082.00 |
| Air emissions | 34,076.00 | 2,752.00 | 36,828.00 |
| Energy efficiency | 214,701.00 | - | 214,701.00 |
| **TOTAL** | **1,507,564.00** | **266,732.00** | **1,774,296.00** |

# 5.3 Research and development

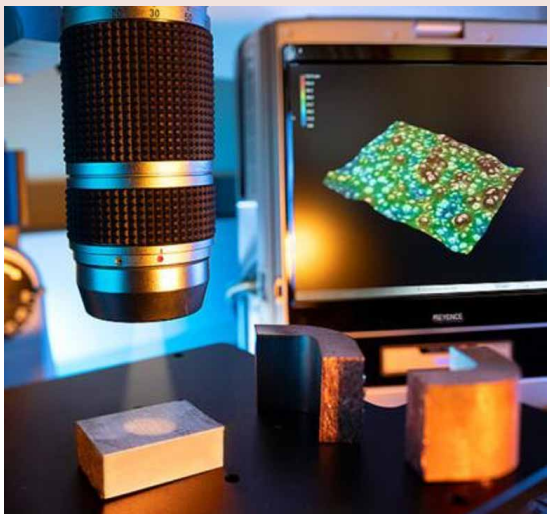
Resolute market and customer orientation promotes visions and growth. In order to ensure Innovation, Efficiency and Quality as core values of KME, Research & Development takes utmost priority.

- Treatment & recycling of materials
- Metallurgy & casting technology
- Production technology
- Numerical simulation
- Material science
- Surface technology
- Material testing & Application engineering
- Process development
- 3D-Printing Processing


## Research and development activities in **KME Group**

Research and development activities are of fundamental importance to KME in order to guarantee innovation, efficiency and quality. Research is focused in particular on developing innovative materials, but also on innovating production processes and applications of copper and copper alloy products. With 49 registered patents and 64 trademarks, research and development activities have top priority for KME.

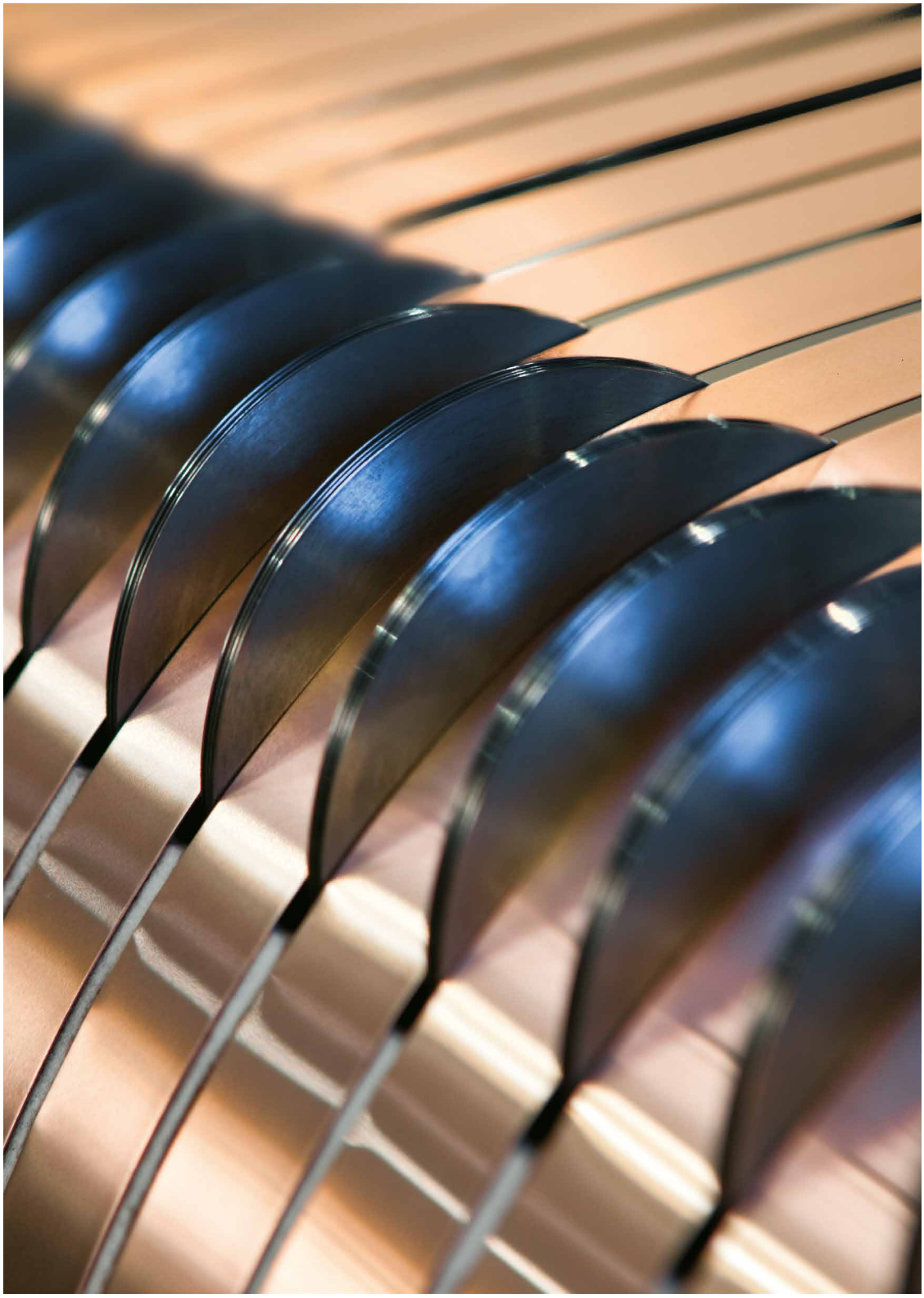
KME's laboratories are equipped and certified in accordance with ISO 9001:2015 and IATF 16949:2016. It is here that qualified teams of scientists and engineers address the issues concerning the added value of copper, from the raw material to the realization of alloys up to semi-finished copper products and finished products. In the test benches it is possible to carry out the realization of alloys and casting techniques with in-depth scientific expertise. Experimental and test castings provide fast and effective results. It is possible to carry out all the necessary tests and analyses: material analysis, corrosion research, material tests (to determine mechanical and physical properties), chemical analysis.



