Sustainability report

X

2020

KME
Mansfeld
GmbH

KME

Sustainability Report

2020

KME Mansfeld GmbH

Index

Worldwide, 2020 was a dramatic year, forcing even industries to drastically change their planned actions. KME has also suffered the consequences of the pandemic, but this has not affected the Sustainability Report's evolution.

In fact, the Sustainability Report is currently in its fourth year, further increasing the scope of activities examined. The first year with the KME Italy plant in Fornaci di Barga, the second with the service centers of Besançon in France and Barcelona in Spain, the third with the KME Mansfeld GmbH plant and finally in 2020 with the Osnabrück plant by KME Germany, both in Germany.

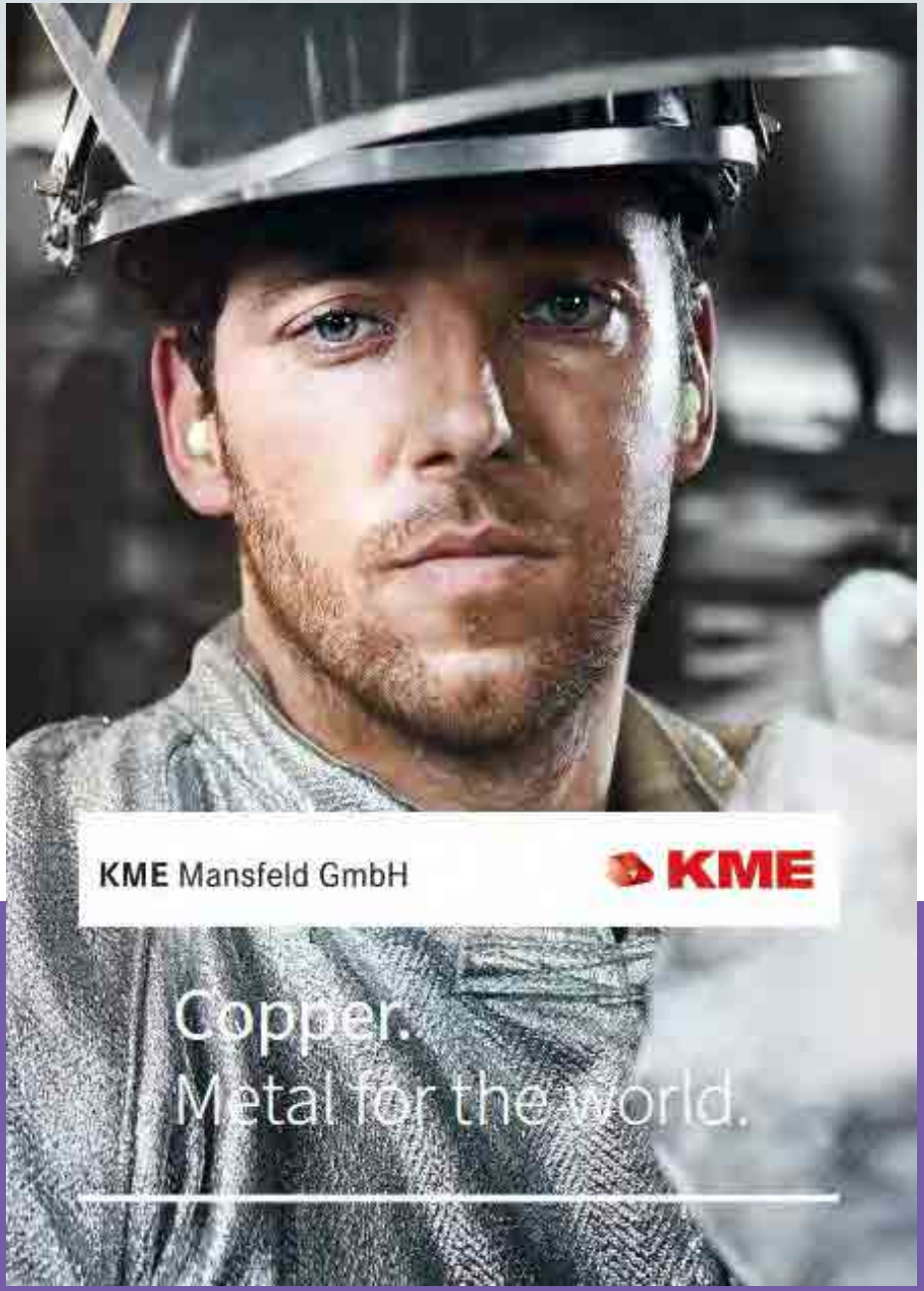
As already mentioned in previous editions, the decision to produce and publish this Sustainability Report, with the support of an independent company, is not a regulatory requirement for KME, but rather the expression of a precise and strategically oriented focus on the modern concepts of CSR, ESG and Circular Economy.

Presentation

Sustainability and economic, social and environmental responsibility are key factors in the industrial model pursued by KME. Hence, we pay attention to the expectations of all our stakeholders, with the consequent demand for transparent and exhaustive communication on our activities.
Excellence and innovation are not only principles applied to production, but also to the workers' well-being and that of the territory where the company operates.

The Sustainability Report 2020 that we present to all of you shows the further improvement of all the various aspects of our activity; a result achieved through the commitment of all our staff of which we should all be particularly proud.

Claudio Pinassi
Managing Director


KME Mansfeld GmbH
KME
Copper.
Metal for the world.

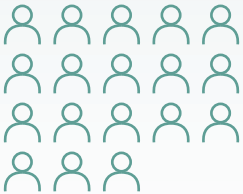
SALES

225,459

TONS

1,021,269,222 EURO

TURNOVER



1,134

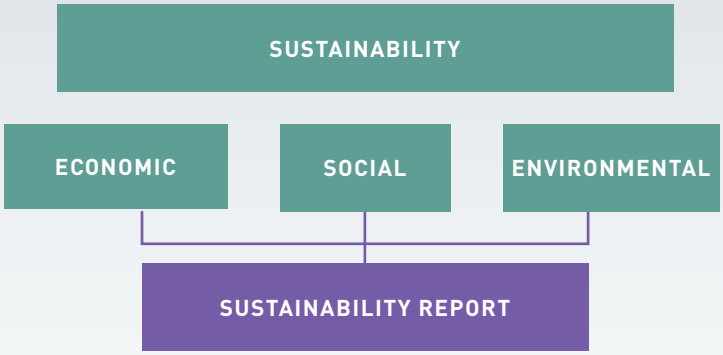
EMPLOYEES

KME

KME Mansfeld GmbH

Strategic value for the circular economy and the European Green Deal

An integrated system of the copper industry in Europe



KME Mansfeld presents its sustainability report as a voluntary act of **transparency and social responsibility**.

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:

- **general**, regarding the legal and organizational profile of the company;
- **economic**, concerning the main economic results and the added value distributed;
- **environmental**, in particular concerning energy, materials, water, waste, emissions;
- **social**, concerning personnel, training, safety, equal opportunities, human rights, relations with the local community.

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**.

Report guidance

The report also provides, through specific boxes, information that can contribute to the understanding of the context within which the company operates or to deepen some specific topics.

This sustainability report covers the year **2020**. Data for 2018 and 2019 are also reported to allow for an assessment of the performance of key indicators over the last three years.

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".*

KME

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2 HEALTH PROTECTION AND SAFETY

3 ENHANCEMENT OF HUMAN CAPITAL AND THE ROLE OF WORKERS

4 CONTRIBUTION TO THE DEVELOPMENT OF THE TERRITORY AND RELATIONS WITH THE LOCAL COMMUNITY

5 SUSTAINABLE SUPPLY CHAIN MANAGEMENT

6 EQUAL OPPORTUNITIES FOR MEN AND WOMEN

7 PROTECTION OF HUMAN RIGHTS

8 WASTE RECOVERY

9 EFFICIENT USE OF RAW MATERIALS / CIRCULAR ECONOMY

10 EFFICIENT WATER USE: SAVING WATER AND REDUCING LOSSES

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12 CLIMATE CHANGE: MITIGATION AND ADAPTATION ACTIONS

13 SAFEGUARDING BIODIVERSITY

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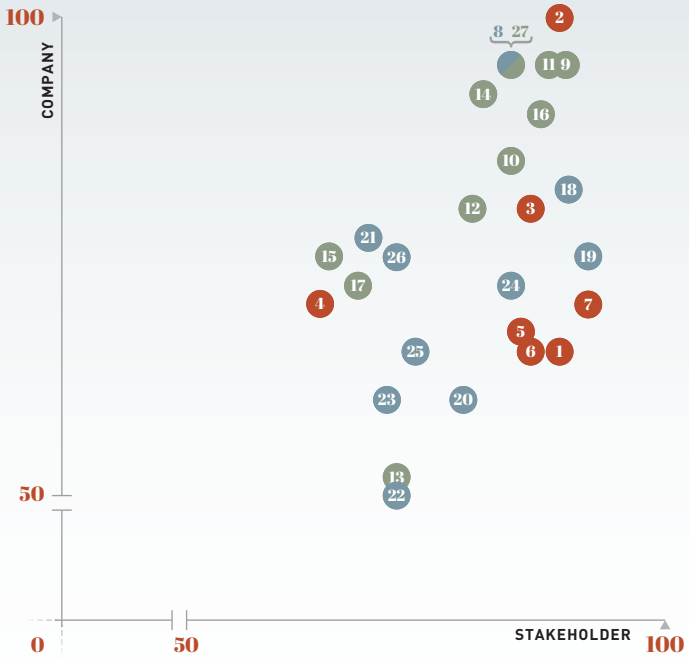

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SUSTAINABILITY GOALS

The company's activities and performance are also reported with reference to the **sustainability goals** of the UN's "Agenda 2030".

CONTEXT

The United Nations 2030 Agenda

In 2015, the United Nations approved the Global Agenda for Sustainable Development, which outlines 17 goals (*Sustainable Development Goals* - SDGs) to be achieved by 2030. The UN emphasizes the need for all countries to commit to directing global development towards sustainability. In order to achieve the goals, a strong commitment is required not only from States and institutions, but also from businesses and citizens.

DEEPENING

The sustainability report
Essential tool for companies in the ecological transition

What is a sustainability report? Let's quickly review its history.

The first forms of **social reporting** date back to the 1980s. They were created as a voluntary tool, with the aim of assessing the impact of company activities on the community. Then, in the 1990s, **environmental declarations** began to take shape, in order to report data on environmental impacts. Year after year, in the wake of a change that increasingly affects society and the business world, the reporting tools progressively expand their scope from social issues to the environmental dimension.

But an even more important turning point came in 2014, when the **European Directive on "non-**

financial reporting" made sustainability reporting a mandatory requirement for certain specific types of companies, including banks, insurance companies and listed companies. The purpose of the directive is to encourage companies to report transparently on their environmental and social performance - in addition to their economic performance - and at the same time to encourage the construction of management systems that increasingly integrate sustainability into business strategies.

Since then, **a growing number of companies** - in addition to those required by law - have voluntarily decided to present their own **sustainability report**. This is the sign of a profound change that is taking place in the world of economics and business culture.

Today we are faced with a **new important change**, destined to mark a further qualitative leap. The Sustainability Report takes on an even stronger value in the new European context. With the "**Next Generation EU" plan**, the European Union has put in place a strategy focused on ecological and digital transition. And among the actions envisaged by the European Union as part of the **Green Deal** there is also the **strengthening and extension of sustainability reporting**.

To this end, in April 2021, the Commission presented its proposal for a **new Sustainability Reporting Directive**. The proposal broadens the range of stakeholders, with a twofold objective: on the one hand to increase information on opportunities and risks related to sustainability, and on the other to support companies in their growth path in the context of the ecological transition. It is no coincidence that the new Directive is connected to the **EU regulation on taxonomy**, the first system in the world for classifying sustainable economic activities.

The **sustainability report** is therefore becoming an **increasingly important tool** for companies not only to communicate their results but also to support innovation processes and strengthen corporate strategies in the context of the **ecological transition**.

The new European directive on sustainability reporting

"I warmly welcome the European Commission's proposal on corporate sustainability reporting and believe it can finally address the major data gaps currently plaguing the EU sustainable finance landscape. By integrating sustainability with financial data, we will create a 'one-stop shop' for all information about a company, including its green credentials, which will also be immensely useful for investors".

Christine Lagarde
President of the European Central Bank

CONTEXT

ESG factors in credit assessment

ESG (*Environmental, Social and Governance*) factors are also becoming increasingly important in measuring the sustainability of investments and in credit assessment. In fact, the European Supervisory Authorities issued regulatory technical standards on February 2, 2021 that require banks to integrate climate and sustainability risks into their risk and strategy *frameworks* and to include specific policies related to ESG factors in the lending process.

CONTEXT

New rules for a sustainable economy

The European taxonomy regulation

On July 12, 2020, the **European Union's Taxonomy Regulation** came into force. A measure intended to help achieve the goals of the Green Deal.

This regulation establishes the **world's first classification system for sustainable economic activities**, which will make it possible to assess the environmental sustainability of investments.

The regulation establishes 6 **environmental objectives**. It provides for classifying an economic activity as environmentally sustainable if it contributes to at least one of the following objectives:

- climate change mitigation;
- adaptation to climate change;
- sustainable use and protection of water and marine resources;
- transition to a circular economy, including waste prevention and increased use of secondary raw materials;
- pollution prevention and reduction;
- protection and restoration of biodiversity and ecosystems.

To be considered environmentally sustainable, economic activities will need to:

- contribute substantially to the achievement of at least one of the six environmental goals;
- not cause significant harm to any of the environmental objectives;
- be carried out in compliance with minimum social safeguards;
- conform to the "technical screening criteria".

1
Building a sustainable future

1.1 Next Generation EU

The year 2020 was not a year like any other. The entire world has been devastated by the **pandemic**. The health emergency has caused millions of victims and a serious **economic and social crisis**, laying bare many aspects of fragility and vulnerability of our societies. You don't get out of an upheaval like this by simply going back to how it was before, putting what we experienced behind us. To ensure a better future for humanity, many things must change. And the first change needed is one that is summed up in the concept of **sustainable development**.

- **Environmentally** sustainable, because it is capable of preserving ecological balances and addressing the climate challenge.
- **Socially** sustainable, because it can reduce inequality and promote cohesion.
- **Economically** sustainable, thanks to companies driven by values of social and environmental responsibility that work not only to achieve the necessary economic and financial results, but also for the well-being of the community.

Focusing on sustainability means working to build the economy of the future: an economy that respects the environment and at the same time is capable of producing wealth and well-being for society.

The **UN 2030 Agenda for Sustainable Development** is the most important reference project for finding solutions to global problems, while the "**Next Generation EU**" Plan is the strategic axis for a sustainable development of Europe.

The construction of sustainable development depends on the choices made by governments and institutions, but also on the behaviour of businesses and citizens. KME is committed to this direction.

A GREEN DEAL TO LOOK TO THE FUTURE

Already at the end of 2019, even before the health emergency, the European Commission had launched the **Green Deal**, with the aim of making the climate challenge the opportunity for a new development model.

With the Green Deal, Europe wants to become the first carbon neutral continent - i.e. with "zero net emissions" of greenhouse gases - by 2050, through a socially just ecological transition and an industrial revolution capable of ensuring sustainable production.

When the Covid-19 pandemic broke out, the European Union took a further step in this direction. With the **Next Generation EU Plan**, it adopted an even more ambitious strategy, backed by an unprecedented financial commitment, to promote economic recovery by making green transition a strategic priority. In March 2020, the new **Circular Economy Action Plan** was presented and the new **European Industrial Strategy** was adopted. Two different tools but with the same goal: to build a green and digital economy,

to make Europe a global leader in sustainability and strengthen its economic competitiveness.

NATIONAL RECOVERY AND RESILIENCE PLANS

The European Union's Plan stems from the awareness that we cannot limit ourselves by repairing the damage caused by the pandemic, but we must think about the future and the next generations. For this reason, the Recovery Plan has as its fundamental pillars the **ecological transition** and the **digital transition**.

In support of the Next Generation EU plan, **a financial commitment** worth **750 billion euro** has been earmarked, in addition to the 1.1 trillion euro provided in the Multiannual Financial Framework for the period 2021-2027.

In order to use the European funding, each State will have to implement by 2026 its own **National Recovery and Resilience Plan** with reforms and investments aimed at the "Next Generation EU" objectives. At least 37% of investments must concern projects for the achievement of climate targets. All expenditures must in any case be consistent with the objectives of the Paris Climate Agreement and the principle of "*do no harm to the environment*". This is an extraordinary opportunity to accelerate the construction of sustainable development, orienting public policies and private investment in this direction, with the aim of a solid and lasting economic recovery.

CONTEXT

The new European industrial strategy

During 2020, the European Commission presented its new industrial strategy.
The goal is to sustain Europe's industrial leadership by directing industrial policy toward three priorities:

- Maintain and strengthen the **competitiveness** of European industry on a global level;
- Make Europe a **carbon neutral** continent;
- Develop **digital infrastructure**.

The strategy defines the *drivers of* Europe's industrial transformation and proposes a set of actions to accelerate the green transition to an increasingly **green, circular and digital** economy.

1.2 The copper industry in the ecological transition

THE RED METAL THAT HELPS THE GREEN ECONOMY

Copper plays a very important role in the ecological transition. Thanks to its characteristics, it is the most widely used metal in the key sectors of the green economy: renewable energy, energy efficiency, circular economy, smart building, sustainable mobility.

In short, red gold - as copper is called - is a critically important material for the green economy and the ecological transition. Just as it is an essential material for the information systems - smart grids, fiber optics for 5G, home automation - that are transforming our cities into smart cities.

COPPER IN THE CIRCULAR ECONOMY

Why does copper play such an important role in the circular economy? First, because it can be recycled without losing its properties. Recycled copper is no different from mine-produced copper. Once the useful life of a product is over, it can therefore be recovered and reused to create new products. As you can imagine, it is mainly the most technologically advanced countries that recover and recycle copper, thus reducing the consumption of virgin raw materials and dependence on exporting countries. And the high recyclability of scrap, at the same time, minimizes copper's contribution to waste generation.

But that's not all: another important quality of copper is its durability. The life cycle of a copper product is very long. Durability is another strong point with respect to the principles of the circular economy. This is why we can speak of a real permanent resource, essential for the development of the circular economy.

An eternal material

Who knows if the alchemists, in choosing to adopt the ancient Egyptian symbol of ankh to indicate copper, were thinking of something similar to what we today call "circular economy". For the ancient Egyptians, in fact, that symbol evoked eternal life. And if there is a material that, because of its potentially infinite recyclability, can be considered eternal - or rather "permanent" - it is precisely copper. What is certain, even without bothering the ancient Egyptians or alchemists, is that copper is today a major player in the circular economy.

THE BENEFITS OF RECYCLING

Approximately one third of the global demand for copper is met through recycling. In Europe the percentage is even higher: according to the International Copper Study Group in our continent about 50% of the copper used comes from recycling. This helps to meet the growing demand (+250% since the 1960s) and at the same time reduces the environmental impact of production. It is clear that this also reduces dependence on raw material producing countries.

But it is above all the environmental advantages that stand out. First of all, the lower consumption of natural resources: a fundamental issue in a planet with limited resources and where the global consumption of material, in the absence of corrective measures, could double in the next 30 years. Then there is the lower consumption of energy: recycling requires up to 85% less energy than primary production. And among the

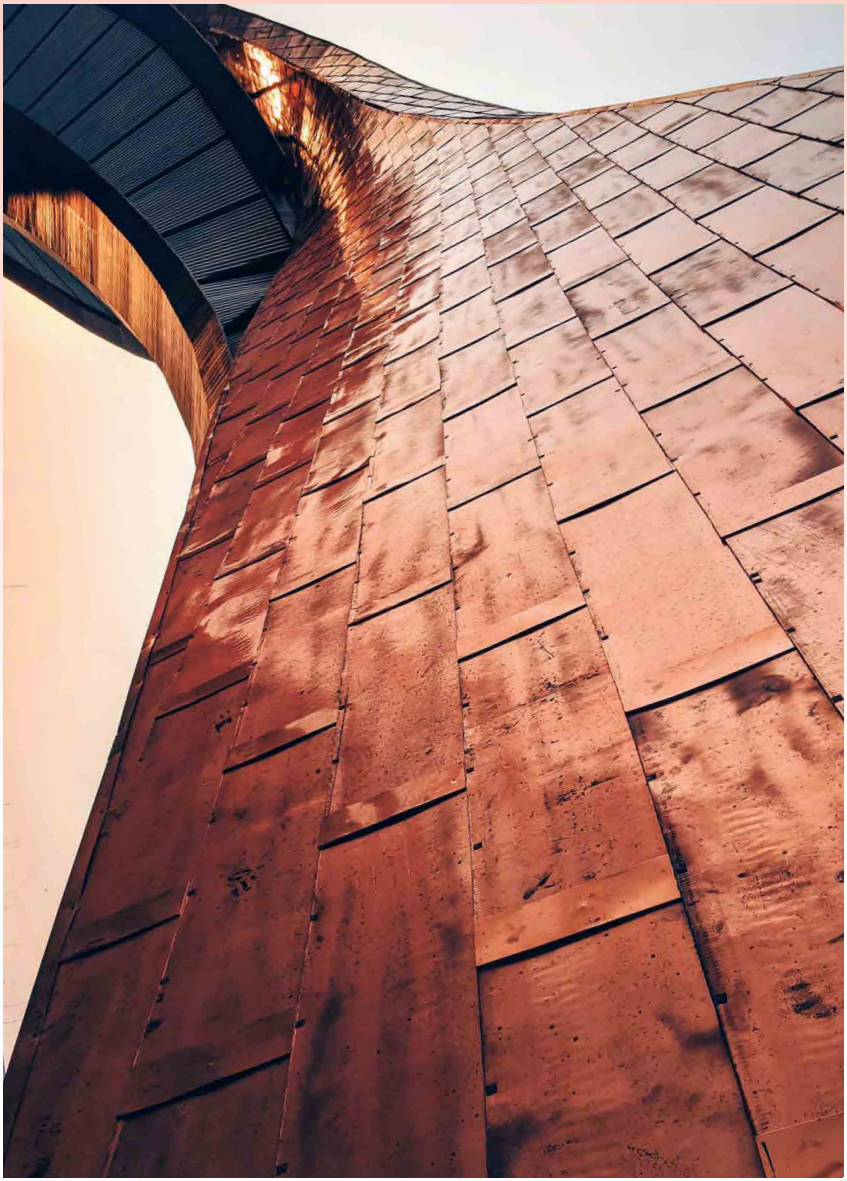
environmental benefits there is also the reduction of CO_2 emissions: in Europe alone, thanks to recycling, it is estimated that emissions are reduced by about 30 million tons per year.
In our continent, more than 2 million tons of copper are reused annually, from end-of-life products and production scrap recovered directly within production cycles. The increase in recycling is also due to innovative technological solutions that allow greater efficiency in the refining of secondary scrap and in the processing for the melting of high purity copper scrap.