A team of researchers and developers is working on:

- material treatment and recycling (tin and copper scrap separation);
- metallurgy and casting technology (improvement of conductivity and corrosion resistance);
- manufacturing technology (energy efficiency and process redesign);
- numerical simulation (design simulation and geometric design based on customer's
- manufacturing process);
- materials science (basic research and development on replacement trends and application of
- materials such as 3D metal design);
- surface technology (coating improvements for extreme temperature conditions and high casting
- speed);
- material testing (100% traceability and continuous quality improvement);
- applications engineering (research of new application fields for copper and brass alloys);
- industry 4.0 and digital development;
- 3D printing for copper parts.

# 6 Circularity indicators




The European Union's **Action Plan for the Circular Economy aims** to change production and consumption systems, for both environmental and economic purposes. The main objective is to increasingly improve **efficiency in the use of resources** - through changes in the design of goods, production processes, technologies, the life cycle of products, waste management - to build environmentally sustainable development, while promoting economic competitiveness and employment.
In this context, KME Germany GmbH and KME Special Products & Solutions GmbH aim to help accelerate the transition to a circular economy through the efficient use of materials and energy.

# How to measure **"circularity"**

Accelerating the transition from linear economic models to a circular economy requires that every company be fully aware of its own positioning. Companies need to be able to measure their circularity performance at each stage of their production process and along the entire value chain, from design to procurement, from production to sales, from logistics to maintenance, to end-of-life management of products.

To this end, increasingly sophisticated tools for the detection and analysis of the main indicators of circularity are starting to spread, with the aim of providing companies not only with analytical tools, but also with information and solutions to improve the efficiency in the use of resources and the circularity of the production cycle.

How to measure "circularity"? To date, there are still no standardized and shared criteria and parameters. There are some examples of methods developed in recent years at the international level, but a standardized monitoring methodology is still being defined by the European Union, with reference to the "Action Plan for the Circular Economy".

Using the methodology developed by Greening Marketing Italia, a number of circularity indicators relating to KME Osnabrück activities are reported in the sustainability report. In this way, the company, which is already strongly committed to the circular economy, intends to set out on a path of even more careful evaluation of its efficiency in the use of resources and to monitor progress year after year.

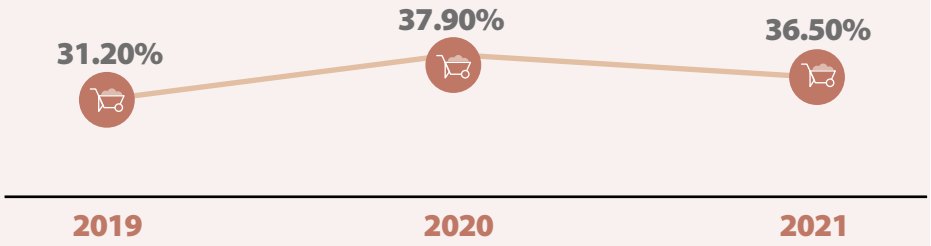
**Circularity rate**
A first important indicator is the **circularity rate**, i.e. the percentage of recycled materials compared to the total materials used.

**Recycled materials** (mostly copper scrap, together with wooden packaging) are **36.5%** of total materials used in 2021.

# CIRCULARITY **INDICATORS**

## **RECYCLED MATERIALS** (%)

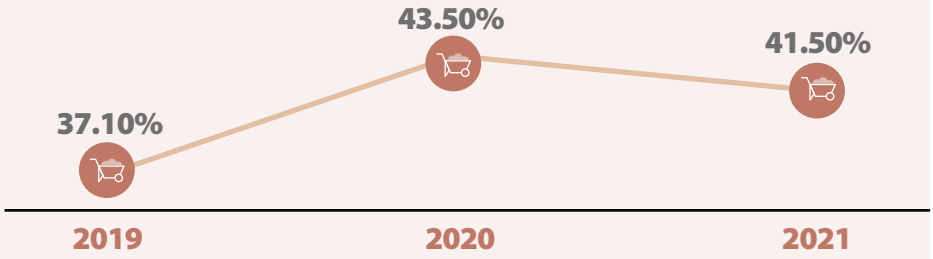
**36.5** %
OF THE MATERIALS USED COME FROM RECYCLING




Calculating the percentage of metals coming from recycling in relation to the metals used, the rate of circularity is **41.5 %.**

## **RECYCLED METALS** (%)

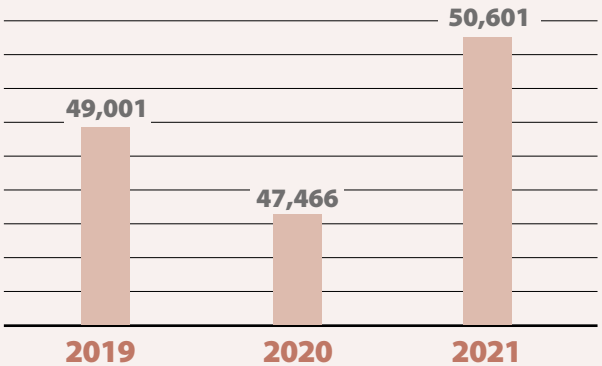
**41.5** %
OF THE METALS USED COME FROM RECYCLING




But the circularity rate does not end with these numbers. Adding to the use of recycled materials outside the plant is the fact that **within the plant's production process** a high amount of materials (50,601 tons in 2021) is recycled and **returned to the production cycle**. This further increases the efficiency rate in the use of materials and reduces the consumption of raw materials.
Overall, compared to the total metals processed within the plant, the share of **metals from external recycling and internal reuse in 2021** is **59.2%** ( 56.2% in 2019 and 60.5% in 2020).

## **INTERNAL RECYCLING** (tons)

THANKS TO INTERNAL RECYCLING THE RATE OF CIRCULARITY OF PROCESSED METALS INCREASES TO **59.2** %

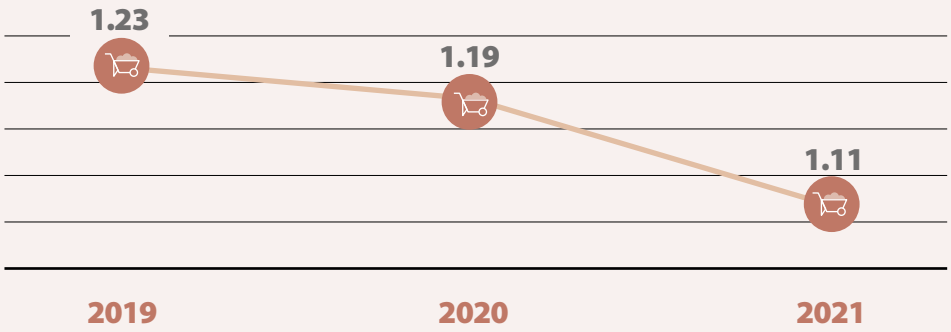


### Resource productivity

In order to measure the efficiency in the use of resources, an important indicator is the ratio between the amount of materials used and the production output from the plant. In 2021 it is equal to 1.11 tons/ton , with an important improvement compared to previous years.

**MATERIAL USED PER UNIT OF PRODUCT** (tons/ton)

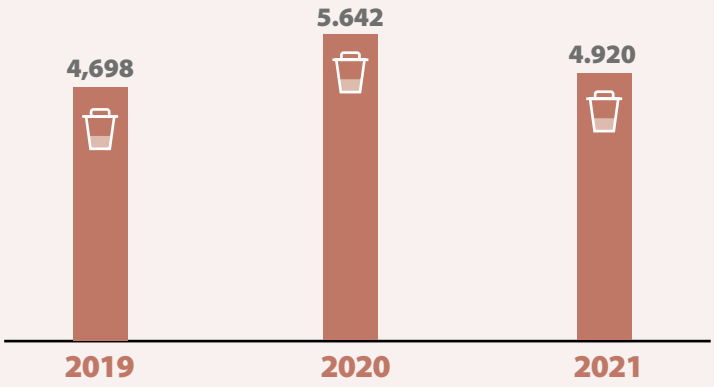
RESOURCE PRODUCTIVITY INCREASED BY **10** % IN LAST THREE YEARS




### Waste reduction

A circular economic model requires a progressive reduction of waste and an increase in material recovery, both within the production cycle and downstream of production.
Waste generation is lower compared to 2020.

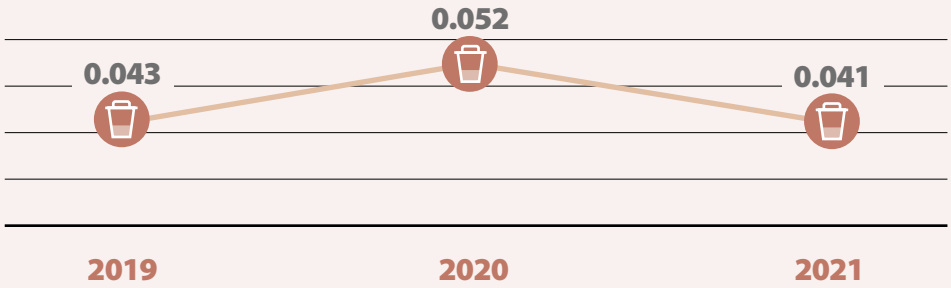
**WASTE** (tons)




Equally significant is the figure for the **amount of waste per unit of product**: 0.041 tons of waste was generated per unit of product in 2021.