A CRUCIAL MATERIAL FOR THE ENERGY TRANSITION

Copper is the best conductor of heat and electricity; only silver is a better conductor, but being a precious metal it cannot be used on a large scale. Thanks to its characteristics, it is the most widely used metal in the key sectors of the green economy: from renewable energy to high-efficiency plants, from smart building to sustainable mobility. Copper is therefore a crucial material - but perhaps we should say the crucial material - in the energy transition. It is essential both for renewable energy production plants - from photovoltaic to wind, from hydroelectric to geothermal - and for transmission and distribution networks. It is fundamental for e-mobility: car production, charging stations, batteries. It plays an important role in the energy efficiency of buildings and information systems - smart grids, fiber optics, home automation - that are transforming our cities.

A GROWING DEMAND FOR COPPER

The energy transition therefore requires the use of a large quantity of materials. Copper, first of all. And then cobalt, nickel, graphite, manganese, lithium, palladium, zirconium, platinum, rare earths. These



are the so-called "critical raw materials". Renewable energy systems, for example, require 4 to 12 times more copper than fossil fuel power generation. While electric vehicles use up to four times more copper than conventionally powered vehicles, so much so that it is estimated that copper demand for e-mobility could rise fourfold in the next seven years.

The International Energy Agency's "Role of Critical Minerals in Clean Energy Transitions" report predicts, in connection with moving away from fossil fuels and implementing climate

agreements, a sharp increase in the consumption of copper and "critical materials" over the next twenty years. The dimensions are staggering. Overall, their consumption could increase by as much as 6 times by 2040 compared to current values. A problem with environmental implications but also economic, due to rising prices, and geopolitical as the supply of these materials depends on a limited number of countries.

The demand for copper is therefore set to grow impetuously. It is expected to double to an average of 60 million tons per year. And prices, according to analysts, are also set to skyrocket. The price of the raw material has more than doubled in the last year, exceeding the threshold of 10 thousand dollars per ton.

DEVELOPING THE CIRCULAR ECONOMY

The best solution is to accelerate the development of the circular economy. Use resources even more efficiently. Design products to be more durable, reusable and repairable. Reduce manufacturing waste as much as possible. Increase recovery.

Develop industrial symbiosis. Responding to the growing demand for copper not through mining, but primarily through recycling and greater resource efficiency.

1.3 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 helps 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.

KME - On the way to climate neutrality

KME makes a significant contribution to climate protection with sustainable corporate measures. The transformation of production methods and associated operational processes is in focus of the targeted development towards climate neutrality.

Copper is the basis of all entrepreneurial activities of KME. The handling of this sustainable material is a commitment to ecologically sensible action. Due to its outstanding technical and environmentally friendly properties, copper is indispensable for the energy transition and the generally envisaged transformation to climate neutrality. Above all, its unlimited recyclability makes the material particularly climate-friendly.

Several important measures in this direction have already been taken and their implementation continued in 2020. Further measures are underway in 2021, and more are planned in the coming years.

STATE OF DEVELOPMENT

ENERGY MANAGEMENT

With its certified energy management according to ISO 50001, KME makes an important industrial contribution to the conservation of resources.

COPPER RECYCLING

Numerous pioneering measures for the use of innovative recycling technologies as well as for closing material cycles, increasing the recycling rate and recovering heat have already been implemented. Results and benefits far exceed the industry standard. Today, we already rely on a very high recycling rate of over 75% in our foundries.

KME ECOLOGICAL COPPER

KME offers the market a material with a particularly climate-friendly CO_2 balance: recovering of recycled material is high compared to the copper needed for production and this trend is increasing. We thus avoid the use of new metals, which are highly energy-intensive in production.

CURRENT ACTIVITIES

TRANSITION ENERGIES

KME has been working continuously for many years on process optimisations to avoid environmental pollution. Currently, various development projects are creating the technological prerequisites for replacing fossil fuels with renewable energy sources to an even greater extent. Already today, more than 60% of the electricity used comes from renewable energies.

NEW GUIDELINES

A roadmap for climate neutrality for KME is currently being drawn up. After identifying the necessary technological prerequisites, the corresponding measures will be developed. The solutions go beyond the current state of the art and are partially not yet available for the processes of the non-ferrous industry.

METALS PRO CLIMATE

The initiative "Metals pro Climate" illustrates the contribution of the non-ferrous metals industry to

climate protection through scientific and technology-based solutions. The industry's savings potential is an essential factor in industrial activities against global warming. Chairman of the initiative is Ulrich Becker, former CEO of KME Group.

FURTHER MEASURES

- KME continues to work on the continuous improvement of energy efficiency in all operational areas.
- The CO_2 emission values of the company and its products are completely recorded and balanced. Participation in various benchmarking projects in the copper industry ensures a correct status assessment at all times.
- As part of the CDP sustainability ranking, we report our CO_2 emissions on a voluntary basis. The CDP is a non-profit organisation that promotes transparent climate reporting.
- By committing to the Science-Based Targets Initiative (SBTi), we oblige to set a science-based climate target to reduce our CO_2 emissions, which will contribute to limiting global warming to 1.5°C in accordance with the Paris Agreement and to become climate-neutral by 2050 at the latest.
- For the efficient realization of the company's goal of climate neutrality, KME works together with competent external partners. Customers and suppliers are also involved in order to achieve the most far-reaching results possible.

KME copper, essential in times of crisis

Copper is needed now to manufacture essential medical equipment, to keep vehicles on the road for the delivery of supplies, to keep electrical power flowing, and to ensure adequate food supply. Life as we know it would come to a sudden stop without copper.

Copper and the medical fight against COVID-19: The health industry relies upon copper for the delivery of medical gases and copper is needed for medical equipment used for diagnostics as well as equipment to treat and to monitor patients' progress.

Copper is essential to the economy: The copper and copper alloy semi-manufacturing industry is an essential contributor to the continued operation of the global economy.

Copper is needed for generation and distribution of electricity to homes, shops and industry.
Copper is used in the transport system for the delivery of power to trains and streetcars, in signal wire, in vehicles for the distribution of power, and on-board computers.

Modern computing would not exist without copper in circuit boards and processors and essential air-conditioning in data-centres.

Copper is a global product and relies on international supply chains. Much copper is mined in countries and regions where copper demand is low and shipped to countries where copper is needed. It is essential that ports remain open so that they can handle copper that is being trans-shipped.

The copper industry is essential during the COVID-19 pandemic and will be needed more than ever once the crisis has passed and the global economy returns to normal.
Copper keeps people safe: copper helps keep food fresh and long-lasting for extended periods of time by ensuring freezers, chillers and refrigerators do their job of keeping food cold.

Copper is essential in the food-canning industry for the welding of cans.

Copper is used in air-conditioning units to lower the ambient temperature in countries with hot and humid climates and also to provide heat in countries with colder climates.

In general the copper processing industry is a more low-risk workplace for the spread of COVID-19: the copper semi-manufacturing industry has a highly efficient manufacturing process. Therefore, existing working practices at KME are well structured which means that as an effective protective measure, the primary requirement for distance between persons is easily implemented and enforced in the workplace.

What can be done: KME Copper plants should continue to operate during the COVID-19 pandemic to ensure the essential services continue uninterrupted. Ports and other transport infrastructure should be kept open for essential industrial deliveries, including copper products.

(Sources: IWCC / KME EHSQ Management - 04/20)

DEEPENING

Strategies and technologies for the ecological transition

Copper is the basis of all KME Group activities. Thanks to its outstanding technical and ecological properties, copper is essential for the energy transition and the transition to climate neutrality.

Its unlimited recyclability makes the material particularly climate-friendly. KME strives to continuously optimise the efficiency of its recycling processes. In Europe, about half of the raw material used for copper processing today consists of recycled material. With innovative technologies, however, it is possible to do even more: KME recovering of recycled material is high compared to the copper needed for production and this trend is increasing.

Application-specific solutions for copper and copper alloys are a decisive basis for the supply and use of technologies that serve to optimise the overall CO_2 balance. In the face of a growing demand for energy efficiency, KME supports strategies in this direction with research and development and highly developed engineering. This makes a decisive contribution to improving energy efficiency and developing renewable energies to promote electrification and the shift away from fossil fuels. In close coordination with developers and component manufacturers, the efficiency of electric motors, converters, power lines, heat exchangers, solar installations and wind turbines is optimised, as is the energy balance of industrial processes and building energy systems.

With sustainable corporate measures, KME makes a significant contribution to climate protection. The company's ecological footprint will be minimised. The transformation of production methods and operational processes is at the heart of the targeted development towards climate neutrality.

KME already operates energy-efficient production facilities in Germany. For example, the Conti-M® at the Hettstedt site operates according to a globally unique cast-rolling technology. The Conti-M® process bypasses the conventional step of hot-rolling slabs, working instead continuously from liquid to solid state, thus tying up the first part of the process chain in an innovative way. This makes this technology a benchmark for the production of high-purity copper strips.

The use of intelligent processes in KME's melting furnaces significantly shortens processes, making them faster and more efficient. All KME pure copper products for construction applications are already made from 100% recycled material and marketed worldwide under the KME Ecological Copper quality mark. The benefits are clear, with an 85% reduction in energy consumption compared to production from raw materials and significant savings in CO_2 emissions.

2
The company

Our company has over a century of experience in processing copper. Since 2019 we have been part of the KME Group. We manufacture in the city of Hettstedt in the state of Saxony-Anhalt, Germany. Each of our 1,134 employees is committed to the quality of our products and to innovation on a daily basis. We have customers in 60 countries all over the world. Over the past 20 years we have invested more than 400 million euro and continue to do so, looking to the future.

Today as part of the KME Group, KME Mansfeld is an important player in Europe in the production of copper strips and sheets but also famous for bars and high performance wires made of high grade copper.

Since 2019 part of the KME Group

In June 2019, MKM (Mansfelder Kupfer und Messing GmbH) officially assumed the name **KME Mansfeld GmbH**.

The name change completed the process of formally integrating MKM GmbH into the KME Group. The acquisition of KME SE's indirect 100% stake in MKM Mansfelder Kupfer und Messing GmbH had been completed at the end of February 2019.

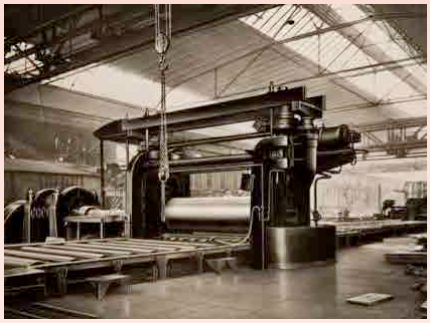
Under the new name KME Mansfeld GmbH, the Hettstedt plant is now one of the three pillars of the KME Group, alongside the sites in Fornaci di Barga and Osnabrück.

The merger of MKM and KME brings significant benefits not only to the Hettstedt site, but also to the KME Group's role in the copper products market. With integrated plants in a strong production, research and development network, and a global presence in all markets, the group of companies can play a leading role in international competition. The three industrial sites will focus on specific product segments according to their technical strengths.

The KME Group can seize further opportunities in the copper market, particularly with regard to scenarios related to the digital and ecological transition, which will have a positive influence on the demand for copper components.

2.1 Our history

The plant in Hettstedt has a history of over 100 years. The location was chosen because of its proximity to copper smelting and production in the neighborhood. At the beginning of the 20th century, the mining complex "Mansfeldsche Kupferschiefer bauende Gewerkschaften" was the largest player in copper metallurgy in Europe and decided to found the Hettstedter Kupfer- und Messingwerke in 1907. As early as 1917, the plant with 2,200 employees was producing about 36,000 t of semi-finished products. The name of the company has changed several times over the years.



1907
Resolution to found the Hettstedter Kupfer-und Messingwerke

1908
Installation of the first production plant at the site, a rolling mill for wires

1909
Installation of the wide hot rolling mill for plates

1912
Start of a new rolling mill for copper sheets, a drawing plant for copper wire and a bar drawing plant

1916
Start of the rolling mill for strips

1935
Start of the production of aluminum extrusion products

1946
Conversion of Kupfer-und Messingwerk Hettstedt to Walzwerk für Buntmetalle der Sowj. A.G.

1953
Return to a german state owned company named VEB Walzwerk Hettstedt

1900 1910 1920 1930 1940 1950

1970
Integration into the enterprise VEB Mansfeld Kombinat Wilhelm Pieck

1990
German Reunion, Privatisation by German Treuhand as Walzwerk Hettstedt AG

1993
Fusion of Walzwerk Hettstedt AG and Mansfeld AG to Mansfelder Kupfer und Messing GmbH

1995
Acquisition by the Belgian group Lamitref Industries

1998
Extensive new investments at site including installation of the world first continuous casting plant for copper strips, rolling mills for wide strips and treatment furnaces to produce copper strips, installation of a continuous casting plant for wire rod and an anode hut for the production of copper cathodes

2004
Acquisition by the Kazhak company Kazhakmys plc

2013
Acquisition by Copper 1909 Bidco GmbH

2014
Installation of a new biological wastewater treatment plant

2015
Installation of the copper wire casting plant

2017
Enlargement of the copper wire casting plant

2019
Acquisition by the company KME SE

1970 1980 1990 2000 2010

KME Group figures

362,000 TONS*
(Sales)

472 MILLIONS EURO
(Net value added)

8 PRODUCTION SITES
(in Europe, China, USA)

About 3,866*
EMPLOYEES

GLOBAL SALES NETWORK with offices, agencies and trading companies on 4 continents

1 JOINT VENTURE
with 2 production sites
(China and Germany)

3 RESEARCH CENTERS
in Germany and Italy

12 SERVICE CENTERS
(excluding JV in China)

* *Excluding Tréfimétaux Group and Joint Venture in China*

2.2 The KME Group

KME SE is one of the world's largest manufacturers of copper and copper alloy materials. Controlled by Intek Group S.p.A, KME Group has production facilities in **Europe** (Germany, Italy, France, Spain), **China** and the **United States**.

FIG 2.1 Group structure

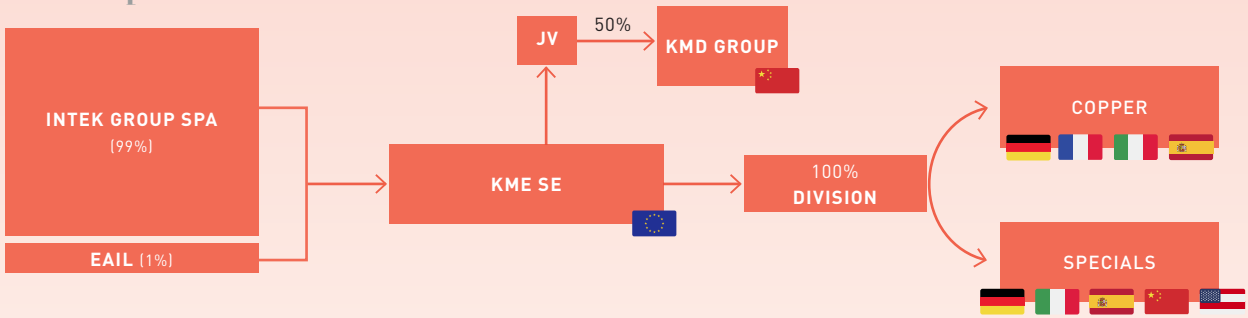
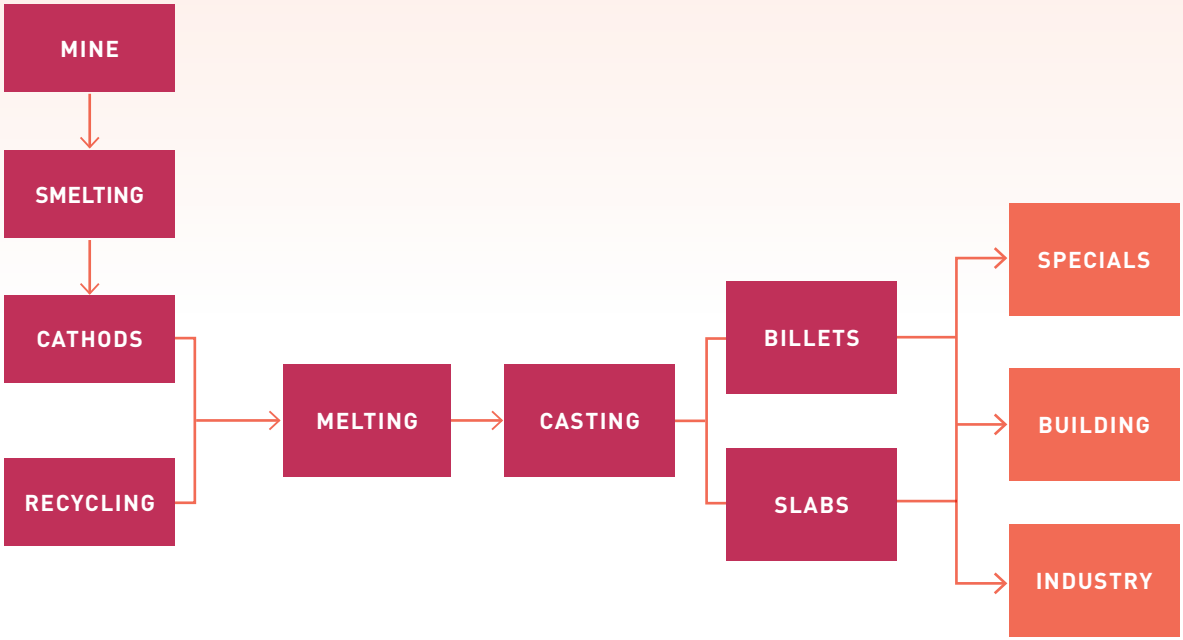
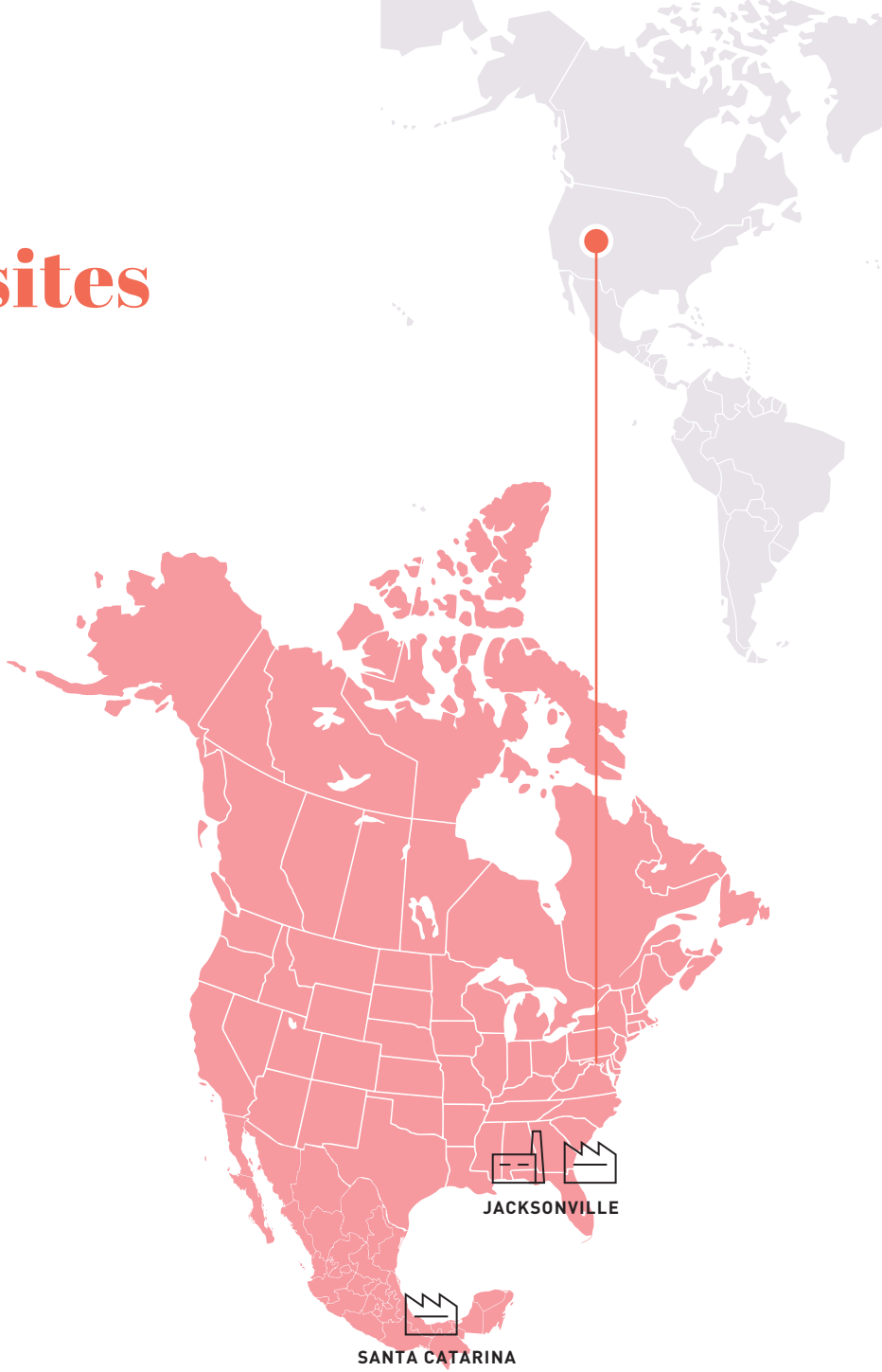