WASTE GENERATION PER UNIT OF PRODUCT IN 2021 REDUCED BY **21.1** % COMPARED TO PREVIOUS YEAR

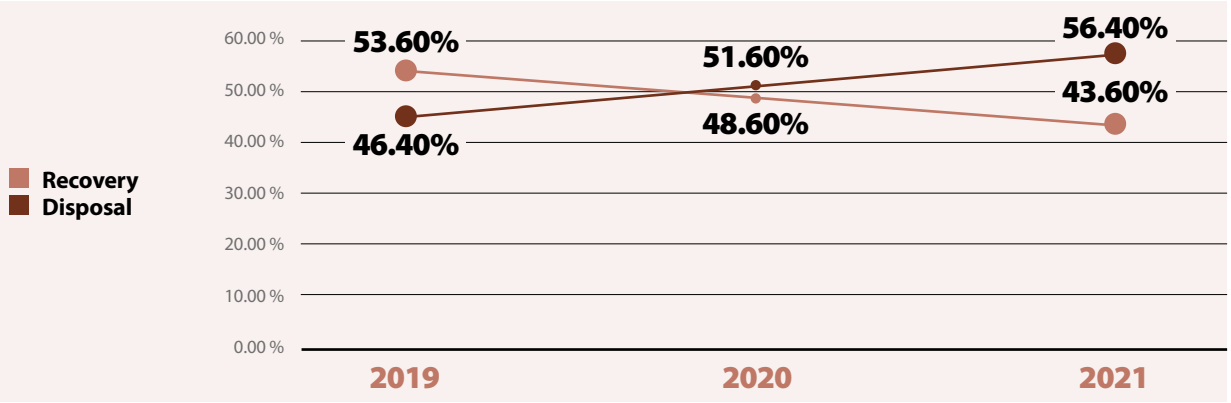
**WASTE PER UNIT OF PRODUCT** (tons/ton)



# CIRCULARITY **INDICATORS**

Another relevant indicator is the percentage of waste sent for **recovery** instead of disposal. In 2021 it was **43.6%**, in reduction compared to the previous years.

## WASTE MANAGEMENT

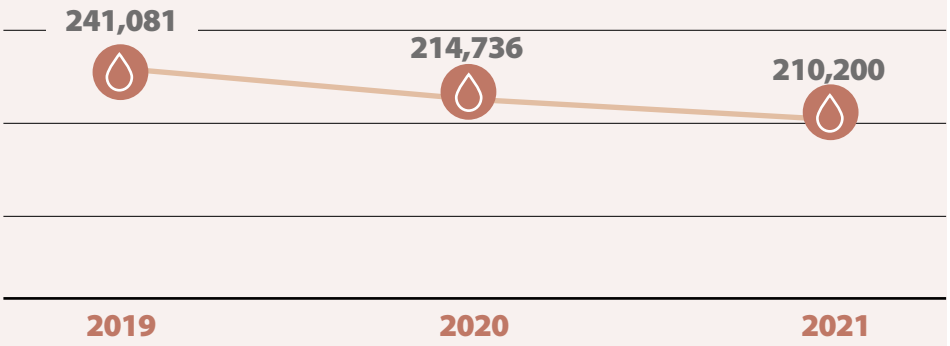



**Efficient use of water resources**
Even water, in a circular economy scenario, should be used as efficiently as possible, reducing consumption and increasing reuse within production cycles.

The data show an improvement from 260,447 $m^3$ of water withdrawn in 2019 to 232,830 $m^3$ in 2020 and to 232,903 $m^3$ in 2021. Water consumption reduced by 12.8% in last three years.