FIG 2.2 KME value chain



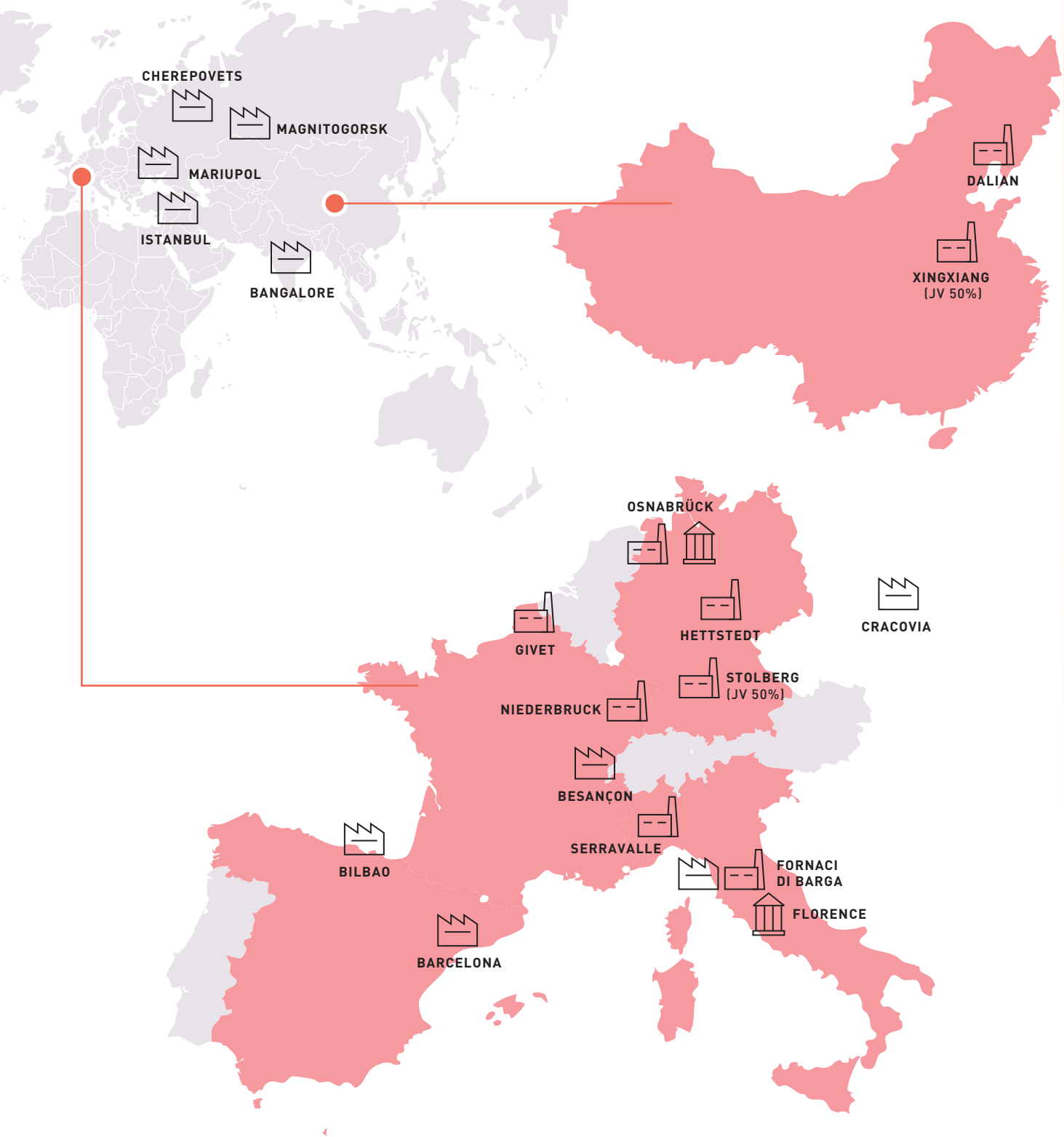
Production sites



PRODUCTION PLANT

SLITTING CENTER

HEADQUARTERS


CHEREPOVETS
MAGNITOGORSK
MARIUPOL
ISTANBUL
BANGALORE
DALIAN
XINGXIANG
(JV 50%)
OSNABRÜCK
HETTSTEDT
CRACOVIA
GIVET
STOLBERG
(JV 50%)
NIEDERBRUCK
BESANÇON
SERRAVALLE
FORNACI
DI BARGA
FLORENCE
BILBAO
BARCELONA

Overview

COPPER PRODUCTS

ROLLED

- Used in the electric and electronics industries, roofing and cladding, automotive, renewable energies, power transmission, mechanical industry, minting and telecommunications.
- Construction, mechanical, automotive, renewable energy, architecture

BARS

- Flat bars, round bars, square bars and profiles made of copper and low-alloyed copper alloys
- Power engineering, electrical engineering
- Wind power
- Switch gear construction, buses, transformers, wind power (onshore/ offshore

WIRE

- Wires and strands in cables and conductors, railway materials
- Lightning protection/ earthing, Power engineering, Heavy current engineering, Telecommunications, Solar power, Offshore/submarine cables
- Automotive, rail, aviation, space travel, Packaging industry

TUBES

- Plumbing tubes for sanitary and heating installations
- Copper tubes for air-conditioning & cooling
- New building and restoration

SPECIAL PRODUCTS

- Tube moulds, cooling plates and casting wheels for melting and casting
- Extruded special products from rods, bars, profiles and tubes with applications in welding and machining
- Pipes, fittings, flanges, tubes and tube fittings for seawater applications
- Steel & Metal Industry, Machine Building, Chemical Industry, Shipbuilding, Offshore

Key end markets

KME is well positioned to meet the growing demand in its key end markets

STEEL

- Highly customised products developed in close collaboration with customers and in-house or external research facilities
- ATSM - Advanced Thin Slab Mould plate in field ramp up
- Fibre optical temperature measurement under launch

AUTOMOTIVE

- Copper will experience a higher share in programs
- Stability of board nets will require higher share of copper
- 48V technology requires higher battery stability
- Autonomous driving and digitalization will increase electrical components
- Charging stations will drive copper components

CONSTRUCTION

- Modern roofing and cladding solutions
- Classic sheets and coils are manufactured in state-of-the-art production facilities according to EN 1172 and KME's own strict guidelines
- Plumbing tubes for sanitary and heating installations

OTHER

- Wide and diverse range of industrial rolled pro-ducts, tubes and special products
- Alloys based on copper-nickel, copper-zinc and copper-aluminium (cladded materials) products highly resistant to the extremely corrosive effects of sea water in the marine industry.
- Copper tubes for air-conditioning & cooling

The history of the KME Group

KME's history dates back to 1886. Since then, it has developed copper production activities in Europe. In 2006, it acquired a majority stake in China, where it further expanded through a joint venture in 2014. Since 2017, it has also been operating in the U.S.

1896
The Società Metallurgica Italiana (SMI) is founded.

1897
SMI is listed on the Milan Stock Exchange.

1902
The Orlando family takes over the management of SMI (Società Metallurgica Italiana).

1990
SMI acquires 76.9% of Germany's leading producer of semi-finished copper and copper alloy products KM - Kabelmetal AG and becomes the GIM-SMI Group.

1995
GIM-SMI Group establishes KM Europa Metal AG (KME).

KME concentrates the management of the Group's European activities in a single company, located in Germany, which controls 100% of the Group's industrial activities in Germany, France, Italy and Spain. In the same year, KME and the Finnish Outokumpu Group set up an equal joint venture in LOCSA (Laminados Oviedo Cordoba S.A.) based in Oviedo, Spain, for the production of rolled products.

1999
SMI acquires 98.17% of KME's shares through a voluntary tender offer.

2005
Intek S.p.A. becomes the majority shareholder.

2006
SMI changes its name to KME Group S.p.A. and increases its stake in DD Heavy Machinery to 70%.

2012
KME Group S.p.A. incorporates Intek S.p.A. and changes its company name to Intek Group S.p.A.

2014

The UK hydraulic hose business is sold to Mueller and a JV with Golden Dragon and Chogquing Wanzhou Economy Technology Development Co is founded.

2015

Pipe production at the Osnabrück plant is transferred to Menden, optimizing the plant structure.

2016

KME sells 49% of its stake in KME France S.A.S. (now Tréfimétaux S.A.S.) to European Copper Tubes Limited. The sale includes part of the assets of the plants in Givet and Niederbruck (France) and Serravalle Scrivia (Italy). KME now operates these plants through its subsidiary Tréfimétaux S.A.S. in a joint venture with European Copper Tubes Limited.

2017

Expansion into the U.S. market through the acquisition of a production facility serving the U.S. Navy program.

2019

- KME AG changes its legal form to SE, European Company;
- KME SE acquires 100% of MKM Mansfelder Kupfer und Messing GmbH;
- Sold to the Chinese group Hailiang Netherland B.V. are KME Brass Italy, KME Brass Germany, KME Brass France, Kabelmetal Messing Bet and KME Ibertubos, as well as the German copper tube business in Menden.
- KME SE buys 49% of the shares of Tréfimétaux S.A.S., acquiring 100% control.

2020

The KME headquarters in Osnabrück is divided into two companies: KME Germany GmbH (copper products) and KME Special Products GmbH (special products).

KME
Leader in technological innovation

- Intellectual property of approximately 50 patents and 60 trademarks related to alloys and processes.
- A team of more than 70 research and development staff based in three research centers in Italy and Germany.
- Current areas of research and development include:
  - — *Materials processing and recycling (separation of tin and copper scrap).*
  - — *Energy efficiency and process redesign.*
  - — *Coating enhancements for extreme temperature conditions and high casting speeds.*
  - — *Use of automation in manufacturing and digital development.*

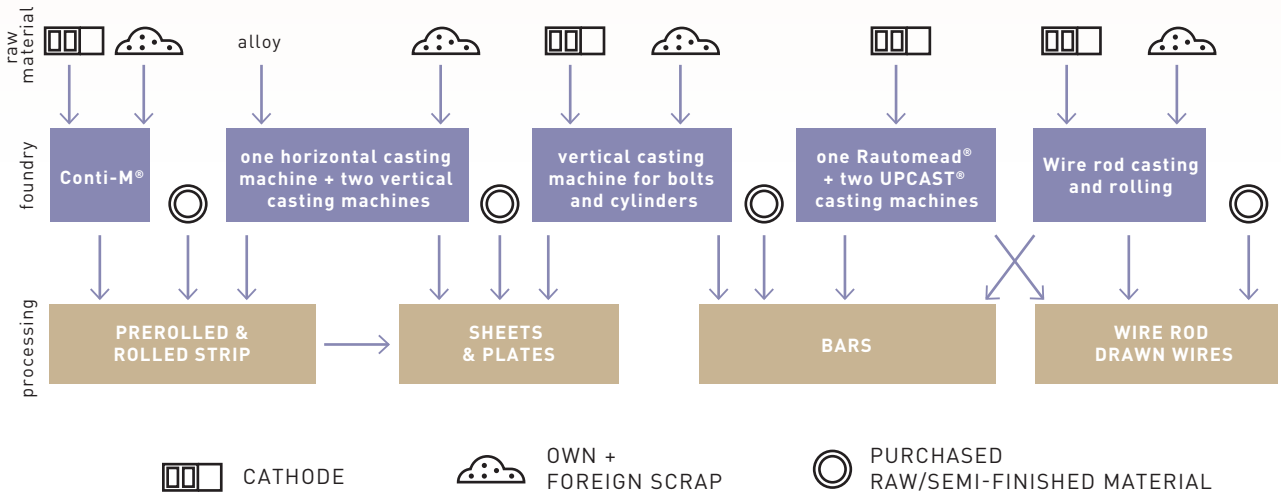
2.3 The plant

KME Mansfeld manufactures **primary and semi-finished products** made of copper and copper alloys. In addition to offering a wide range of products, the company is also specialized in customized solutions for the industry. With state-of-the-art technologies, it is a strong global partner in growth markets such as **e-mobility, renewable energy and digital infrastructure**.

KME Mansfeld is owner of the buildings and land on the north part of the plant in Hettstedt.

The buildings and land in the south part of the plant in Hettstedt are owned by a third party and KME Mansfeld may use these within the framework of a heritable building right.

The plant in Hettstedt covers a total area of about 1.2 million m²; 190,780 m² are covered by buildings.



Rolled

KME Mansfeld supplies pre-rolled strip, industrial strip, transformer strip, cable and HF cable strip and roofing strip. We manufacture all of our strip products using our Conti-M® technology which we developed in-house, using continuous casting technology to achieve a 24/7 process.

MAIN PRODUCTS:

- Pre-rolled materials (Coils);
- Sheets made of rolled;
- Finished rolled products;
- Industrial strip — Transformer strip;
- Roofing (hook strip) — Cable tie;
- High frequency cable strip — Solar cells;
- Alloy strip.

CUSTOMERS / MARKETS / APPLICATIONS:

Sales in 59 countries with more than 600 customers from electrical, cable, solar technology or construction industry. Main markets are Europe, North America, East Asia, North Africa.

In the copper industry Conti-M®, with a twin belt caster as its core, is a unique production process. By combining melting, casting, homogenization, hot rolling and surface milling in one production line, we avoid additional cooling and re-heating phases. This leads to a highly efficient process in terms of energy usage, yield and throughput. Within KME Mansfeld, Conti-M® material is the source for all strip products.

Wires

KME Mansfeld is one of only a few manufacturers of copper wires with an integrated production process. KME supplies the entire spectrum of wire rod, from thick, medium and fine wire to stranded wire and wire rope. Our fully integrated wire rod casting and rolling technology allows us to offer copper wire products and alloy wire products (plain and tinned) in a wide range of finishes.

WIRE ROD CASTING PLANT
(WIRE ROD CASTING AND ROLLING TECHNOLOGY)

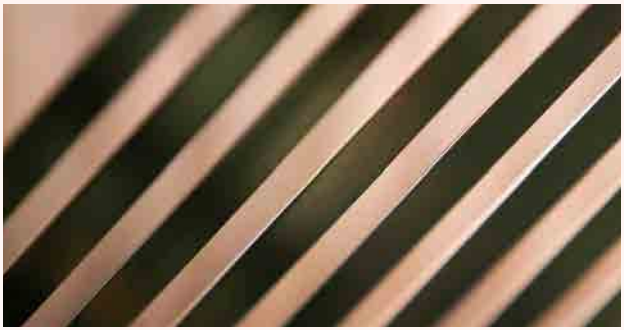
- 150,000 tons per year* for the external market;
- plus 45,000 tons per year* for our drawn wire production.

DRAWN WIRE PRODUCTION (APPROX 140 WIRE DRAWING AND STRANDING/STRANDING MACHINES)
90% of all products are used as starting material for cables and wires.

- Power transmission;
- Automotive & mechanical engineering;
- Communication;
- Special cables.

Sales in 33 countries - main markets are Europe, Middle East, North Africa

**maximum system capacity*



Sheets and plates

KME Mansfeld offers sheets, plates and discs in a wide range of dimensions, to customer specific drawing on request. Our rolling mill is supplied by our own foundries. We serve a broad range of more than 50 alloys.

Production of copper, brass, bronze, special alloys.

MAIN PRODUCTS:

- Sheets (thickness <5 mm) 20%.
- Plates (thickness> 5 mm) 70%.
- Other products 10%.

CUSTOMERS / MARKETS / APPLICATIONS:

- Sales in 41 countries.
- Main markets are Europe, North America, Middle- and East Asia.

INDUSTRIAL APPLICATION:

- Chemical, Electronic, Energy technic, Drinking water production.
- Construction, architecture and decoration.

Bars and profiles

KME Mansfeld is one of Europe's leading producers of copper bars and profiles. Our production range encompasses a wide range of sizes in various grades of copper. We also produce customised profiles based on technical drawings.

MAIN PRODUCTS:

- Bars;
- Flat bars;
- Round bars;
- Hexagonal bars;
- Profiles.

MARKETS / APPLICATIONS:

Switchgear construction (low and medium voltage), power distribution systems (busbars), transformers / electrical components, electrical machine construction, wind power, automotives, shipbuilding, offshore-industry, system and apparatus engineering.

Main markets are Europe, North America, North Africa.

Successful projects for KME Mansfeld products

Every job is different, especially when it comes to custom solutions and special products made on behalf of clients. Many of these cannot be found anywhere else in the world, for example when it comes to special buildings, artwork and monuments. Here are some examples.

Distillery of Dalmunach

GREAT BRITAIN

Yanbu

SAUDI-ARABIA

The Yanbu 3 desalination plant use 450 tons copper-nickel plates for heat exchanger to transform sea-water into drinking water.

New York - Ground Zero

UNITED STATES OF AMERICA

125 tons in memory of the victims of the terrorist attack of September 11, 2001

Off-shore

It takes up to 30 tons of copper to connect an offshore wind turbine to the power grid.

Axel Towers

DENMARK

240 tons of brass sheet metal for a spectacular project in Copenhagen.

2.4 Governance

As the legal form of a Limited Liability Company, KME Mansfeld is subject to the German Law on Limited Liability Companies. The regulations for large business corporations apply.

The Company is resident in Hettstedt, Lichtlöcherberg 40, and is enrolled in the commercial register of Stendal local court under HRB 207208.

The members of the management represents the company in and out of court and convenes the shareholders' meeting. Members of the management in 2020 were:

- Mr Ulrich Becker, Duisburg/Germany, managing director, CEO (until 17 September 2020);
- Mr Claudio Pinassi, Rosignano Marittimo (LI)/Italy, managing director, COO;
- Mr Kakha Avaliani, 3PA London/Great Britain, managing director, CCO.

SUPERVISORY BOARD

The supervisory board supervises the management and acts as its controlling body. It is responsible for overseeing the functioning and compliance with the model and reporting any critical issues to the shareholder's meeting. The chairman of the supervisory board is a person external to the company.

In 2020, the supervisory board consisted of the following persons:

Employeer representatives

- Mr Roelf-Evert Reins (Chairman)
  Profession: Lawyer;
- Mr Vincenzo Manes
  Profession: Chairman of executive board of Intek Group S.p.A.;
- Ms Diva Moriani
  Profession: Deputy chairwoman of executive board of Intek Group S.p.A.;
- Ms Alessandra Pizzutti
  Profession: Lawyer KME Group.

Employees representatives

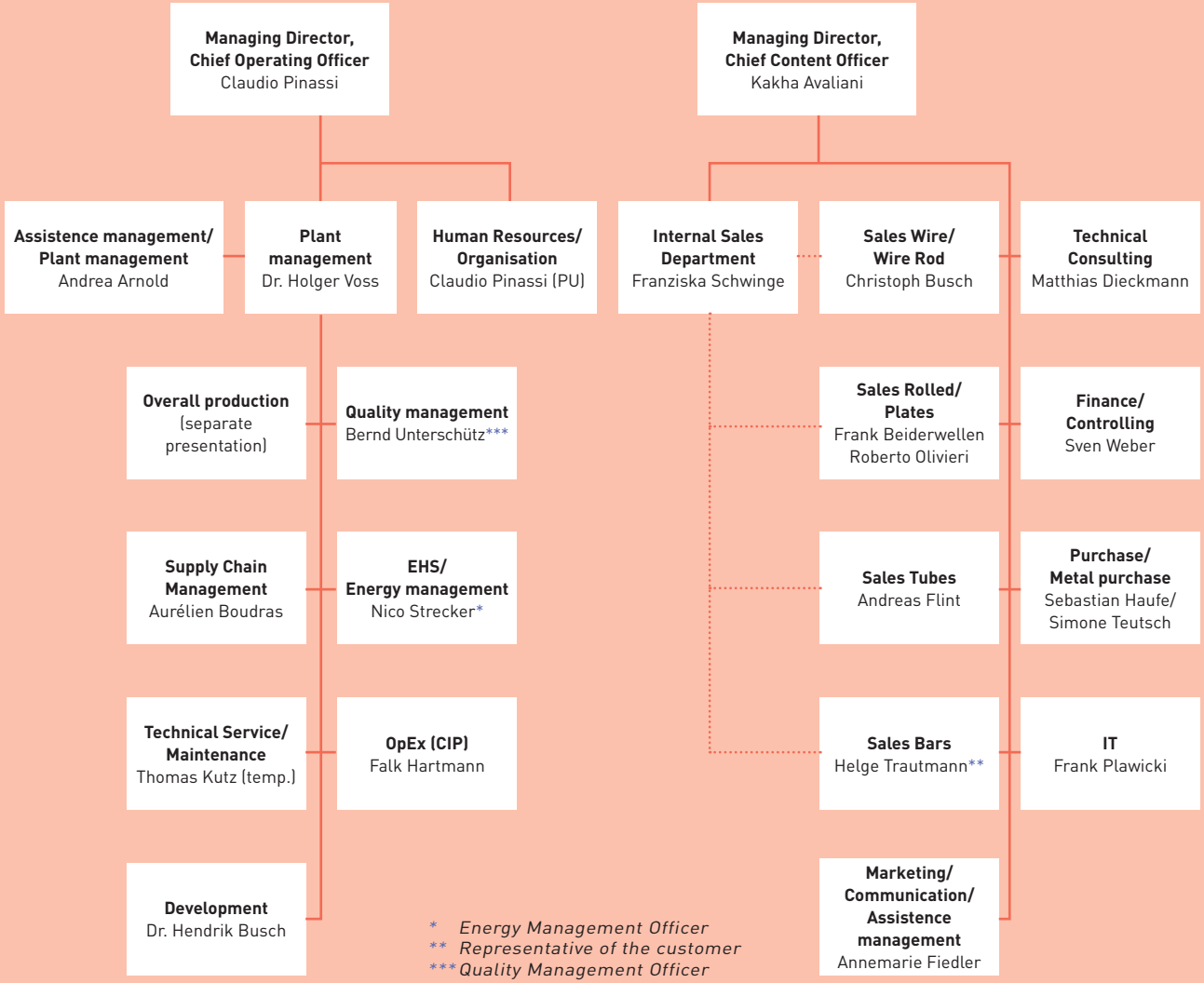
- Mr Ronny Wehling (deputy chairman)
  Profession: Paramedic;
- Mr Christian Klopfer
  Profession: Industry mechanics.