## WATER CONSUMPTION ($m^3$)

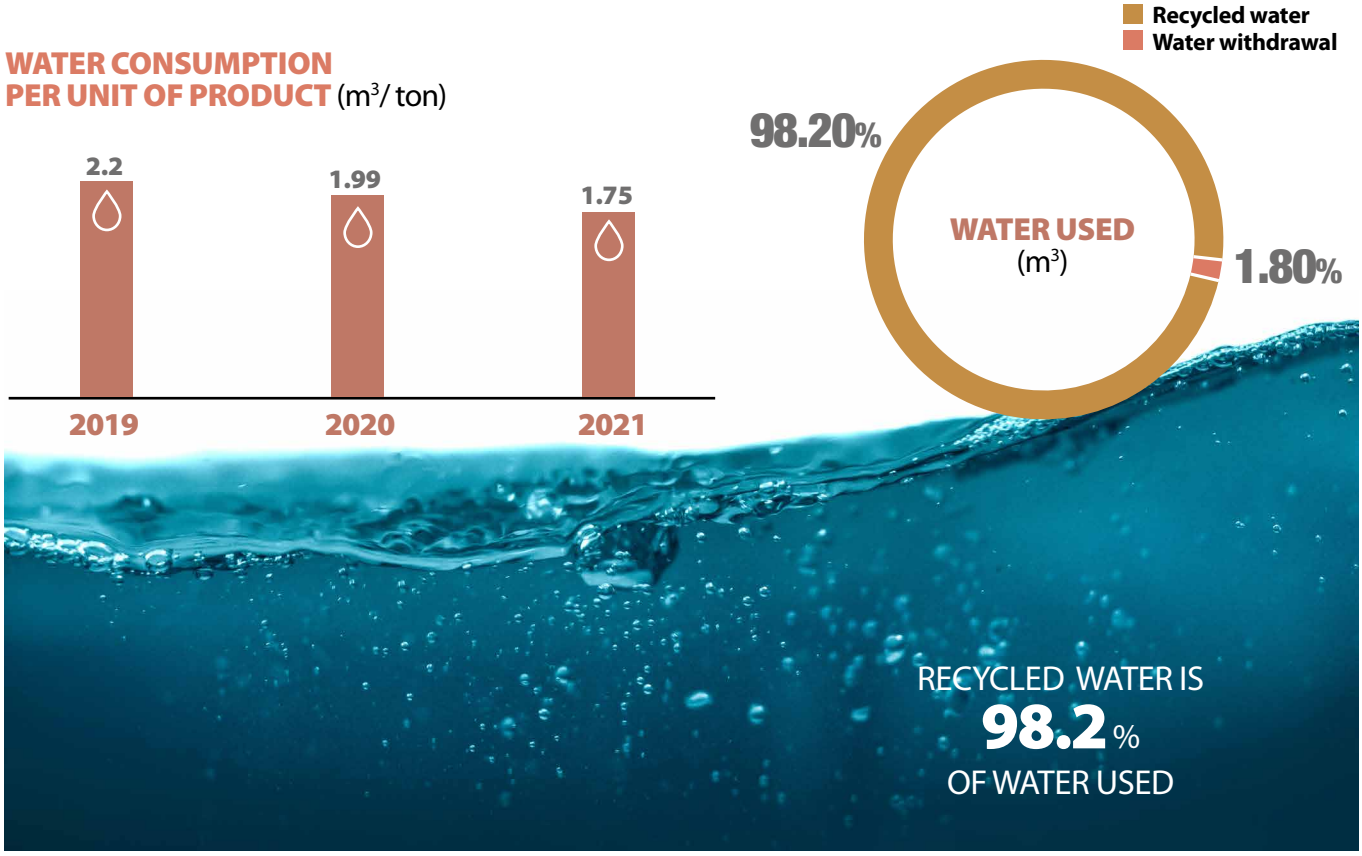
WATER CONSUMPTION REDUCED BY **12.8%** IN THE LAST THREE YEARS




The plant also uses a water recycling system that processed 12,602,714 m³ in 2020, thus significantly reducing the volume of water withdrawal required. Again, this is a principle of circular economy applied to an element, water, whose importance, also due to climate change, has grown and will grow in the future.

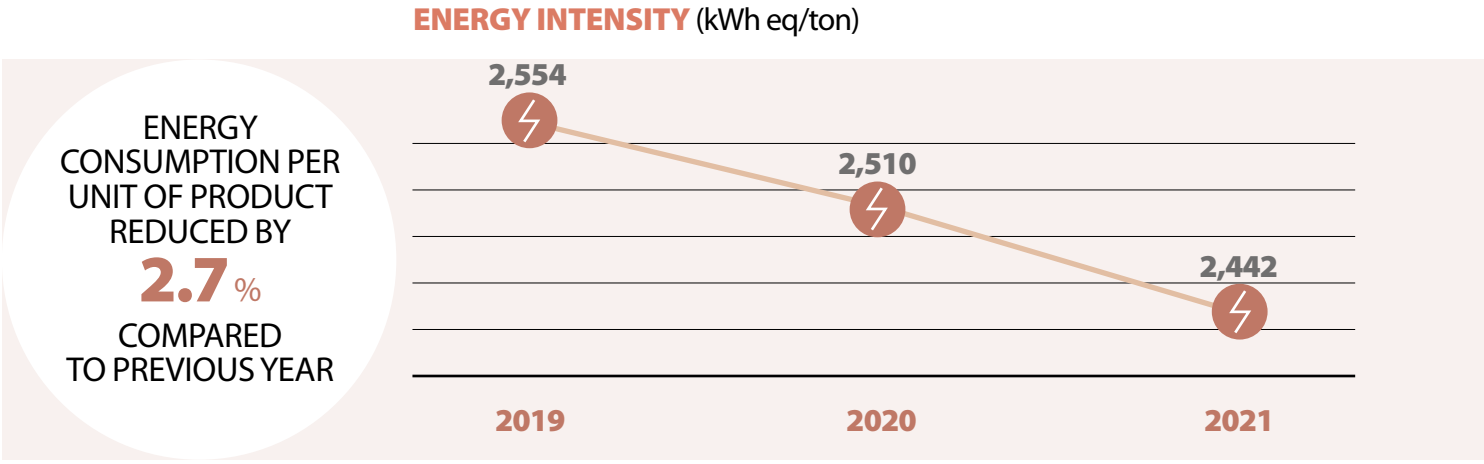
Recycled water is **98.2**% of water used.

For every ton of product **1.75** m³ of water were consumed in 2021.




### Energy efficiency

In a circular economy model, energy, like matter, must be used as efficiently as possible. All the more so in energy-intensive facilities such as metalworking plants. As mentioned in another chapter, the factory has already taken important steps to improve energy efficiency. In terms of **specific consumption per unit of product**, 2,442 kWh eq. was consumed per ton of product, a reduction of 2.7% compared to the previous year.



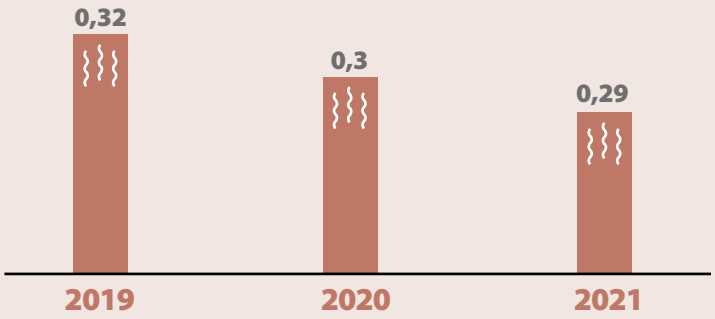
# CIRCULARITY **INDICATORS**

### Reducing greenhouse gas emissions

The increase in efficiency in the use of natural resources and the transition towards a circular economy model are closely related to the need to reduce greenhouse gas emissions in order to combat global warming. This is therefore also among the main objectives that a company must pursue on the path towards circularity.

The data show an improvement over the period examined. Specific total emissions (direct and indirect), as measured in relation to output, were also down by 9.4% compared to the previous year and 15.8% compared to 2019.

## **DIRECT EMISSIONS PER UNIT OF PRODUCT** (tons $CO_2$ eq/ton)




# 7 Appendix

# 7.1 Methodological note

The sustainability report was prepared in accordance with the Global Reporting Initiative GRI-G4 guidelines. GRI promotes the use of sustainability reporting as a tool to enable businesses and organizations to contribute to the sustainability of the global economy.
The report was prepared with the consultancy of Greening Marketing Italia (GMI).

## Reporting period

The reporting period for this sustainability report is January 1 through December 31, 2021.
The report contains not only 2021 data but also data from the previous two years (2019 and 2020) in order to provide a more complete picture of the ongoing trends in the company's performance.

## Principles of defining report content

**Materiality:** the information contained in the report and its level of detail take into account all significant impacts (economic, environmental and social) and all aspects that could substantially influence stakeholders' assessments and decisions.

**Stakeholder inclusiveness:** the report addresses all stakeholders, internal and external, who are involved or may be affected by the activities of the facility and the companies.

**Sustainability context:** the report describes the company's performance with respect to the objectives of sustainable development, taking into account both significant global impacts (such as climate change) and the specific characteristics of the territorial context in which the significant impacts of the industrial activity occur.

**Completeness:** the report describes the environmental, economic and social performance of the company using a system of indicators that describes all the main impacts of the activities carried out, and highlighting their evolution in the reference period.

## Principles of relationship quality assurance

**Balance:** the report describes both the positive and negative aspects of the company's environmental, social and economic performance, providing qualitative information and quantitative data that allow the reader to make an independent and balanced judgement.

**Comparability:** the indicators developed in the report follow the methodologies indicated in the GRI guidelines, thus making it possible to compare the company's performance with that of other industries, as well as to assess its evolution over the reporting period.

**Accuracy:** each indicator developed in the report is developed according to a consistent pattern, reporting numerical data in tables, accompanying them by explanatory graphical representations and illustrating with a synthetic text the main evidence found. Tables and graphs indicate the units of measurement used.

**Clarity:** the report is drafted using language that is as simple as possible, avoiding overly detailed technical information. The structuring of the index and the table of correspondence with the GRI index help stakeholders identify issues of specific interest to them in the report. Graphics facilitate understanding of the data.

**Verifiability:** information is provided in such a way that it can be verified over the years and possibly become the subject of external scrutiny.

## Production data

The figure relating to the production is to be understood as the quantity of products leaving the plant (sales) during the year, while the figure relating to materials used refers to the quantity of materials entering (input) in the same period.