As the sole shareholder of KME Mansfeld, KME SE sends its representatives to the shareholders meeting. In 2020 participated for the shareholder:

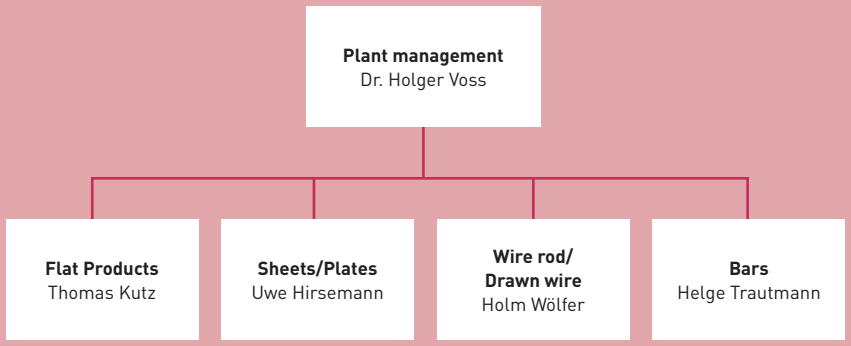
- Mr Ulrich Becker (Chairman, managing director, CEO KME SE);
- Mr Marco Miniati (managing director, CPO KME SE);
- Mr Pierpaolo Di Fabio (managing director, CFO KME SE).

The auditing firm for KME Mansfeld is Deloitte.

Organizational model and main corporate functions
Status Dec, 1st, 2020



Overall production



2.5 Code of conduct

KME Mansfeld operates 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.

LAW COMPLIANCE

- KME complies with the applicable laws and other legal requirements of the countries in which it operates. To this end, KME has systems in place to control, for example, the identity of its customers and business partners to prevent money laundering. KME's philosophy is to establish business relationships only with fully compliant partners.

ORGANIZATIONAL INTEGRITY AND GOVERNANCE

- KME orients its activities towards ethical values and universal principles, in particular integrity, honesty, respect for human dignity, openness and non-discrimination based on religion, ideology, gender and ethnicity.
- KME rejects corruption, as set forth in the relevant United Nations Convention. It uses appropriate means to promote transparency, integrity, responsible leadership and corporate accountability.
- KME pursues fair business practices and fair competition. It promotes cooperation with the supervisory board.

CONSUMER INTERESTS

- KME complies with consumer protection laws and appropriate sales, marketing and information practices.

COMMUNICATION

- KME communicates openly and is oriented towards dialogue on the requirements of the code of conduct and its implementation among employees, customers, suppliers and other stakeholders.

HUMAN RIGHTS

- KME is committed to promoting human rights. It respects human rights as set forth in the United Nations Charter.

PRIVACY

- KME protects privacy.

HEALTH AND SAFETY

- KME is committed to ensuring health and safety, in particular, ensuring a safe and healthpromoting work environment, avoiding accidents and injuries.

HARASSMENT

- Protection of employees against physical, sexual, psychological or verbal harassment or abuse.

FREEDOM OF CONSCIENCE

- Protecting and guaranteeing the right to freedom of conscience and freedom of expression.

WORKING CONDITIONS

- KME adheres to the following core work standards:

Child labor

Prohibition of child labor, i.e., the employment of persons under the age of 15, provided that local legal requirements do not provide for a higher age limit and provided that no exceptions are allowed.

Forced labor

Prohibition of forced labor of any kind.

Salary remuneration

Work rules relating to compensation, particularly with respect to the level of compensation as required by applicable laws and requirements.

Employee rights

Respect the employee's rights to freedom of association, freedom of assembly and collective bargaining, to the extent legally permitted and possible in the respective country.

Prohibition of discrimination

Treatment of all employees in a non-discriminatory manner.

Working hours

KME adheres to labor standards regarding maximum allowable work time.

ENVIRONMENTAL PROTECTION

- KME meets the requirements and standards for environmental protection and acts in an environmentally conscious manner. To take greater responsibility for natural resources, it adheres to Rio's Declaration principles.

CIVIC ENGAGEMENT

- KME contributes to the social and economic development of the countries and regions in which it operates and promotes voluntary activities by its employees.

No supply from war zones

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

Lawfullness

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.

2.6 Certifications

The management system of KME Mansfeld is certified according to the following standards:

- **DIN EN ISO 9001:2015** (Quality management)
- **IATF 16949:2016** (Additional certification for automotive)
- **DIN EN ISO 50001:2018** (Energy management)

In 2021 the procedure for obtaining the certification ISO 14001:2015 (Enviromental management) has been completed. This certification marks another milestone in the realization of an integrated EHSE management system. We plan to achieve in 2023 the certification DIN ISO 45001:2018 (Occupational health and safety management).

QUALITY CERTIFICATION

The IATF16949:2016 certification system guarantees the quality of our products. Our customers' requirements are met through a consistently high level of quality, from the inquiry stage to the finished product, right through to delivery at the customer's premises.

And, of course, we monitor the quality of our products during production and once completed. We use the latest testing equipment in manufacturing, chemical laboratory, mechanical materials testing, metallography and metal physics.

2,7 Sales

In 2020 sales amounted to 225,459 tons, of which :

- **Germany** 99,814 — 44%
- **E.U. countries** 102,752 — 46%
- **Rest of the world** 22,893 — 10%

SALES (tons)	2018	2019	2020
WIRE ROD	101,644	77,563	73,541
WIRE	36,809	30,179	30,597
STRIPS	89,474	83,959	84,648
SHEETS & PLATES	11,405	11,641	9,018
TUBES	12,578	10,150	4,328
BARS	27,542	26,323	22,810
BILLETS	2,517	1,193	517
TOTAL	281,969	241,008	225,459

FIG 2.3 Sales

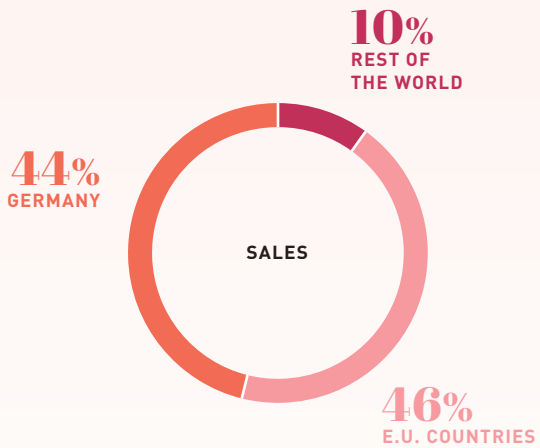
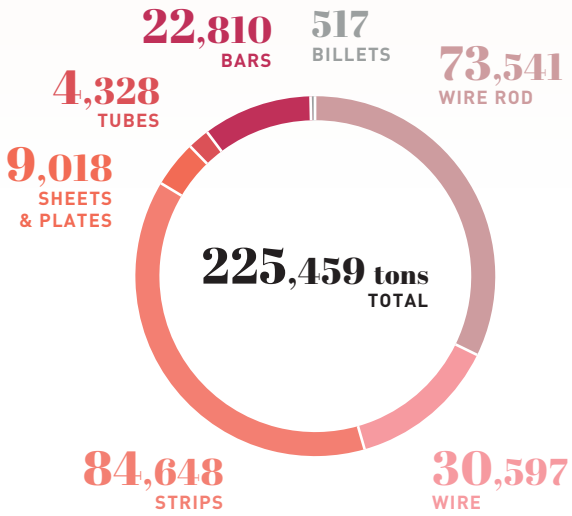
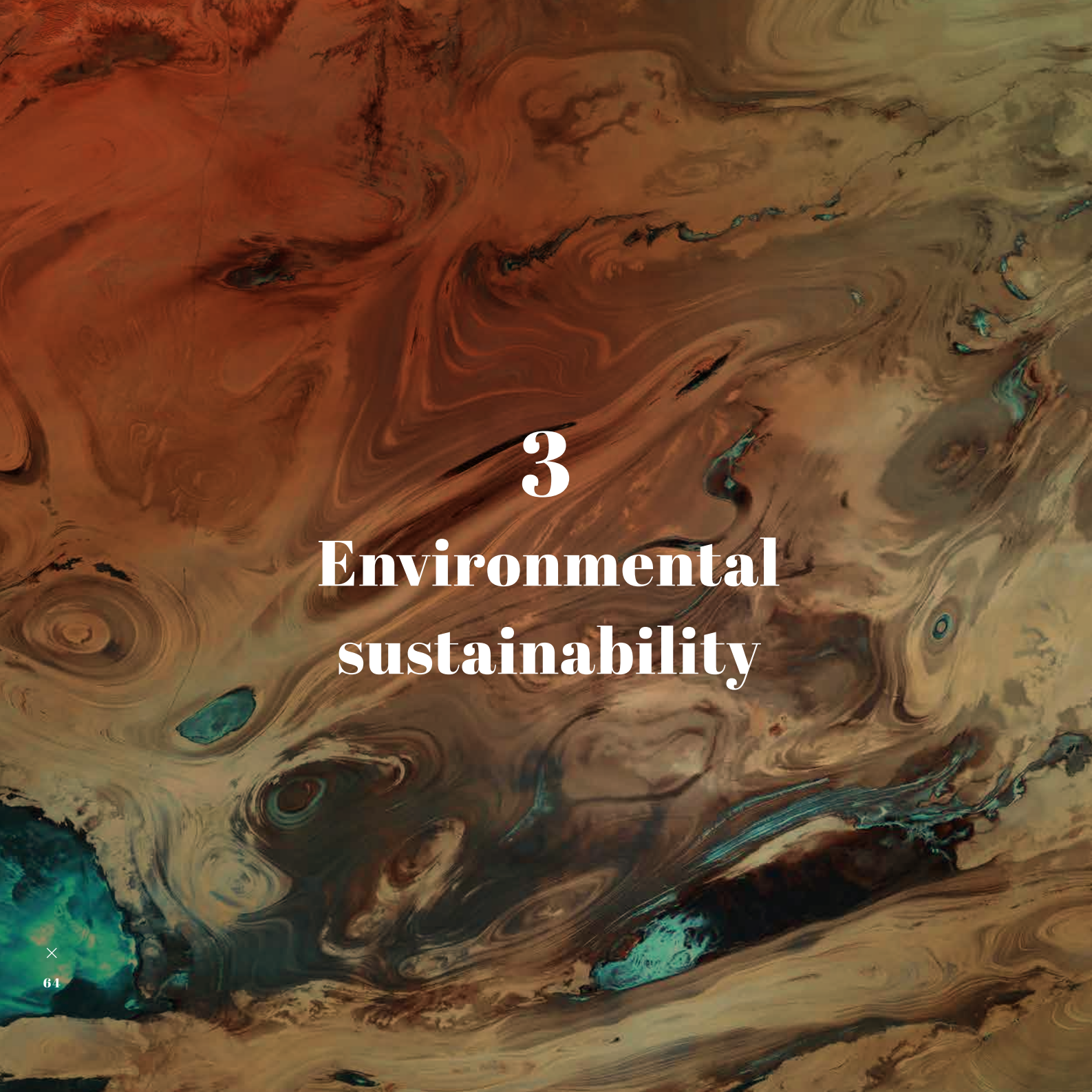


FIG 2.3 Sales in 2020 (tons)





3
Environmental sustainability

ENERGY EFFICIENCY

-1,6%

consumption per unit of product (compared to 2019)

CIRCULAR ECONOMY

52.921 tons

recycled metals within the plant

CLIMATE

-18,8%

CO_2 emissions per unit of product (compared to 2019)

WASTE

-17,9%

reduction (compared to 2019)

WATER

70,3%

percentage of recycling on total water used

3.1 Environmental management system

As stated in the KME Group's Code of Conduct, protecting the environment is a priority for our business. The focus on environmental protection is also necessary because the main activities of KME Mansfeld GmbH have a major environmental aspect.

There are 5 assets in operation that require approval under German law. In addition, 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.

Because of the obligation to improve continuously the management system, we have decided to strive for an external certification according to DIN EN ISO 14001:2015. Starting in 2019, employees are being trained in the basics of the environmental management system and a management team was installed to organize the transition to an integrated energy and environmental management system. The first procedural instructions were drawn up and the management manual revised. The aim is to achieve the certification in 2021.

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 are reported to the management.

Environment and energy policy

The KME Mansfeld is one of the leading manufacturers of primary materials and pre-products made from copper and copper-based alloys. The manufacturing processes of our products require a high energy input. Melting, casting, pressing, pulling, rolling and cutting processes have a high impact on protected natural resources such as air, water, soil, humans, fauna and flora. This is why protection of the environment and energy efficiency are of such importance to us.

- Our environment and energy policy is the framework for our annually defined objectives, which are in turn broken down to the individual departments. The objectives are continuously tracked and controlled. The derived measures from planning to implementation are fully aligned with protection of the environment and energy efficiency.
- Resource-saving usage of raw materials, consumables and fuels as well as the use of technical equipment up to current standards in regards to economical tenability are essential components to our actions. Our raw materials and intermediate goods can be recycled almost completely and reintroduced into the economic flow.
- Sourcing focuses on high quality, environmentally friendly and energy efficient products and services. Contractors are briefed and advised to adhere to the applicable laws and our regulations and are chosen, accordingly.

- Sustainability of our processes as well as their ongoing advancement are very important to us. Saving drinking water, resource saving use of consumables, reduction of waste and all possibilities of saving energy are therefore expedited.

- We encourage the environmental and energy awareness of our employees on all levels. Possible effects on the environment and energy consumption are taken into consideration in advance of the acquisition of new machines or the implementation of process changes. The handling of hazardous substances, waste, wastewater and emissions are just as important as the use and consumption of energy on site.

- We cooperate closely with authorities and organizations. In addition, we inform the public and the community about the impact of our activities on the environment.

The management provides all required resources and information for our activities.

The management as well as employees are obliged to all laws and other duties in order to continually improve the protection of the environment and our energy conservation performance as well as the prevention of environmental adverse effects through consistent improvement of our environment and energy management system.

This environment and energy policy is confirmed by the management and obligatory for all the employees.

Our commitment to high environmental standards

It is absolutely natural for us to maintain high environmental standards. The efficient use of resources makes ecological as well as economic sense. We aim to use resources as efficiently as possible and reduce the emissions and the waste we produce. We reduce our use of raw materials by recycling our own copper scraps and that of our business partners. We are working to minimize our use of fresh water by recycling wastewater from different production areas and reusing it. We are reducing our use of natural gas by using waste heat from our foundries and production systems, with the goal of protecting natural resources.

ECO-FRIENDLY OPERATING SUPPLIES

We strive to purchase eco-friendly operating supplies so as to reduce the amount of hazardous waste we generate. We fully inform our customers about our products, enabling them to use them in an environmental friendly manner.

REGULAR AUDIT OF KME MANSFELD AND ITS SUPPLIERS

We work closely with local authorities during the implementation of new regulations and legal permits. We regularly assess and evaluate our environmental behavior as part of our annual environmental report. We also expect our suppliers and contractors to exhibit similarly positive environmental behavior and monitor this through appropriate certifications. In accordance with the new European chemical regulations - REACH - we ensure that only registered substances (metals) are contained in our products.

CONTEXT

European environmental standards for the copper industry

Companies producing copper and semi-finished copper products operate in compliance with European Union environmental regulations. Environmental permits are regulated by the **Industrial Emissions Directive 2010/75/EU**, which requires the use of the best available technology and sets emission limits.

As part of the regulations affecting the copper industry, it should also be noted that:

- Copper producers are partly affected by the Emission Trading Scheme (ETS) for the reduction of CO_2 emissions. Operators of large energy plants and energy-intensive industrial plants in Europe take part in the ETS. The ETS is an instrument of EU climate policy with the aim of reducing greenhouse gas emissions at the lowest possible economic cost by issuing a limited number of emission rights and then trading them on a market;
- All facilities are directly or indirectly affected by chemicals legislation, such as REACH 1907/2006.

Other regulations relevant to copper products include:

- EU Water Directive;
- Regulation (EG) Nr. 1272/2008 for Classification, Labelling and Packaging is of more interest for all manufacturers and also for manufacturers of industry in the EU. The CLP regulation contains uniform requirements for the classification, labeling substances and mixtures.

DEEPENING

REACH regulation

- REACH ("*Registration, Evaluation, Authorisation and restriction of Chemicals*") is a European Union regulation to protect people and the environment from potential risks from **chemicals**, while strengthening the innovative and competitive capacity of the chemical industry in the European Union.

- **Manufacturers and importers of chemicals** must process the data and assess the potential risk. This information is communicated to ECHA. This is where the possibilities for **safe use of the material** are defined and the measures necessary for the user to manage the risks are communicated.

- KME supplies copper and copper alloy products in the form of hot-rolled and cold-rolled sheets and strips, as well as pressed and drawn tubes, sections and bars, perforated parts and special products such as casting dies. All materials or preparations contained in the products **have been registered or pre-registered by KME** or another party upstream in the **supply chain**.

- KME is a **downstream user** of substances that are contained in copper or copper alloy products. The substances are subject to the registration procedure as phase-in substances, the use of which in the production of copper and copper alloy products is considered for registration.

- As far as **semi-finished products** in copper and copper alloys are concerned, according to REACH regulations, these products are not subject to the obligation to draw up a safety data sheet. Nevertheless, KME provides customers with product information documents by means of a **voluntary sheet**.

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.

KME Mansfeld has therefore taken measures to increase energy efficiency and has an energy management system based on the international DIN EN ISO 50001 standard. The certification was issued by Lloyd´s Register Deutschland GmbH, Cologne, Germany.

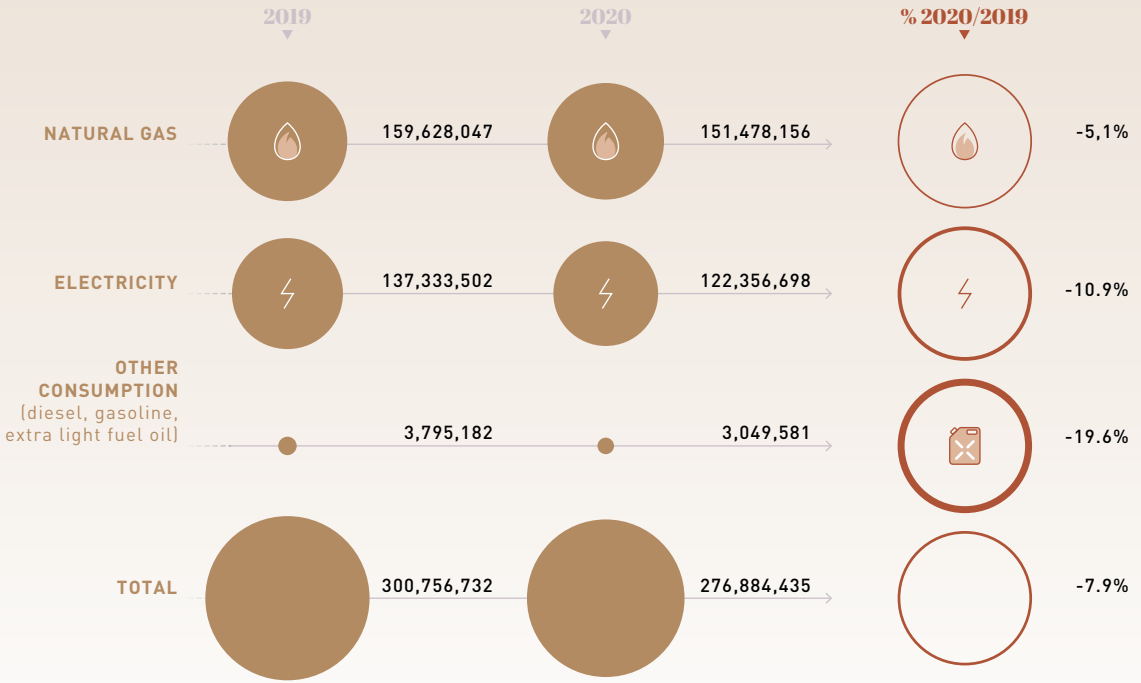
Energy efficiency to protect the climate

- 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, KME Mansfeld uses recycled copper in addition to copper from ore. And the company pays close attention to **energy conservation**, taking a wide range of measures to significantly increase its energy efficiency. KME Mansfeld has introduced an **energy management system** based on the international DIN EN ISO 50001 standard, which it applies consistently and successfully.

- We have already significantly improved the energy efficiency of our production by increasing the percentage of recycled material and integrating heat recovery into continuous manufacturing processes. In order to achieve lasting savings across the company, our energy management team regularly identifies other areas of potential and develops proposals on how to capitalize on them. Other important elements of the system include ongoing training and information for our working staff.

FIG 3.1 Energy consumption (kWh eq.)



ENERGY CONSUMPTION

KME Mansfeld uses **natural gas** and **electricity**. It also uses limited quantities of diesel, gasoline and extra-light fuel oil.

Electricity consumption amounted to **122,356,698 kWh**, while that of natural gas amounted to **151,478,156 kWh eq**. Other consumption (diesel, gasoline, fuel oil) amounted to **3,049,581 kWh eq**.

Overall, in 2020 KME Mansfeld consumed **276,884,435 kWh eq**. Compared to 2019 there was a reduction of 7.9%.

FIG 3.2 Energy consumption

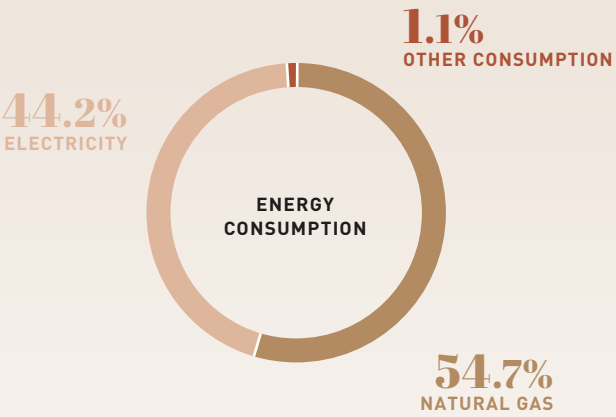
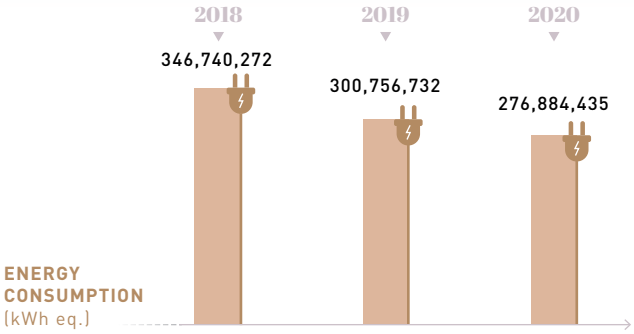


FIG 3.3 Total energy consumption (kWh eq.)



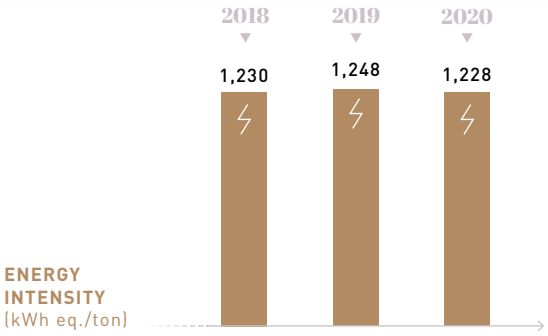
ENERGY INTENSITY

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**.

1,228 kWh eq was consumed per ton of product in 2020. Compared to 2019 there was a reduction of 1.6%.

FIG 3.4 Energy intensity



Methodological note

We operate a foundry for each production area (strip, sheets and plates, wire, bars and profiles) which converts copper cathodes and copper scrap into primary material for the subsequent production processes. Depending on the level and depth of production, these primary materials are refined in the subsequent processes to produce saleable semi-finished copper products. As part of the operating data acquisition and evaluations in the controlling and energy management area, the entire tonnages that are processed in our production facilities are recorded. These are simply added up for internal purposes.

Since, as described above, primary materials can run multiple times through different production facilities and production areas, depending on the production level and depth, the tonnage quantities are sometimes counted multiple times. The methodology used in this report, however, also for reasons of consistency with the other plants of the KME group, calculates the specific energy consumption as the ratio between energy consumption and the production output of the plant (225,459 tons).

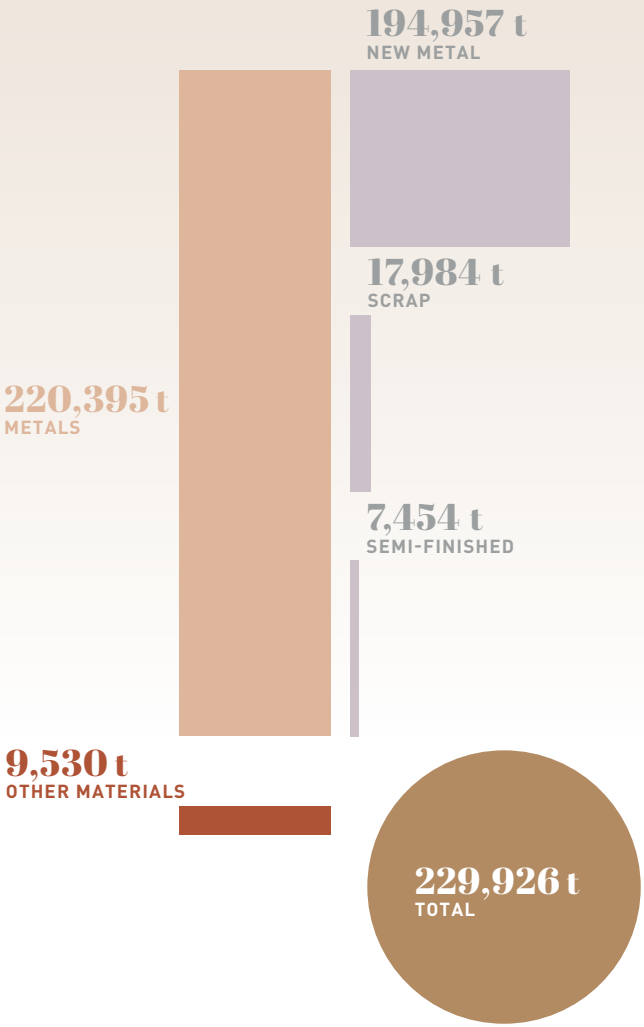
3.3 Materials

Efficiency in the use of material resources and the **use of recycled materials** are very important elements for the environmental industry sustainability. 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.

KME Mansfeld uses **copper scrap**, mainly through scrap procurement. KME Mansfeld owns the permit to recycle copper scrap.

MATERIALS (t)	YEAR 2019	YEAR 2020	% 2020/2019
NEW METAL	214,280	194,957	-9%
SCRAP	20,573	17,984	-12.5%
SEMI-FINISHED	8,307	7,454	-10.2%
TOTAL METALS	**243,160**	**220,395**	**-9.3%**
OTHER MATERIALS	**10,816**	**9,530**	**-11.9%**
TOTAL	**253,976**	**229,926**	**-9,4%**

FIG 3.5 Materials used (2020)



MATERIALS USED

229,926 tons of materials were used in 2020.
The materials used are **95.9% metals** (new metal, scrap and semi-finished)*.

**metals not used for the process are not included.*

FIG 3.6 Materials

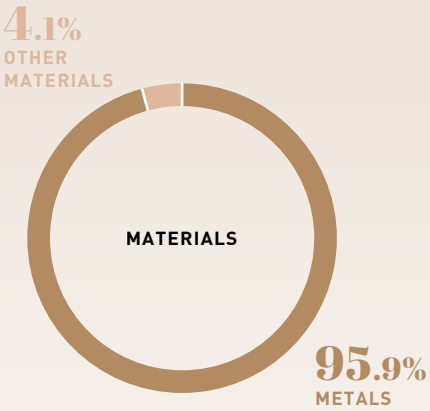
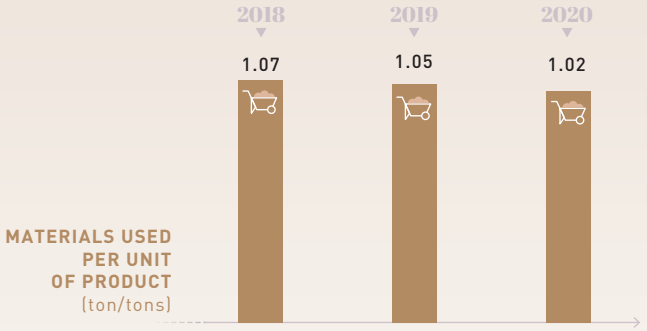


FIG 3.7 Materials used per unit of product



MATERIALS USED PER UNIT OF PRODUCT

In 2020, for every ton of product sold, 1.02 tons of materials were used. Compared to previous years there is a significant reduction.

RENEWABLE RAW MATERIALS

4,671 tons of materials used in 2020 (wood packaging, pallets, paper) can be classified as **renewable raw materials**. Of the total materials used, they make up only 2%, but net of metals the percentage of renewable raw materials rises to 49%.

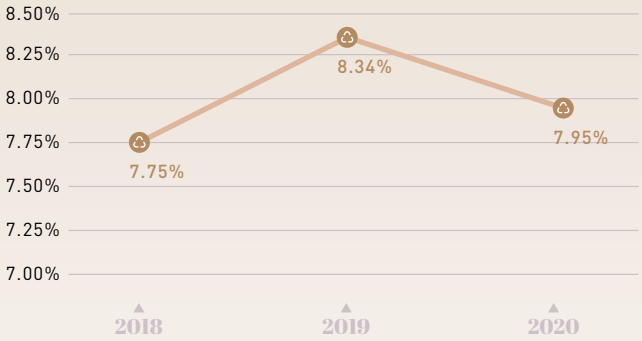
RENEWABLE RAW MATERIALS	YEAR 2018	YEAR 2019	YEAR 2020
TONS	12,245	6,090	4,671
PERCENTAGE OF TOTAL MATERIALS	4%	2.4%	2%
PERCENTAGE OF OTHER MATERIALS (NET OF METALS)	66%	56.3%	49%

RECYCLED MATERIALS

In 2020, the plant used 17,984 tons of **scrap** from external recycling processes.
Including the use of **recycled pallets** (289 tons), the total amount of materials from recycling is **18,273** tons, corresponding to **7.95%** of materials used.

It should also be considered that a portion of the semi-finished products used, which cannot be quantified exactly, is also made up of recycled materials.

FIG 3.8 % recycled materials used

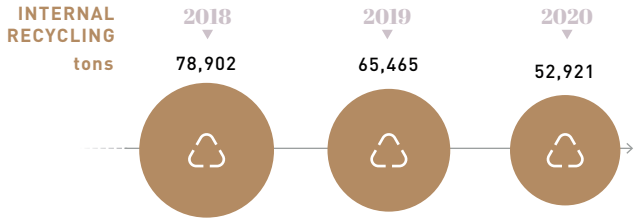


INTERNAL RECYCLING

From the point of view of the principles of circular economy, the most significant figure is that of internal recycling at the plant. In fact, a relevant part of metals, otherwise destined to as out as waste, is reused through **internal recovery processes** at the plant. **52,921 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.

Calculating also the quantity of metals re-introduced in the production cycle through internal recycling, the tons of metals processed are 273,316 (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 **25.7% of metals processed**.

FIG 3.9 Internal recycling



3.4 Waste

WASTE PRODUCTION

The amount of waste produced by the plant amounted to 3,917 tons. Compared to 2019, there is a 17.9% reduction.

FIG 3.10 Waste (tons)

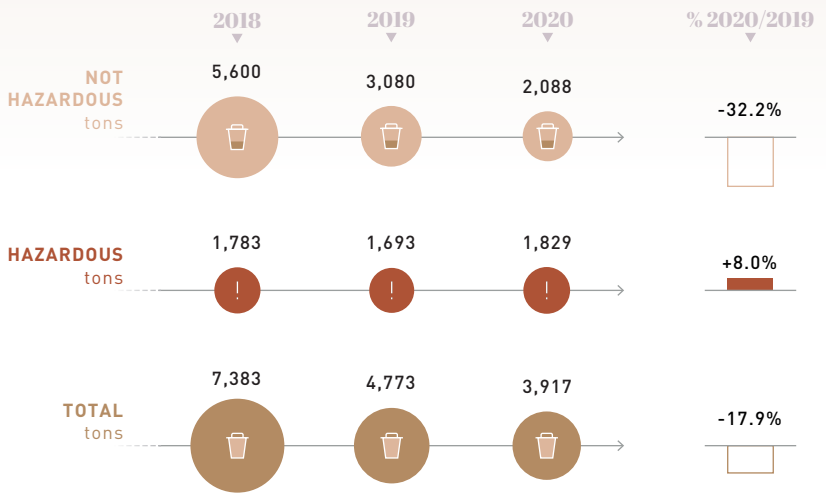
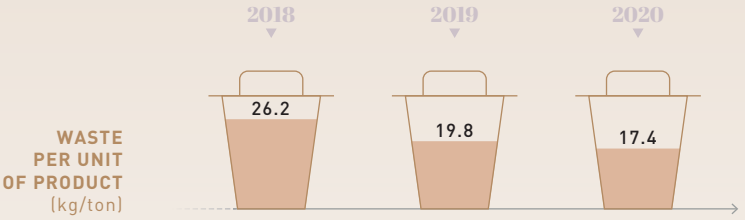


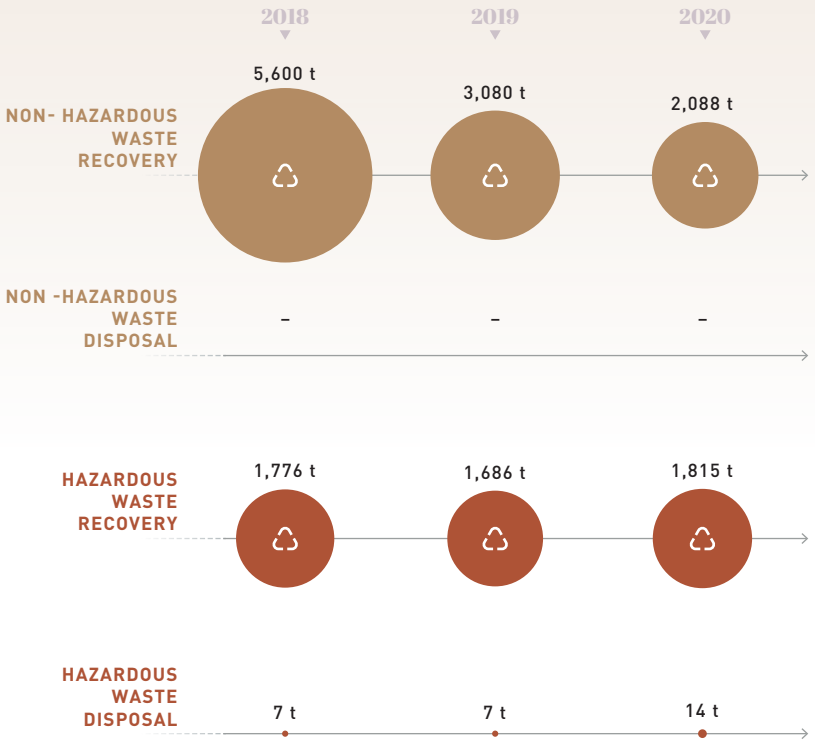
FIG 3.11 Waste per unit of product



WASTE PER UNIT OF PRODUCT

An important indicator is the amount of waste generated per unit of product. This indicator shows a significant reduction over the three-year period. In 2020 it is 17.4 kg per ton per unit of product. Compared to 2019, the reduction is 10.6%. Even more remarkable is the reduction compared to 2018: -32.4%.

FIG 3.12 Waste management



WASTE MANAGEMENT

99.6% of the waste produced by the company is sent for **recovery**. Only **0.4%** is **disposed in landfills**.

The company works to recycle as much waste as possible, especially production waste and packaging materials (wood and paper). Separate collection is organized in such a way as to allow maximum recycling of waste.

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.

CONTEXT

Towards a zero emissions Europe

The **Paris Climate Agreement** and the **United Nations Sustainable Development Goals** call for effective actions to reduce greenhouse gas emissions. A growing number of countries around the world are committed to this.

The European Union aims to achieve a **net-zero greenhouse gas** economy by 2050, becoming the first *carbon neutral* continent. The interim target set in the European Climate Act, passed in 2021, is to reduce emissions by at least 55 percent by 2030 compared to 1990 levels.

DEEPENING

Emission Trading

The European Union's **Emissions Trading Scheme (ETS)** is an essential tool to fight climate change and reducing greenhouse gas emissions.

It constitutes the world's first and largest carbon market. It operates in all EU countries plus Iceland, Liechtenstein and Norway. Limits emissions from more than **11,000 energy-using installations** (power plants and industrial plants) and about 600 **airlines** operating between these countries. It covers about **45% of the EU's greenhouse** gas emissions.

The ETS is based on the **Cap and Trade** principle.

A **limit** is set on the total amount of greenhouse gases that can be emitted by facilities included in the system. Within the cap, **companies receive or purchase emission allowances**, which they can trade with each other as needed. They can also purchase limited amounts of international credits from emission-saving projects around the world. The limit on the total number of allowances available ensures that they have real value.

At the end of each year, a company must surrender enough allowances to cover all of its emissions, or heavy fines will be imposed. If a company reduces its emissions, it can keep the allowances in reserve to cover its future needs or sell them to another company that does not have allowances.

Trading provides the necessary flexibility to ensure that **emissions are reduced where it costs the least**. A high carbon price also promotes **investment in clean, low-carbon technologies**.

How greenhouse gas emissions are calculated

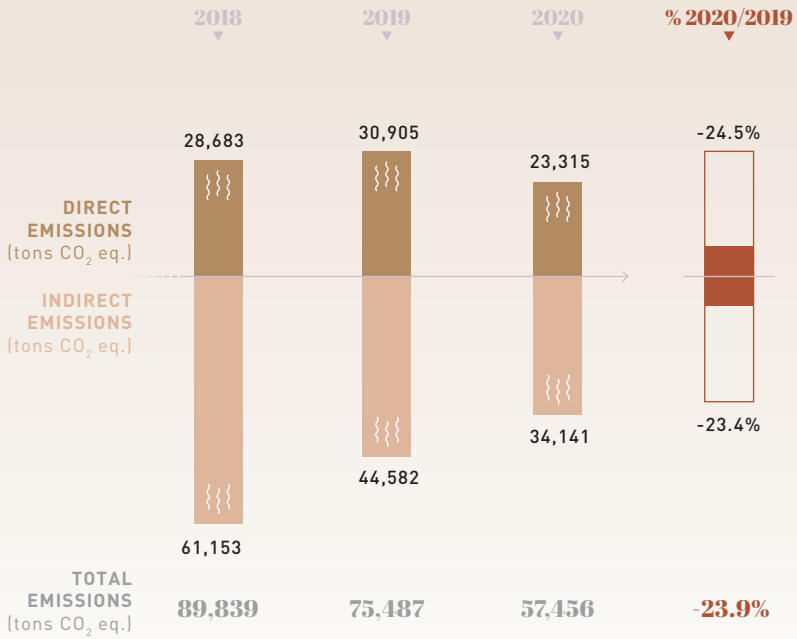
The calculation of GHG emissions is based on the GHG reporting system, which classifies GHG emissions into:

- 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.
Direct emissions from the use of charcoal are also reported separately because they are biogenic emissions, i.e. of biological or organic origin.
The calculation of specific emissions (CO_2 eq. per unit of product) is made with reference to total emissions (direct and indirect)*** net of biogenic emissions.

**In the case of KME Mansfeld, these are emissions from natural gas, diesel, gasoline, oil, and purge gas. For the calculation of direct emissions, reference is made to the values reported by the company net of offsets from EU ETS CO_2 certificates.*
***The calculation of indirect emissions from electricity consumption is made with reference to the greenhouse gas emission factors of the national energy mix.*
****Source of the emission factors and GWP (Global Warming Potential): 1) Carbon Dioxide Emissions for the German Atmospheric Emission Reporting 1990 - 2018; 2) Carbon Dioxide Emissions factors for fossil fuels of German Federal Environment Agency.*

FIG 3.13 Greenhouse gas emissions



TOTAL ANTHROPOGENIC EMISSIONS

Adding together **direct emissions** (from production at the plant) and **indirect emissions** (related to the production of purchased and consumed electricity), KME Mansfeld's total anthropogenic emissions in 2020 were **57,456 t CO_2 eq.**,with a **reduction of 23.9%** compared to 2019.

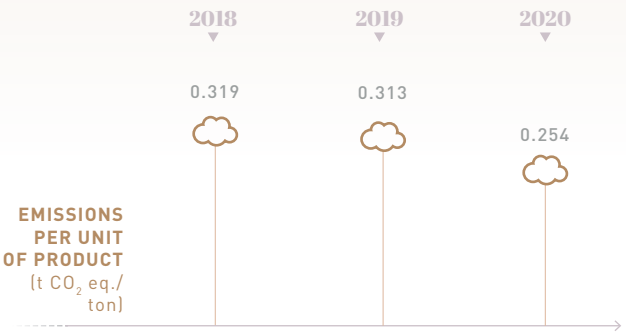
BIOGENIC EMISSIONS

KME Mansfeld also uses charcoal, which produces CO_2 emissions classified as biogenic emissions, as they are of biological origin. In 2020, these emissions were 1,158 tons. They had been 1,119 tons in 2019 and 1,123 tons in 2018.

SPECIFIC EMISSIONS

Emissions* per unit of product decreased significantly compared to previous years. **0.254 t of CO_2 eq. per unit of product** was generated in 2020, while it was 0.319 t of CO_2 eq. in 2018 and 0.313 t of CO_2 eq. in 2019. The reduction compared to 2019 is 18.8%.