# 7.2 GRI Correspondence table

| GRI INDICATOR | DESCRIPTION | CHAPTER - PARAGRAPH* |
|---|---|---|
| **PROFILE** | | |
| | *Organization profile* | |
| 102 – 1 | Name of organization | 2 |
| 102 – 2 | Activities, brands, products and services | 2.2 |
| 102 – 3 | Location of management offices | 2.2 |
| 102– 4 | Location of existing activities | 2.2 |
| 102 – 5 | Ownership and legal status | 2 |
| 102 – 7 | Order of magnitude of the organization | 2 |
| 102 – 8 | Information on employees and other workers | 4.1 |
| 102 – 9 | Supply chain | 4.5 |
| 102 – 10 | Significant changes in relations between the entity and its supply chain | |
| 102 – 11 | Precautionary Principle | 2.4 - 3.1 |
| 102 – 12 | External initiatives | 4.6 |
| 102 – 13 | Membership in associations | |
| | *Strategy* | |
| 102 – 14 | Declaration of top decision makers | Letter to Stakeholders |
| 102 – 15 | Main effects, risks and opportunities | |
| 102 – 16 | Values, principles, standards and rules of conduct | 2.4 |
| 102 – 17 | Ethics Advisory Mechanisms | |
| 102 – 18 | Governance Structure | 2.3 |
| 102 – 19 | Delegating process | 2.3 |
| 102 – 20 | Executive level for economic, environmental and social topics | 2.3 |
| 102 – 21 | Consultation with stakeholders on economic, environmental and social topics | Report guidance |
| 102 – 22 | Composition of governance at the highest levels | 2.3 |
| 102 – 23 | Chairing the highest level of governance | 2.3 |
| 102 – 24 | Apex nomination and selection | 2.3 |
| 102 – 25 | Conflict of interest mechanisms | 2.4 |
| 102 – 26 | Role of senior governance figures in setting values and intentions | 2.3 |
| 102 – 27 | Cognition of senior governance figures on individual topics | |
| 102 – 28 | Assessing the performance of senior governance | |
| 102 – 29 | Identification and management of economic, environmental and social impacts | |
| 102 – 30 | Effectiveness of risk management processes | 2.3 |
| 102 – 31 | Monitoring of economic, environmental and social topics | 2.3 |
| 102 – 32 | Role of senior governance on the sustainability report | 2.3 |

| GRI INDICATOR | DESCRIPTION | CHAPTER - PARAGRAPH |
|---|---|---|
| 102 – 33 | Communication of critical issues | 2.3 |
| 102 – 34 | Nature and number of critical aspects | |
| 102 – 35 | Remuneration policies | 4.1 |
| 102 – 36 | Compensation Determination Process | As per national collective agreement |
| 102 – 37 | Level of stakeholder involvement in the remuneration process | |
| 102 – 38 | Annual total compensation ratio | |
| 102 – 39 | Percentage increase in compensation ratio | |
| 102 – 40 | List of stakeholders involved | |
| 102 – 41 | Collective bargaining agreements | 4.1 |
| 102 – 42 | Identification and selection of stakeholders | Report guidance |
| 102 – 43 | Approach to stakeholder engagement | Presentation |
| 102 – 44 | Key themes | Report guidance |
| | ***Reporting*** | |
| 102 – 45 | Entities included in the financial statements | 5.1 |
| 102 – 46 | Defining report content and topic boundaries | |
| 102 – 47 | List of topics materials | |
| 102 – 48 | Information review | |
| 102 – 49 | Changes in reporting | |
| 102 – 50 | Reference period | 2021 |
| 102 – 51 | Date of most recent report | 2020 |
| 102 – 52 | Reporting cycle | Annual |
| | ***Management approach*** | |
| 103 – 1 | Explanation of the topic and its boundaries | |
| 103 – 2 | Reporting requirements | |

| ECONOMIC PERFORMANCE | | |
|---|---|---|
| 201 – 1 | Direct economic value generated and distributed | 5.1 |
| 201 – 2 | Financial implications and other risks and opportunities due to climate change | |
| 201 – 3 | Significant financing received from the public administration. | |
| | ***Market presence*** | |
| 202 – 1 | Ratio of local minimum wage to average entry level wage | |
| 202 – 2 | Proportions of senior management hired from within the local community | |
| | ***Indirect economic impacts*** | |
| 203 – 1 | Investments in infrastructure and services | 4.6 - 5.2 |

| GRI INDICATOR | DESCRIPTION | CHAPTER - PARAGRAPH |
|---|---|---|
| 203 – 2 | Significant indirect economic impacts | |
| | ***Procurement practices*** | |
| 204 – 1 | Proportion of spending with local suppliers | 4.5 |
| | ***Anti-Corruption*** | |
| 205 – 1 | Operations planned for corruption risks | 2.4 |
| 205 – 2 | Communication and training on anti-corruption procedures | 2.4 |
| 205 – 3 | Evidence of corruption and responses | |
| | ***Conduct detrimental to competition*** | |
| 206 – 1 | Legal action for anti-competitive behavior, anti-trust and monopolistic practices | |

| ENVIRONMENTAL PERFORMANCE | | |
|---|---|---|
| | ***Materials*** | |
| 301 – 1 | Materials used, by weight or volume | 3.3 |
| 301 – 2 | Recycled materials used | 3.3 |
| 301 – 3 | Reused products and their packaging materials | 3.3 |
| | ***Energy*** | |
| 302 – 1 | Energy Consumption | 3.2 |
| 302 – 2 | Energy consumption outside the organization | |
| 302 – 3 | Energy Intensity | 3.2 |
| 302 – 4 | Reduced energy consumption | 3.2 |
| 302 – 5 | Reductions in energy requirements for products and services | 3.2 |
| | ***Water*** | |
| 303 – 1 | Water withdrawal | 3.7 |
| 303 – 2 | Water sources significantly affected by withdrawal | 3.7 |
| 303 – 3 | Recycled and reused water | 3.7 |
| | ***Biodiversity*** | |
| 304 – 1 | Operational sites owned, leased, managed in, or adjacent to protected areas | |
| 304 – 2 | Significant impacts of activities, products and services | |
| 304 – 3 | Protected or restored habitats | |
| 304 – 4 | Species on the IUCN red list | |
| | ***Emissions*** | |
| 305 – 1 | Direct greenhouse gas emissions (scope 1) | 3.5 |
| 305 – 2 | Indirect greenhouse gas emissions (scope 2) | 3.5 |