FIG 3.14 Emissions per unit of product



*direct and indirect emissions, net of biogenic emissions

The emissions reduction over the last year corresponds to an amount of CO_2 issued in one year by more than

7,000 cars

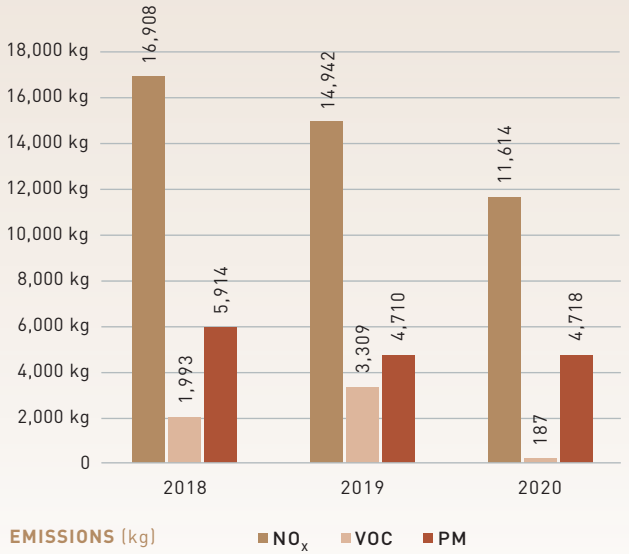
3.6 Other emissions

EMISSIONS

The emissions generated by the activities of the plant concern in particular **nitrogen oxides (NO_x), volatile organic compounds (VOC)** and **particulate matter (PM)**.

NO_x emissions were 11,614 kg (-22.3% compared to 2019). **VOC** emissions were 187 kg (- 94.3% from 2019) and **PM** emissions were 4,718 kg (+0.2%).

FIG 3.15 Emissions



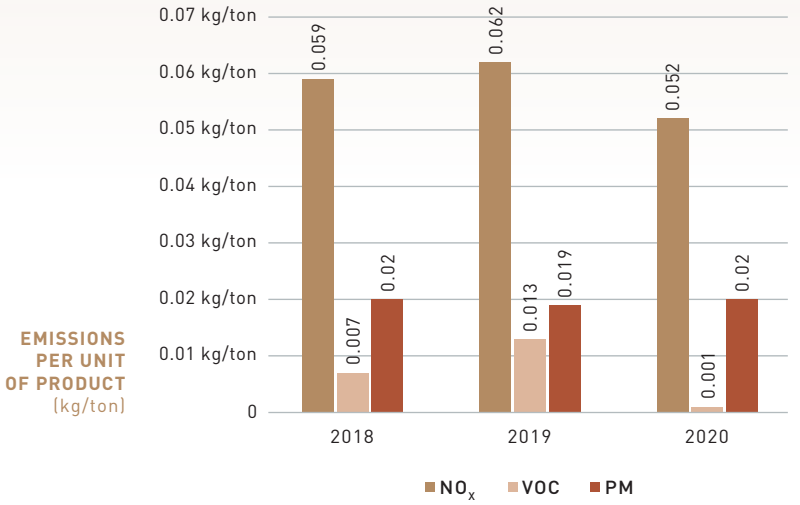
Air quality

Air quality is an important element for the environment and for human health. For this reason, increasingly stringent regulations have been introduced in recent decades to reduce emissions that cause air pollution. The main sources of this pollution are the industrial, transport and heating sectors. The first two sectors have been subject to regulations in all industrialized countries since the 1970s. In particular, industrial plants were the first to be subject to limits on emissions and to the obligation to adopt technologies to reduce the production of pollutants or to cull them before they are released into the atmosphere.

SPECIFIC EMISSIONS

Data on specific emissions, i.e. the amount of emissions per unit of product, show a reduction in specific emissions of NO_x and VOC, while there is a slight increase in PM.

FIG 3.17 Emissions per unit of product



3.7 Water




An amount of 1,076,523 m^3 of water was withdrawn for internal processes (cleaning, steam generation, rinse water, emulsion, sanitary uses, to feed cooling towers, for direct cooling) from the ecosystem.

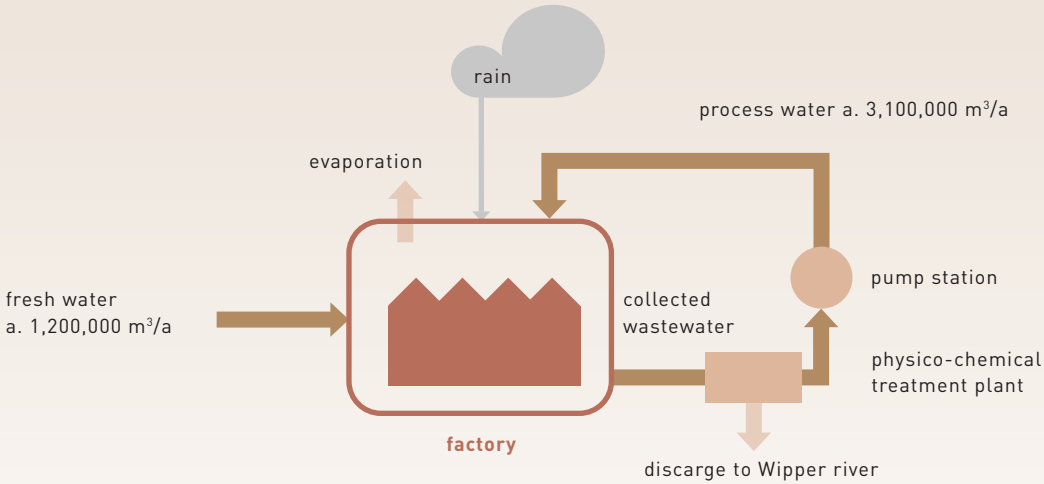
An amount of 565,175 m^3 of physico-chemical cleaned process water was lead back to the ecosystem (Wipper river) and 28,350 m^3 water conferred to third parties.

So in 2020 KME Mansfeld consumed 482,998 m^3 of water (+2.9% compared to 2019)

WATER WITHDRAWAL (m^3)	2020
SOURCE WATER	772,658
COLLECTED RAINWATER	297,000
GROUND WATER	1,000
PUBLIC PIPELINE	5,865
TOTAL	1,076,523

WATER (m^3)	2018	2019	2020	% 2020/2019
WATER WITHDRAWAL	1,175,972	1,123,499	1,076,523	-4.1%
WATER DISCHARGE	702,812	654,262	593,525	-9.2%
WATER CONSUMPTION	473,160	469,237	482,998	+2.9%

FIG 3.18 Water management KME Mansfeld



RECYCLING

The water-system of our plant is a big water circuit with one outlet (discharge of cleaned waste water to the Wipper river). All water-input (fresh water, water from third parties, rainwater, groundwater) is collected and transported as a mixture via water pipes. After usage it is processed in the central water treatment plant (so called ZBA). Here we clean the water from copper, nickel and other metals, oil and dirt. Afterwards the cleaned water is divided into 2 streams: one stream is recurrently discharged to the Wipper river, the other one flows continuously to the pumping station and back to the factory (water piping process). Fresh water is added via separate piping from outside.

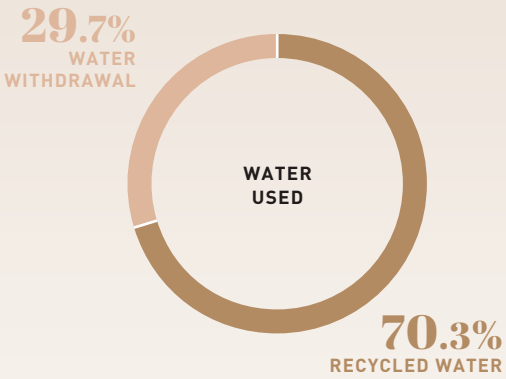
Thanks to this virtuous system, a considerable amount of water is recycled and reused in the industrial process. It has been calculated that **in 2020 the plant recycled and reused 2,570,539 m³**. This means that the total volume of water required, without these recirculation systems, would have been 3,657,062 m³. The prevailing share of water used in the process comes from recycling: in 2020, this percentage had been **70.3%**.

So this system of recycling avoids the withdrawal of significant volumes of water.

The volume of water saved in one year, thanks to recycling systems that allow it to be reused, is equivalent to that contained in more than

1,000 olympic-size swimming pools.

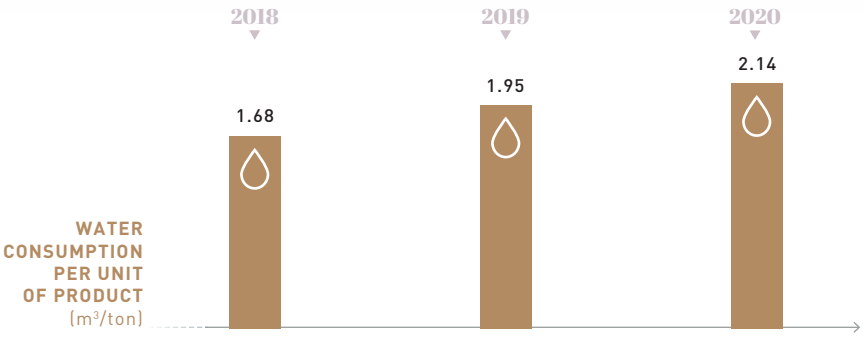
FIG 3.19 Water



SPECIFIC CONSUMPTION

For every ton of products, 2.14 m^3 of water were consumed.

FIG 3.20 Water consumption per unit of product

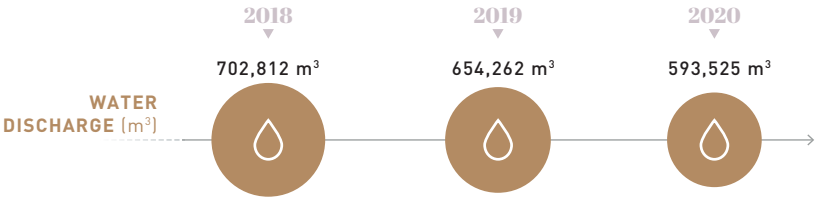


3.8 Purification and water discharge

The water used in the plant is discharged into the Wipper river after **purification** through chemical and physical treatment. Wastewater is managed using the best available techniques.

The values of pollutants in the wastewater are well within the limits specified in the permit.
With regard to copper, compared to an authorized limit of 0.5 mg/l, the plant releases water with concentrations not exceeding 0.32 mg/l.
The same is true for zinc: the limit is 0.5 mg/l, while discharged water reaches a maximum concentration of 0.44 mg/l.

FIG 3.21 Water discharge



3.9 Biodiversity

There are no protected areas or areas of high biodiversity within or adjacent to the operational site.

The only species classified as "vulnerable", among those listed in the IUCN red list and in the national lists that find their habitat in the area of operation of the plant, is the *oedipod caerulescens*.

The impact of the copper fed into the Wipper river is being examined.

4
Social sustainability

4.1 Social responsibility

The company, also thanks to its long history, has a strong relationship with the **local community** of the area in which it operates and with its **stakeholders**. Its presence has generated economic and employment benefits over time, and it is an integral part of the social and cultural fabric. KME Mansfeld is aware of its **social and environmental responsibility** towards the local area, its employees and the local community.

KME Mansfeld is one of the largest employers in Saxony-Anhalt with over a thousand employees. The company works to ensure respect for workers' rights, their health and safety, and professional development. As stated in the KME Group's code of conduct, the company considers the **protection of workers' health and safety** a top priority. KME Mansfeld is one of the recognized **training** facilities in Saxony-Anhalt, with activities aimed at both its own apprentices and people from partner companies.

KME Mansfeld maintains an open and collaborative relationship with **local communities** and the state of Saxony-Anhalt. It develops **initiatives for the local area**, from training to social support for people in need, and encourages employees to engage in volunteer work.

Health represents a high individual value and is of substantial importance for the KME group social sustainability

Corporate health management pursues this objectives:

- Reducing workloads and stress
- Relieving work-related illnesses and health hazards
- Permanently improving health and wellbeing at the work-place
- Maintaining the performance capability of employees
- Increasing employee motivation and satisfaction
- Ensuring the long-term success of the Group

In order to accomplish these ambitious targets, we offer our employees:

- An own in-house medical service
- Flexible working time models
- Company integration management
- Health and theme days
- Life coaching
- Physical activities
- Executive development

4.2 Employees

As of December 31st, 2020, KME Mansfeld had 1,134 employees (-1.2% compared to 2019).
During the year, 18 new employees were hired.

FIG 4.1 Employees

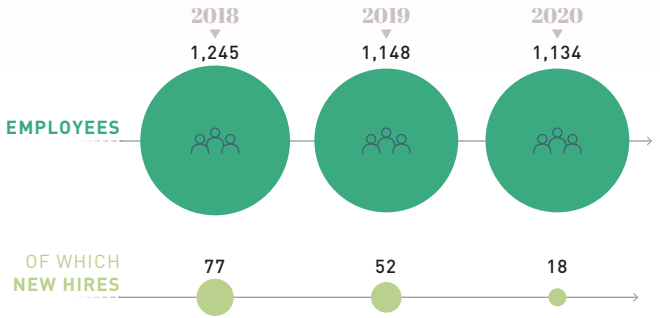


FIG 4.2 Employee structure

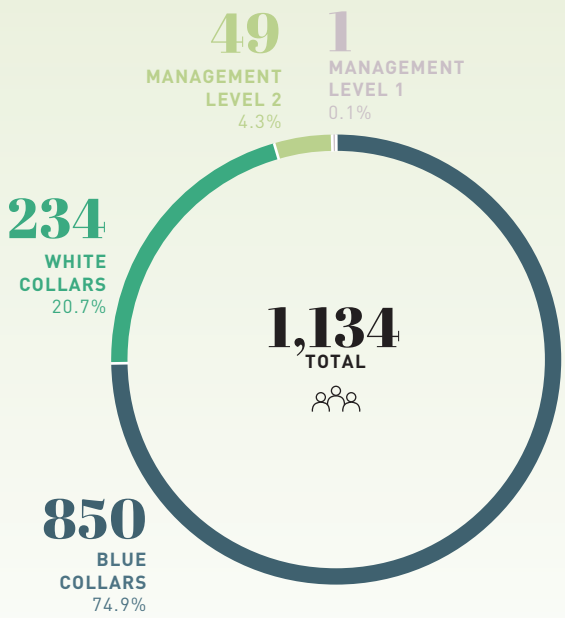
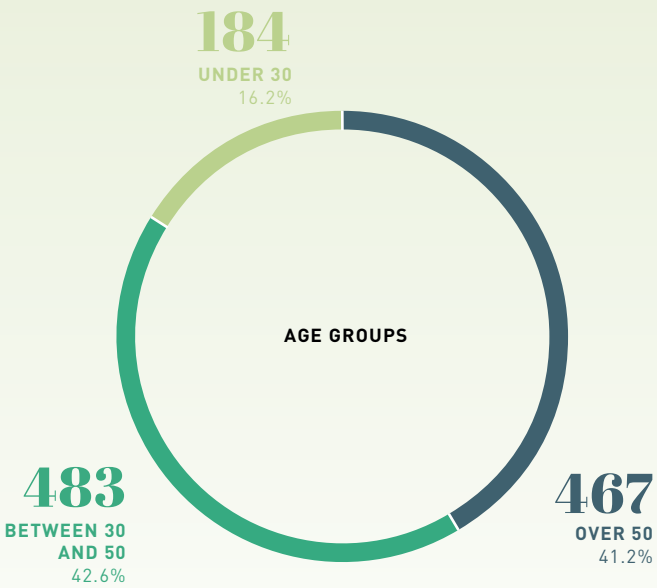


FIG 4.3 Age



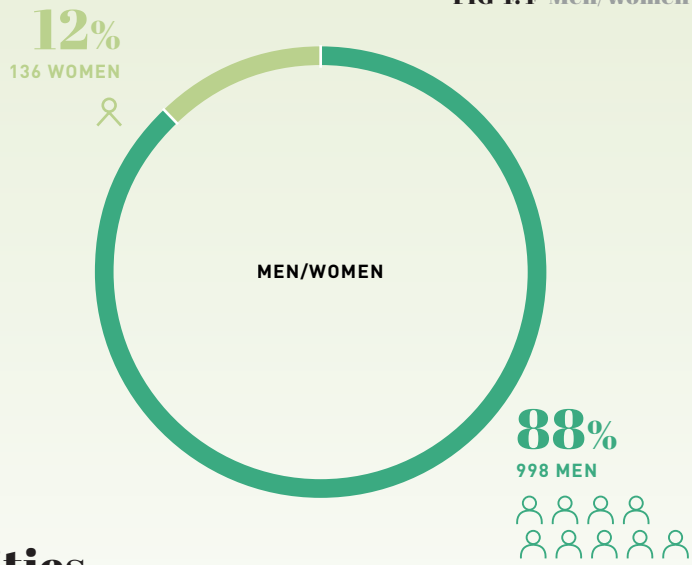
EMPLOYEE STRUCTURE AND DUTIES

- 850 blue collars (-0.4% compared to 2019);
- 234 white collars (-2.9%) ;
- 49 executives - management level 2 (+6.5%);
- 1 executives - management level 1 (-85.7%).

AGE GROUPS

- 184 employees (16.2%) are under 30;
- 483 employees (42.6%) are between 30 and 50;
- 467 employees (41.2%) are over 50.

FIG 4.4 Men/women



4.3 Equal opportunities

As of December 31, 2020, 998 men (88%) and 136 women (12%) worked at the company.

- There are 50 managers, of which 5 women (10%);
- Among the 234 white collars, there are 99 women (41.3%);
- Among the 850 blue collars, there are 39 women (4.6%).

No incidents of discrimination were detected or reported during the period examined.
According to the metal industry collective 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.

PARENTAL LEAVE

During the last year 32 staff members (23 men and 9 women) took parental leave, as provided for by law and the collective labor agreement.

4.4 Health and safety

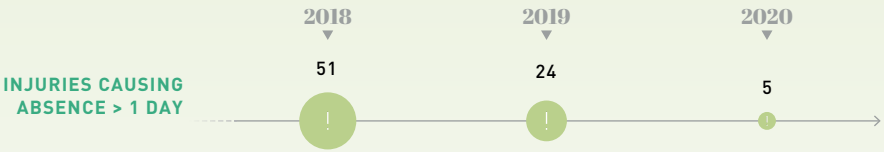
Employees' health and safety are key priorities. The main goal is to prevent accidents, work-related illnesses and inappropriate physical and mental exertion.

Workplace health and safety is an essential aspect of business management:

- The company monitors whether goals are being met and is committed to ensuring that each staff member is able to act with health and safety awareness.
- An occupational health and safety committee operates in the company with the management, the labour council, production managers, employee representatives, the company doctor and occupational safety officers.
- The company's occupational health and safety objectives are measurable and are evaluated through regular audits, inspections and management reviews.
- A company medical service conducts weekly on-site consultations. Pre-employment examinations are provided for new employees, including verification of good working fitness health and regular occupational health examinations for employees.
- The company promotes safety training courses for the staff.

KME Mansfeld is subject to the regulations of the **German Occupational Health and Safety Act**.

FIG 4.5 Injuries



A number of **health & safety agreements**, local or more general, have been signed with labor organizations:

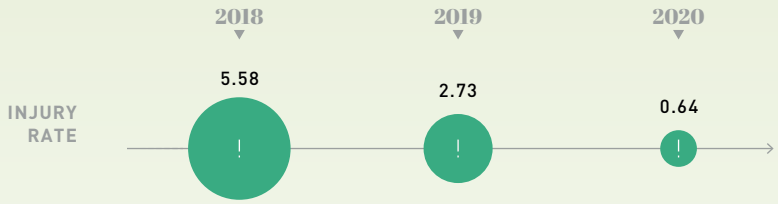
- 03/2010 Prevention and occupational health care;
- 02/2013 Non-smoking protection in the workplace;
- 07/2015 Occupational health and safety (framework agreement);
- 01/2019 Bonus for occupational safety.

Compliance with safety regulations is also required for **partner companies** and third parties.
KME Mansfeld takes this into account when choosing to collaborate with other companies.

ACCIDENTS

There were 5 injuries causing absence >1 day during 2020, a 79% decrease from the previous year.

FIG 4.6 Injury rate



Other indicators also show an improvement in health and safety conditions. In 2020, the plant recorded:

- an *Injury Rate* (Number of injuries × 200,000 / number of hours worked) of 0.64;
- a L*ost Day Rate* (Number of workdays lost due to injuries x 200,000 / number of hours worked) of 11.48;
- an *occupational disease rate* (number of occupational disease cases certified x 200,000 / number of worked hours) equal to zero.

FIG 4.7 Lost day rate

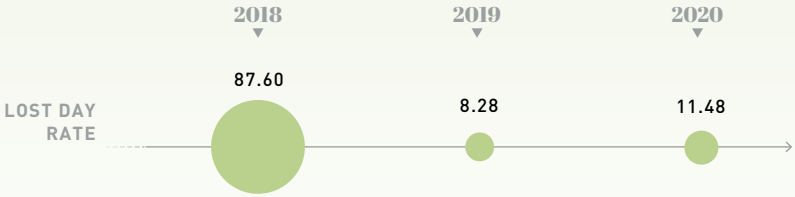
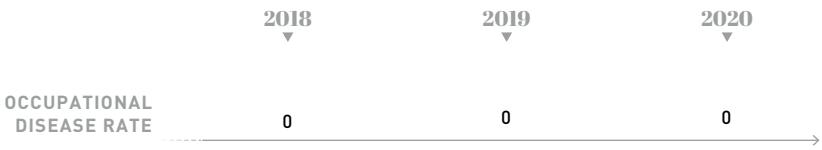


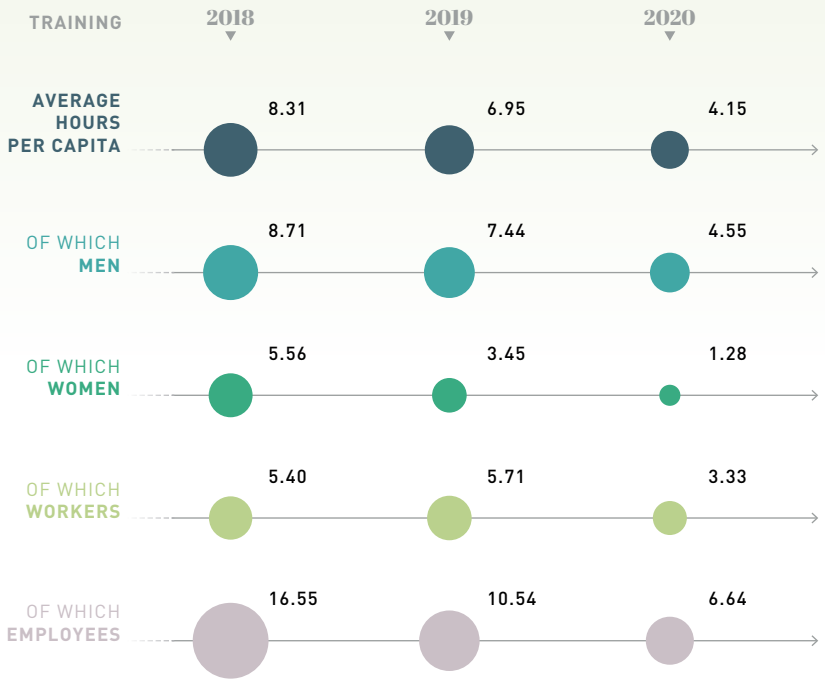
FIG 4.8 Occupational disease rate



4.5 Training

In 2020, hours dedicated to training averaged 4.15 per employee. Training activities are specifically aimed at growing professional skills and safety in the workplace.

FIG 4.9 Training



4.6 Suppliers

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

The corporate guidelines define binding standards for all companies operating within the KME Group.

In the **choice of suppliers**, criteria are adopted to qualify the potential partner on an **organizational, environmental and social level**. For the supply of all products or services, preference is given to environmental management system certifications (ISO 14001 or EMAS), safety management system certifications (ISO 45001), quality system certifications (ISO 9001).

Sustainability of business processes

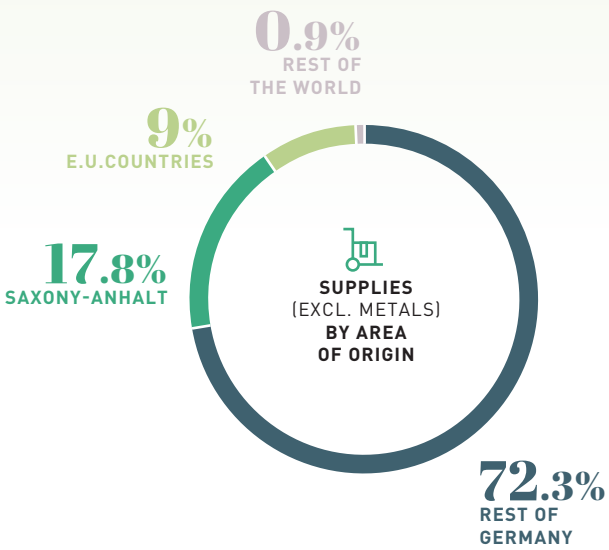
KME is committed to pursuing a sustainable strategy in the organization of its business processes, in particular with regard to

- Transparent customer orientation during product and process design;
- Observance of a corporate code of conduct;
- A healthy and safe working environment for workers 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.

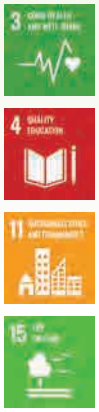
When it comes to sourcing raw materials, **KME does not use any metal from regions with armed conflicts**. Due to the complex supply chain and the many processes involved in metal transformation, KME - aware that it is not possible in every case to fully trace the materials acquired, especially with regard to recycled materials - when selecting new suppliers considers participation in EICC® and GeSI Conflict Free (an initiative of the *Electronic Industry Citizenship Coalition and Global e-Sustainability*) an essential requirement. The quality management system ensures continuous monitoring of supplier requirements.

- **Total economic value** (excl. taxes) of supplies of goods and services in 2020 : **980,991,569.71 euro**
- Economic value of supplies of goods and services net of metal and tax: **96,277,631.43 euro**
- Total number of suppliers:**1,628**
- Economic value of supplies (excl. metal and taxes) by area of origin:
  Saxony-Anhalt **euro 17,193,749.32** — 17.8%
  Rest of Germany **euro 69,581,761.28** — 72.3%
  E.U. countries **euro 8,670,338.47** — 9.0%
  Rest of the world **euro 831,782.36** — 0.9%

FIG 4.10 Supplies (excl. metal) by area of origin



4.7 Relations with the local community



For centuries, the region "Mansfelder Land" was shaped by a proud history of copper mining and fabrication. Our employees rely on the economic success of KME Mansfeld, as the cities of Hettstedt and Mansfeld prosper with us. In the aftermath of the reunion of East and West Germany, most of the old industry was closed down and many inhabitants of our region lost their jobs. During this phase, KME Mansfeld proved to be a reliable employer and today ranges in the top 5 biggest companies of the Saxony-Anhalt state.

The long lasting mining and industrial activities leaved its scars in the landscape. The environmental impact of our plant has been reduced significantly over the years. This effort will be continued and we will prioritize future investments together with our neighbours and the authorities.

- Financial support of local organisations and youth facilities;
- Participation in public events (company runs, Girls & Boys Days, vocational training fairs...);
- Cooperation with the local universities (scholarships, supervison of bachelor and master theses, practical training);
- Fundraising for local social projects;
- Stem cell typing campaign;
- Commissioning of a new biological treatment plant to improve the water quality of the local Wipper river;
- Construction of a noise barrier to reduce noise emissions towards the direct residents.

5
Economic sustainability

1,021
MILLION EURO
Turnover

152.2
MILLION EURO
Turnover net of raw materials

225,459
TONS
Sales

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 the working staff and the public administration. Particular attention is also paid to investments related to ecological transition and safety at work.

5.1 Results

In 2020, KME Mansfeld's turnover amounted to 1,021 million euro, a decrease of 10.7% compared to the previous year .

Turnover net of the cost of raw materials is 152.2 million euro*.

The economic value paid to employees as direct remuneration is 42.4 million euro.

The economic value distributed by the public administration (direct and indirect taxes) amounts to 6.2 million euro.

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

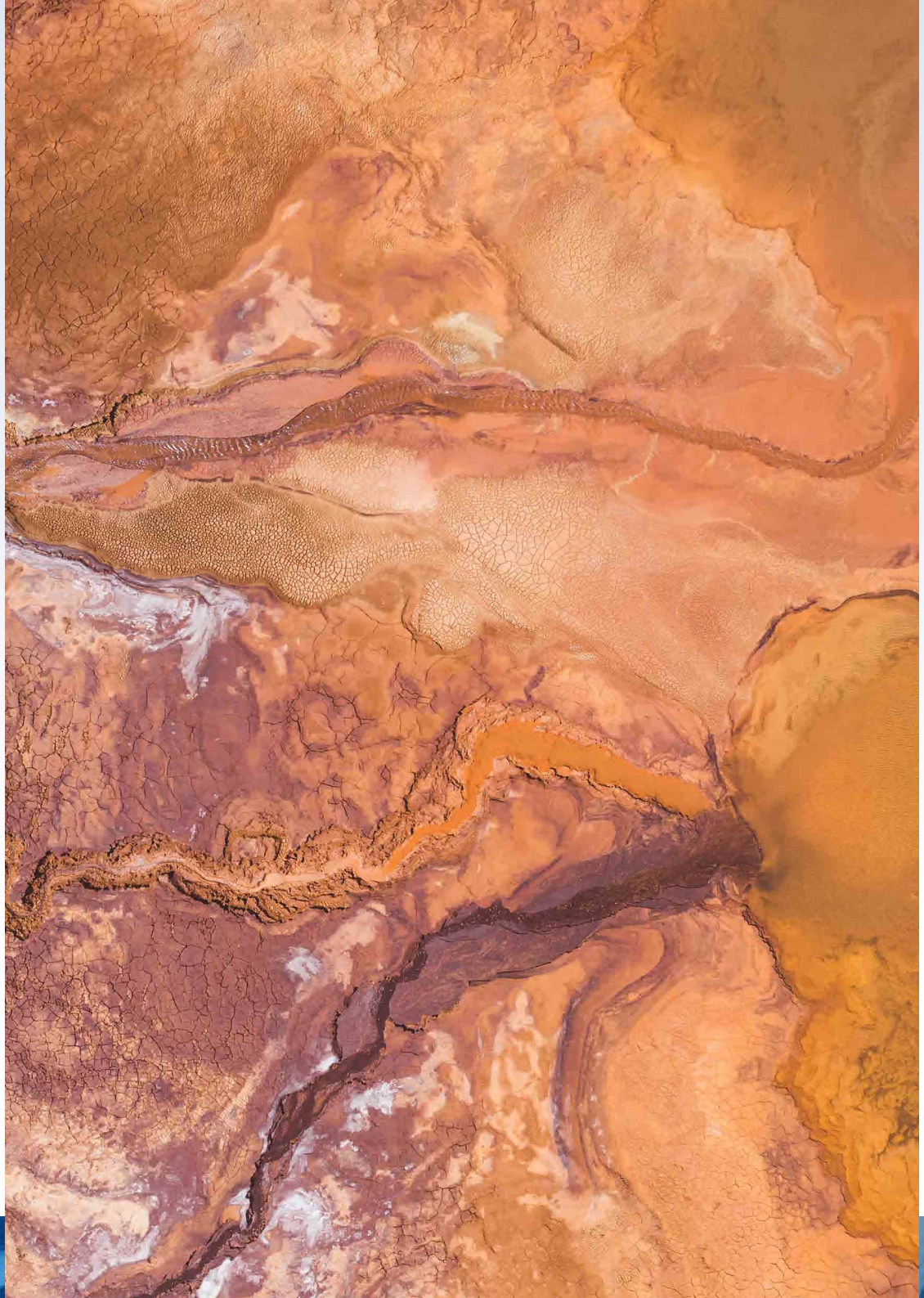
5.2 Investments

The economic value of investments in 2020 is 6,484,771 euro.

The implemented investments were both replacement investments, investments to increase the production depth as well as productivity. Significant investments were made in the strip area with a surface inspection system, and in the area of plates and sheets (modernising the milling centre). In addition there were further investments in renewing the technical infrastructure (compressors, central compressed air unit, electronic energy data recording, etc.) and in a SAP-supported planning system for sheet.

Economic value of investments in 2020 aimed in particular at environmental protection and ecological innovation (excerpt):

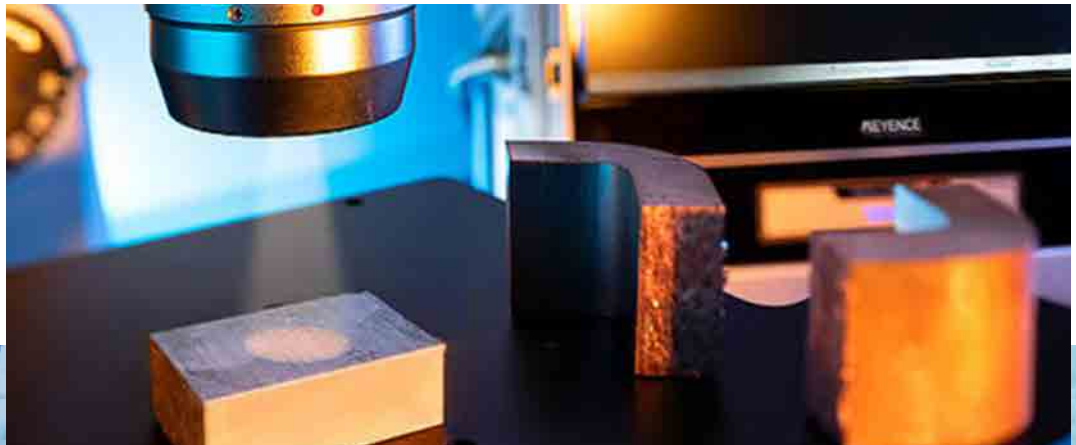
- Noise protection walls – 11,700.00 Euro
- Electronic energy data recording system – 308,700.00 Euro
- Modernisation of fire brigade boiler - 23,700.00 Euro
- Installation of service water filter - 17,200.00 Euro
- Renewal of the pipeline network – 12,200.00 Euro
- Replacement of stainless steel tanks Cooling water systems Alloy foundry - 17,000.00 Euro
- Modernisation of air conditioning systems – 7,800.00 Euro
- New acquisition of collection trays and waste bins -23,000.00 Euro
- Modernisation hot water tank Training centre - 9,900.00 Euro
- Modernisation of degreasing plant for pipes - 22,000.00 Euro
- Dust measurements DGW plant - 10,600.00 Euro



5.3 Research and development

For research activities, there is coordination at the KME Group level to avoid overlapping projects between all research departments (Fornaci di Barga, Hettstedt and Osnabrück) and to optimize the use of expertise.

Activities are application and process oriented, and are conducted in close collaboration with all production units, as well as with universities and other research centers.



Our commitment to innovation

The name of the street on which our headquarter is located - *Lichtlöcherberg* - reveals something about our origins. The narrow, often oval shafts that supplied miners with fresh air underground are called *Lichtlöcher* - holes of light. They may not have actually provided light, but they did provide oxygen. And fresh air was also needed for underground lighting, which was not electric in the beginning.

Fresh air is also an appropriate term for what we usually call **research and development**. In other words: replacing the old with the new, bringing freshness into something so we can dig deeper. Copper and its alloys are prehistoric metals. You'd be forgiven for thinking there's nothing left to discover about them. But there is. Working with our employees and partners, we are committed to creating pioneering solutions for the future, particularly in the areas of e-mobility and energy.

Research and development activities in the KME Group

- Research and development activities are of fundamental importance to KME in order to guarantee innovation, efficiency and quality. Research is aimed in particular at developing innovative materials, but also at 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.

- KME manages cooperation projects with companies, universities and research centers around the world and actively supports national and international research projects. It also participates in product and process standardization and is committed to support training.

- A team of 83 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 (additive manufacturing).

5G technology solutions

5G is essential for applications that require high throughput of large amounts of data, such as artificial intelligence (AI), smart home applications, and autonomous driving.

This requires special, high-performance solutions from a materials perspective. KME manufactures perforated strips for the production of radiant cables used in the 5G network. Radiant cables are basically coaxial cables in which slots are drilled into the outer conductor, allowing controlled amounts of electromagnetic energy to be radiated and absorbed by the cable.

Cell connectors

KME has developed an innovative, sustainable and efficient technology for connections in energy storage systems. This is a key technology for electric vehicles.

KME's cell connectors have already been tested according to LV 214 (Test Specification for German Automotive OEM Connectors) with very good results. The connectors are made of two different alloys. Thanks to the manufacturing process, it is also a very resource-efficient solution that allows process waste to be fed back into the recycling loop.

KME shapes the digital future of molds

Significant progress has been made in recent years towards the implementation of "Industry 4.0," with the development of digitized, automated and connected manufacturing processes. KME is supporting this progress with the introduction of the *MouldOrganiser*, an innovative sensor system that automatically records important mold operating parameters such as identification number, service time and copper thickness. In addition, the *MouldOrganiser* simplify the organization of data for monitoring mold performance, maintenance and procurement.

The basis of this new system is a custom sensor built into the copper plate that automatically records key statistics during casting and rework operations. This data is then transmitted via Bluetooth to a smartphone app that allows additional information, such as comments and photos, to be added. The data can then be transferred to a cloud portal where it is synchronized, encrypted and made accessible to authorized users. Integration with the cloud portal gives customers access to an automated assessment of their operational data, taking another step toward a "*Smart Mould*" solution. In addition, use of the cloud portal allows customers to download corresponding engineering drawings, inspection certificates and dimensional protocols for each mold.

By combining the *MouldOrganiser* with the cloud portal, registration is simplified with key information readily available to both the primary user and those in other departments, such as maintenance. This allows the potential for big data analytics and a much better view of mold performance.

Our projects

Research and development are essential elements at KME Mansfeld for maintaining the competitive capacity of the company and achieving competitive advantages based on the corporate strategy. All research and development activities are carried out with the objective to further develop the products to the benefit of our customers and to optimise our production processes under taking into account sustainability, environmental protection, conservation of resources and energy efficiency.

The development projects of KME Mansfeld that are assigned to the production areas primarily relate to application-oriented research and engineering technology development and notably concentrate on aspects of increasing the performance, on the process optimisation as well as also on focuses concerning the technology development.

MAIN PROJECTS

- Production of complex, highly thermally conductive copper components - CuAdd
- Implementation of high-pressure descaling on the Contirod® casting strand
- Tool development for special profiles
- "Process concept for chemical pointing of special profiles".
- Tube casting upcast with further multi-stage drawing of the cast tube
- Pressing of oxide-free copper bars.

"Leader in Innovation" award

KME is one of "Germany's Leaders in Innovation"·

The F.A.Z.- Institute - a subsidiary of the renowned "Frankfurter Allgemeine Zeitung" - has awarded KME with the certificate "Germany's Leader in Innovation".

On behalf of the **F.A.Z. - Institute**, *Prognos* analyzed the patent applications of 150,000 companies operating in Germany for the study "Germany's innovation leader". The patents were not only assessed numerically, but also in consideration of their relevance.

As an award-winning company in the field of 'alloys', KME belongs to the top group of innovative companies in Germany.

KME

DEEPENING

Research project on additive manufacturing

PROJECT PARTNERS

- KME Mansfeld, Hettstedt (Coordinator)
- Fraunhofer Institute for Microstructure of Materials and Systems IMWS
- Fraunhofer Center for Chemical-BiotechnologicalProcesses CBP

A joint project of KME Mansfeld (Hettstedt) and the Fraunhofer Institute for Microstructure of Materials and Systems (Halle/Saale)

The market for additively manufactured components is showing steady growth. While sales of 3D printed parts amounted to around USD 7.3 billion in 2007, sales of USD 27.3 billion are already forecast for 2023. Annualgrowth rates of over 16% are not uncommon in this booming market segment. The market for 3Dprinted metal components, especially for copper, currently represents only a niche with a high growth rate.

The research project involves risky technology and materials research for the additive production of complex, highly thermally conductive copper components.

The following scientific and technical targets are being pursued by the project partners.

SCIENTIFIC TARGETS

- Research into the structure-property relationships between the powder and the custom-made printed component using additive manufacturing.
- Testing the compatibility of different polymer systems (PLA, PA) with copper systems.
- Verification of the real behaviour of semi-finished products with heat flow simulation (FEM) on complex internally structured (honeycomb, triangle etc.) geometries.

Technology and material development for the additive production of complex highly thermally conductive Cu components - CuAdd

TECHNICAL GOALS

- Powder development and characterisation for highly thermally conductive systems with a copper content of more than 95%.
- Development of Inline-SLM for one-dimensional material characterization for high throughput screening.
- Development of a Cu-polymer compound and, derived there from, a Cu-polymer filament.
- Testing the printability of the Cu filament using FDM.

Construction and testing of a demonstrator with highly complex structure for cooling purposes.

At the end of the project, a complex geometric structure, manufactured in an additive manufacturing process, should be available as an exemplary prototype. With this geometric structure it is possible to evaluate the feasibility of replacing conventional technologies such as sintering, forging and extrusion.

PROJECT DURATION

December 2019 - December 2021

6 Circular economy

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 Mansfeld** aims to help accelerate the transition to a circular economy through the efficient use of materials and energy.

CONTEXT

Copper recycling in Europe

According to the International Copper Study Group, around 50% of the copper used in Europe comes from **recycling**. This helps to meet the growing demand for this metal (+250% since the 1960s) and, at the same time, to reduce the environmental impact of its production and ensureavailability for future generations.

Recycling saves energy and reduces CO_2 emissions. It requires up to 85% less energy than primary production. Worldwide, it saves 100 million MWh of electricity and 40 million tons of CO_2 per year.

More than **2 million tons of copper** are reused in Europe, from end-of-life products and directly recycled production scrap. The increase in recycling is due to technologies from European companies that enable greater efficiency in refining secondary scrap and processing for direct smelting of high-purity copper scrap.

6.1 Circularity indicators

Accelerating the transition from linear economic models to a circular economy requires that every company must 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 Mansfeld's 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.

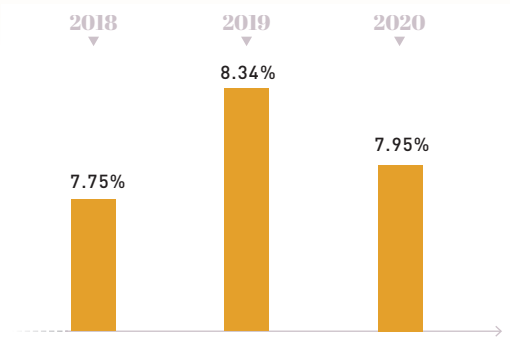
Recycled materials (copper scrap and wooden pallets) are 7.95% of total materials used in 2020.

Calculating the percentage of **metals** coming from **external recycling** (net of a share of semi-finished products that it is not possible to quantify precisely) in relation to the metals used, the rate of circularity is **8.16%**.

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 (52,921 tons in 2020) 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 is 25.7%**.