| GRI INDICATOR | DESCRIPTION | CHAPTER - PARAGRAPH |
|---|---|---|
| 305 – 3 | Other indirect greenhouse gas emissions (scope 3) | |
| 305 – 4 | Greenhouse gas emission intensity | 3.5 |
| 305 – 5 | Reduction of greenhouse gas emissions | 3.5 |
| 305 – 6 | Emissions of ozone-depleting substances | |
| 305 – 7 | Nitrogen oxides, sulfur oxides, and other significant air emissions | 3.6 |
| | ***Waste and discharge*** | |
| 306 – 1 | Final water discharge | 3.7 |
| 306 – 2 | Waste and disposal methodology | 3.4 |
| 306 – 3 | Spills | |
| 306 – 4 | Transportation of hazardous waste | |
| 306 – 5 | Water bodies affected by discharges and/or outflows | |
| | ***Environmental compliance*** | |
| 307 – 1 | Non-compliance with environmental laws and requirements | |
| | ***Supplier environmental assessment*** | |
| 308 – 1 | Reporting requirements | 4.5 |
| 308 – 2 | Negative environmental impacts in the supply chain | |

| SOCIAL PERFORMANCE | | |
|---|---|---|
| | ***Workers*** | |
| 401– 1 | Hiring new employees and employee turnover | 4.1 |
| 401– 2 | Benefits reserved exclusively for full-time employees | |
| 401– 3 | Parental leave | 4.2 |
| | ***Corporate labor relations*** | |
| 402– 1 | Minimum notice periods for operational changes | As per contract national collective of work |
| | ***Health and safety*** | |
| 403– 1 | Employee representation on joint management/employee health care committees | 4.3 |
| 403– 2 | Injury types and percentage of injuries, work-related illnesses, absences, and work-related deaths | 4.3 |
| 403– 3 | Workers with a high degree of injury or high risk of occupational disease | 4.3 |
| 403– 4 | Health and safety issues covered by formal agreements with labor organizations | As per contract National workforce |

| GRI INDICATOR | DESCRIPTION | CHAPTER - PARAGRAPH |
|---|---|---|
| | ***Training*** | |
| 404 – 1 | Average annual hours dedicated to training | 4.4 |
| 404 – 2 | Skills implementation and transition assistance programs. | |
| 404 – 3 | Percentage of performance and review | |
| | ***Equal opportunities*** | |
| 405 – 1 | Diversity of management bodies | 4.2 |
| 405 – 2 | Salary ratio man/woman | 4.2 |
| | ***Non-discrimination*** | |
| 406 – 1 | Incidents of discrimination and actions taken | |
| | ***Freedom of association and collective bargaining*** | |
| 407 – 1 | Transactions and suppliers where there are association risks | - |
| | ***Child labor*** | |
| 408 – 1 | Operations and suppliers subject to child labor risk | 2.4 |
| | ***Forced labor*** | |
| 409 – 1 | Operations and suppliers at risk for forced labor | 2.4 |
| | ***Security practices*** | |
| 410 – 1 | Security personnel trained in human rights | 2.4 |
| | ***Rights of indigenous peoples*** | |
| 411 – 1 | Incidents involving violations of indigenous peoples' rights | |
| | ***Human rights assessment*** | |
| 412 – 1 | Operations subject to human rights controls | 2.4 |
| 412 – 2 | Human rights policy training | 2.4 |
| 412 – 3 | Investment agreements for the protection of human rights | 2.4 |
| | ***Local communities*** | |
| 413 – 1 | Activities involving local communities | 4.6 |
| 413 – 2 | Operations with significant impacts on communities | 4.6 |
| | ***Social evaluation of suppliers*** | |
| 414 – 1 | New suppliers screened using social criteria | 4.5 |
| 414 – 2 | Negative social impacts in the supply chain | 4.5 |
| | ***Public policy*** | |
| 415 – 1 | Public contributions | |

| GRI INDICATOR | DESCRIPTION | CHAPTER - PARAGRAPH |
|---|---|---|
| | ***Consumer health and safety*** | |
| 416– 1 | Assessment of safety and health impacts | 2.5 |
| 416– 2 | Incidents of service and product non-compliance | |
| | ***Marketing and labeling*** | |
| 417– 1 | Product disclosure and labeling requirements | 2.5 |
| 417– 2 | Incidents related to non-compliance | |
| 417– 3 | Incidents related to failure to communicate | |
| | ***Consumer privacy*** | |
| 418– 1 | Reasoned complaints about invasion of privacy | |
| | ***Socioeconomic compliance*** | |
| 419– 1 | Failure to comply with laws in the socioeconomic area | |

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