FIG 6.1 Recycled materials (%)



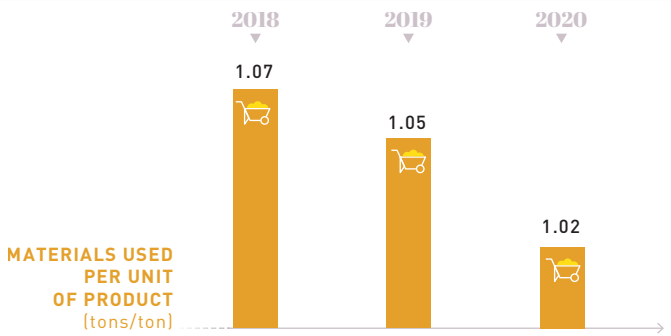
7.95% OF THE MATERIALS USED
IS EXTERNAL RECYCLING ORIGIN

THANKS TO INTERNAL RECYCLING
THE RATE OF CIRCULARITY OF PROCESSED METALS RAISES TO
25.7%

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 2020 it is equal to **1.02** tons/ton.

FIG 6.2 Materials used per unit of product (tons/ton)



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.

Data for the three-year period 2018-2020 show a strong improvement of the company in this direction, both in absolute and relative terms.

In fact, the amount of waste produced by KME Mansfeld fell from 7,383 tons in 2018 to 4,773 tons in 2019 to 3,917 tons in 2020.

Equally significant is the figure for the **amount of waste per unit of product**. In 2020, 17.4 kg of waste was generated per unit of product (ton), a lower figure than in previous years.

Another very important indicator is the percentage of waste **sent for recovery** instead of disposal in landfills. In 2020 it reaches **99.6%**.

less waste, more recycling

FIG 6.3 Waste (tons)

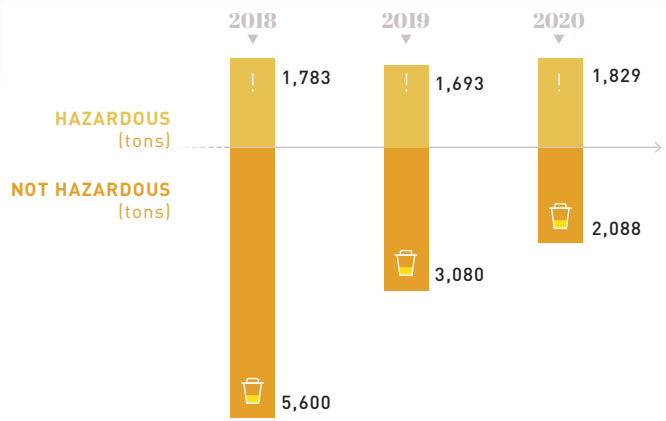
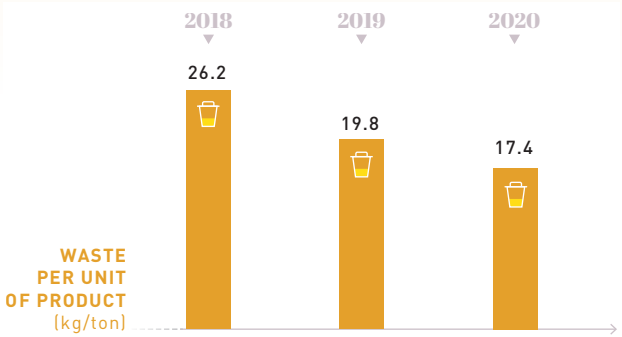


FIG 6.4 Waste per unit of product (kg/ton)



Water resources efficient use

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

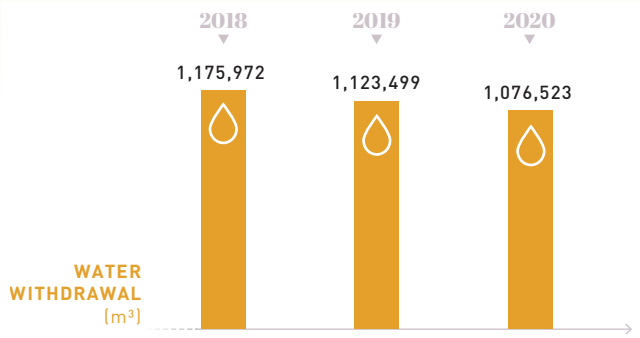
The data show a **progressive improvement**. In fact, we go from 1,175,972 m³ of water withdrawn in 2018 to 1,123,499 m³ in 2019 and to 1,076,523 in 2020. And it is significant that about 28% of the water used is rainwater.

The plant also uses a **water recycling system** that processed 2,570,539 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.

Finally, it should be noted that the discharged water, after being purified in a physico-chemical treatment plant, is released into the Wipper river, thus closing the cycle.

FIG 6.5 Water withdrawal (m³)



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, KME Mansfeld has already taken steps to improve energy efficiency for this reason.

In absolute values, there is a **7.9% reduction** in energy consumption in 2020 compared to 2019.

In terms of **specific consumption**, 1,228 kWh eq. was consumed per ton of products leaving the factory, a reduction of 1.6% compared to the previous year.

FIG 6.6 Energy consumption

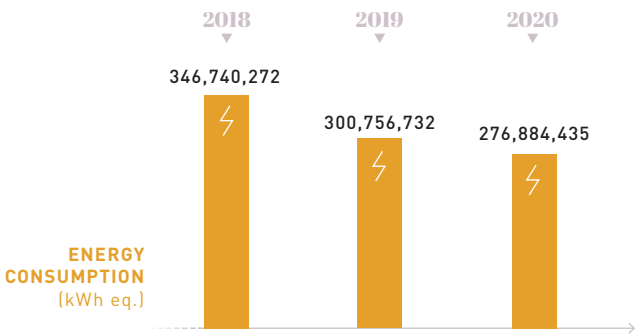
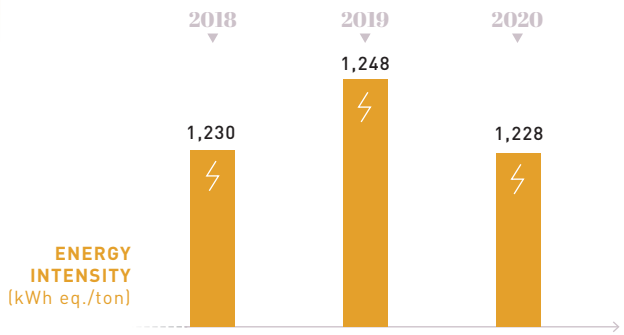


FIG 6.7 Energy intensity



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.
In absolute terms, total **GHG emissions** (direct plus indirect) **decreased 23.9% in 2020** compared to 2019.

Specific emissions, as measured in relation to output, were also down 18.8% from the previous year.

reduction of GHG emissions

FIG 6.8 GHG emissions

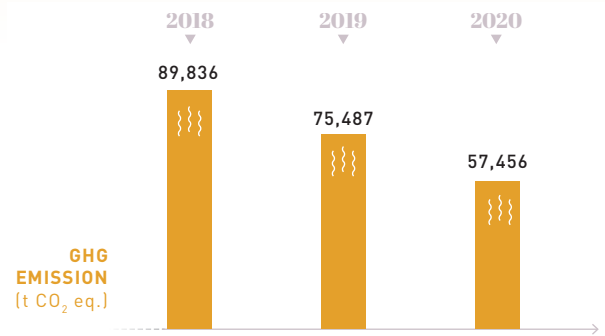
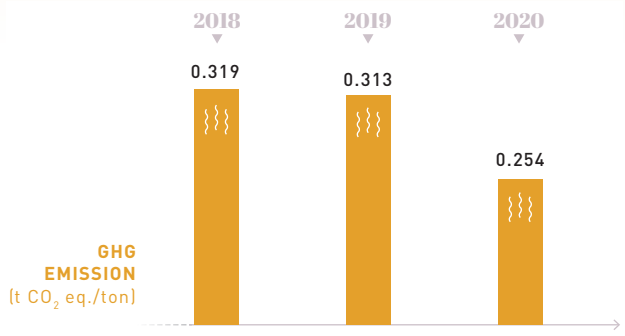


FIG 6.9 Emissions per unit of product



6.2 Projects

The promotion of a circular economy requires investments in process and product eco-innovation, new business models, technological innovations, industrial symbiosis projects and research and development activities.

As part of the research and development activities of the KME Group and KME Mansfeld, as mentioned in section 5.3, particular attention is paid to two topics closely related to the circular economy: efficiency in the use of materials and energy efficiency.

There are mainly two major acitivities which are focused to:

- Analysis and melting trials for electrification of continuous melting processes, which are currently focused to the use of natural gas;
- Importance of natural gas substitution by hydrogen for the industrial plant park in the semi-finished copper products industry (this project is focused to the impact of partial hydrogen admixture in natural gas and the effects on process stability and copper metallurgy).

7
Appendix

7.1 Copper: history, facts, curiosities

It was the first metal to be used by man since prehistoric times. The axe of Ötzi, the man who lived 5,000 years ago in the Alps, was made of copper. The Statue of Liberty, inaugurated in 1886, the symbol of New York, is made of copper. It is copper that makes the superconductors at CERN in Geneva, the world center of physics, work.

Copper is everywhere around us: inside TVs, lamps, cell phones, cars, pots, pipes, vases, electrical circuits, household appliances, sanitary equipment, architectural furnishings. And it can give life to alloys, such as bronze (with tin) and brass (with zinc).

How much do we know, however, about this valuable material? Perhaps very little. For this reason we want to close this report with some information and curiosities related to the history of copper and its uses.

Some historical notes

- Copper was already known to some of the most ancient civilizations. It is estimated that its use began at least 10,000 years ago.
- A native copper pendant dated to around 9500 BC was found in Šhanidar Cave in the Zagros Mountains (Iraq).
- More copper objects dating back to 7000 BC have been found in Turkey.
- Signs of activity in the refining of copper from its mineral oxides (malachite and azurite) date back to 5000 BC, a thousand years before those related to the use of gold.
- Copper and bronze artifacts of Sumerian origin have been found in city sites dating back to 3000 BC, and pieces produced with copper and tin alloy by the ancient Egyptians date to the same era.
- A pyramid houses an approximately 5,000-year-old copper alloy drain pipe system. The first copper water pipe dating back to 2750 BC can be seen at the Berlin State Museum. The use of copper in ancient China dates back to 2000 BC, whose bronze production reaches excellence around 1200 BC.
- In Europe, the use of copper is confirmed by the discovery of the Similaun Man (also known as Ötzi), the mummified body of a man dating back to 3200 BC found in the Alps, whose axe has a tip made of 99.7% pure copper. The high arsenic content found in his hair suggests that man's activities included producing copper.
- Towards the end of the 3rd millennium BC, at Saint-Véran (France) a technique was known for detaching a piece of ore, beating it and heating it at a copper mine at an altitude of 2,500 meters. The recovered historical artifacts, dating from an advanced phase of the Bronze Age (early 2nd millennium BC), include ceramic nozzles and dry stone structures that can be interpreted as a prehistoric metallurgical furnace.

Features

- The use of bronze, an alloy of copper and tin, was so widespread in history that it gave its name to a stage in the evolution of human civilization: the Bronze Age. The transitional period between the previous Neolithic and the Bronze Age is called Chalcolithic or Copper Age and is characterized by the coexistence of stone tools and copper tools.

Copper is the chemical element of atomic number 29 and its symbol is Cu. It is called "red gold" because of its coloring.
It is a metal of very high electrical and thermal conductivity, surpassed only by silver.
It is very resistant to corrosion due to a patina that forms spontaneously on the surface, first brown in color and then green or greenish-blue.
It is easily machined, as it is extremely ductile and malleable. It can be easily recycled and its scrap has a high salvage value.
It combines with other metals giving rise to numerous metal alloys (there are at least 400): the most common are bronze and brass, respectively, with tin and zinc; among others, cupronickel and aluminum bronzes.
In addition, copper is bacteriostatic, that is, it fights the proliferation of bacteria on its surface.

Did you know?

- The Latin word for copper is cuprum: this is the origin of the name in most modern European languages (copper in English, cuivre in French, koppar in Swedish, cupru in Romanian, Kupfer in German, cobre in Spanish...).

- The ancient Egyptians used the ankh symbol to indicate copper in hieroglyphics. It also represented eternal life.

- Copper has been associated to the goddess Venus in mythology and alchemy because of its shiny appearance, its use in the production of mirrors and because of its main mining area, the island of Cyprus. The symbol used by alchemists to represent copper is identical to that used by astrologers to represent the planet Venus.

- The oldest evidence of copper being used in plants is the pipe that carried water to the temple near the pyramid at Abusir, Egypt, and dates back to 2750 BC. It is currently preserved in excellent condition at the State Museum in Berlin, confirming the material's resistance to the test of time.

- The main mines are located along the Andes Mountains and the Rocky Mountains: the main mining countries are Chile, Peru, China, United States, Congo, Australia; other important mines are located in Indonesia, Papua New Guinea, Zambia, Canada, ex-USSR countries, Poland and Finland.

- The Statue of Liberty in New York is clad in over 80 tons of copper. Copper was an almost obvious choice: it is a material that can withstand New York's extremely aggressive and corrosive marine and industrial atmosphere.

- In automobiles, copper serves in the wires and windings that generate motion and transmit impulses. A Tesla Model S contains 50 kg of copper in the rotor of its electric motor, as well as other copper in the batteries.

- Copper is an excellent conductor of heat (about 30 times more than stainless steel and 1.5 times better than aluminum). This is why it is required in applications where fast and efficient heat transfer is needed, such as in heat exchangers, air conditioning, radiators, heat sinks in computers, radiant heating, solar collectors, etc.

- In the kitchen, copper pots and pans are valued for their ability to spread heat evenly, without creating hot spots or thermal inertia.

- The excellent conductivity of copper is also exploited in surgery. Copper coatings on medical scalpels conduct electricity to heat the blade, making it self-cauterizing. This is important for controlling bleeding during operations and removing damaged tissue.

- Copper protects millions of buildings around the world through a network of lightning rods: the electricity is then discharged through an earth ground, also made of copper.

KME

- Copper is a naturally occurring material in the earth's crust and in the fresh waters and oceans. Life on earth evolved in its presence, which is why organisms incorporate it and use it for their vital functions. Humans have about 1 mg per kg of body weight.

- One of the most spectacular and futuristic applications of copper is in the superconductors of the Large Hadron Collider at CERN in Geneva, the largest particle accelerator in the world (525 million km of copper wire!).

- Most printed circuit boards for electronic applications are made by laminating a thin sheet of copper to a flexible film and etching away the copper to leave thin lines that will carry the current. A new technology involves an ink to deposit only the copper lines on the circuit board, thus eliminating waste and lowering manufacturing costs.

- The workability and availability of brass makes it suitable for the production of musical instruments: although it is strong, it is bendable and workable at the same time: it can be hammered, cut, rolled, polished and spliced. It has considerable resistance to corrosion, although it is generally polished and lacquered to maintain its characteristic bright yellow color.

- Copper can be shaped even in complex forms and it transfers heat in a very efficient way: for this reason it is used to build stills and boilers, for the production of beverages and food. For this reason it is used in the production of beer and in distillation in general.

- Copper and its alloys are necessary materials for efficient energy generation, storage, transport and consumption. This is also true in renewable energy production. For example, a 1 MW wind turbine contains 3 to 4 tons of copper.

- The colors of the fireworks depend on the ingredients, and the blue comes from copper salts, introduced as an extremely fine powder. When the gunpowder explodes, the metal particles oxidize, creating the heat needed to excite the powders, which emit light.

- The Pantheon in Rome (dating back to the 2nd century A.D.), had gilded bronze coverings for the dome and the gallery, which were removed after 1,500 years to make the columns of Bernini's canopy in St. Peter's and the cannons of Castel Sant'Angelo: an example of historical recycling!

- Copper and its alloys are ideal for making coins, thanks to their resistance to abrasion, impact and corrosion. In addition, they are perfectly recyclable and assume - depending on the percentage content of other metals - different colors and extremely precise electrical and magnetic properties.

- The Euro was minted in copper alloys: CuAl5ZnSn1 for the 10, 20 and 50 cent coins, CuNi25 and CuZn20Ni5 for the white and yellow parts of the 1 and 2 Euro coins respectively.

- For many industrial applications, the performance of copper can be improved by the addition of one or more different metals. The best-known copper alloys are brass (copper-zinc), bronze (copper-tin) and copper-nickel. It is estimated that there are more than 400 copper alloys on the world market today.

- The furthest copper artifact in space is the (gold-plated) disk aboard Voyager 1, now in interstellar space more than 21 billion km from Earth.

- Bronze was even used by the ancient Romans as a material for valves in the water distribution network.

- Numerous scientific studies have shown that in the presence of copper piping there are fewer colonies of bacteria such as Legionella, responsible for serious and sometimes fatal pneumonia.

- According to the U.S. Geological Survey, since 1950 reports have regularly indicated that an average of 40 years of copper reserves and 200 years of available resources were available. Reserves are defined as deposits that have already been discovered, determined, and evaluated as economically viable; resources are defined as reserves, discovered and potentially viable deposits, and other deposits not discovered but predicted by preliminary geologic analyses.

(source: European Copper Institute)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7.2 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, 2020.
The report contains not only 2020 data but also data from the previous two years (2018 and 2019) 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 judgment.

- **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 with 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 company's production is to be understood as the quantity of products leaving the plant (output) during the year, while the figure relating to materials used refers to the quantity of materials entering (input) in the same period. The production figure may therefore include some quantities not actually produced during the year but already in stock.

7.3 GRI correspondence table

* Where this is an indicator deemed not relevant or not available, no reference paragraph is given

Profile

GRI INDICATOR	DESCRIPTION	PARAGRAPH *
Organization Profile		
102 - 1	Name of organization	2
102 - 2	Activities, brands, products and services	2.3
102 - 3	Location of management offices	2
102 - 4	Location of existing activities	2
102 - 5	Ownership and legal status	2.2-2.4
102 - 7	Order of magnitude of the organization	2.3
102 - 8	Information about 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	3.1
102 - 12	External initiatives	4.6
102 - 13	Membership in associations	-
Strategy		
102 – 14	Declaration of top decision makers	Letter to stakeholder
102 – 15	Main effects, risks and opportunities	-
102 – 16	Values, principles, standards and rules of conduct	2.5
102 – 17	Ethics Advisory Mechanisms	2.5
102 – 18	Governance structure	2.4
102 – 19	Delegating process	2.4

GRI INDICATOR	DESCRIPTION	PARAGRAPH
102 – 20	Executive level for economic, environmental and social topics	2.4
102 – 21	Consultation with stakeholders on economic, environmental and social topics	-
102 – 22	Composition of governance at the highest levels	2.4
102 – 23	Chairing the highest level of governance	2.4
102 – 24	Apex nomination and selection	2.4
102 – 25	Conflict of interest mechanisms	2.5
102 – 26	Role of senior governance figures in setting values and intentions	2.4
102 – 27	Cognition of senior governance figures on individual topics	2.4
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	2.4
102 – 31	Monitoring of economic, environmental and social topics	2.4
102 – 32	Role of senior governance on the sustainability report	-
102 – 33	Communication of critical issues	2.4
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	-

GRI INDICATOR	DESCRIPTION	PARAGRAPH
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	7.2
102 - 47	List of topics materials	-
102 - 48	Information review	-
102 - 49	Changes in reporting	-
102 - 50	Reference period	2020
102 - 51	Date of most recent report	2019
102 - 52	Reporting cycle	Annual
Management approach		
103 - 1	Explanation of the topic and its boundaries	-
103 - 2	Reporting requirements	-

Economic performance

GRI INDICATOR	DESCRIPTION	PARAGRAPH
201 - 1	Direct economic value generated and distributed	-
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	-
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	2.5
205 - 2	Communication and training on anti-corruption procedures	2.5
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

GRI INDICATOR	DESCRIPTION	PARAGRAPH
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 the 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	3.9
304 - 2	Significant impacts of activities, products and services	3.9
304 - 3	Protected or restored habitats	3.9
304 - 4	Species on the IUCN red list	3.9

GRI INDICATOR	DESCRIPTION	PARAGRAPH
Emissions		
305 - 1	Direct greenhouse gas emissions (scope 1)	3.5
305 - 2	Indirect greenhouse gas emissions (scope 2)	3.5
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	3.8
306 - 2	Waste and disposal methodology	3.4
306 - 3	Spills	-
306 - 4	Transport of hazardous waste	-
306 - 5	Water bodies affected by discharges and/or outflows	3.8
Environmental Compliance		
307 - 1	Non-compliance with environmental laws and regulations	-
Supplier environmental assessment		
308 - 1	Reporting requirements	4.5
308 - 2	Negative environmental impacts in the supply chain	-

Social performance

GRI INDICATOR	DESCRIPTION	PARAGRAPH
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 Relation		
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
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

GRI INDICATOR	DESCRIPTION	PARAGRAPH
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 labour risk	2.5
Forced labor		
409 - 1	Operations and suppliers at risk for forced labor	2.5
Security practices		
410 - 1	Security personnel trained in human rights	-
Rights of indigenous peoples		
411 - 1	Incidents involving violations of indigenous peoples' rights	-
Human rights assessment		
412 - 1	Operations subject to human rights controls	2.5
412 - 2	Human rights policy training	-
412 - 3	Investment agreements for the protection of human rights	-
Local communities		
413 - 1	Activities involving local communities	4.6

GRI INDICATOR	DESCRIPTION	PARAGRAPH
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 policies		
415 - 1	Public Contributions	-
Consumer health and safety		
416 - 1	Assessment of safety and health impacts	3.1
416 - 2	Incidents of service and product non-compliance	-
Marketing and labeling		
417 - 1	Product disclosure and labeling requirements	2.6
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	-
Socio-economic compliance		
419 - 1	Failure to comply with laws of socio-economic area	-

Where this is an indicator deemed not relevant or not available, no reference paragraph is given.

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THE REPORT HAS BEEN REALIZED
IN COLLABORATION WITH
GREENING MARKETING ITALIA S.R.L.

GRAPHICS AND LAYOUT
BIANCO TANGERINE

Sustainability report

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2020

Sustainability report × 2020
KME