



**Hirschvogel  
Group**

Traditionally innovative.

# SUSTAINABILITY REPORT

2022



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## DEAR READERS,

With this Sustainability Report, we are pleased to have the opportunity to outline how we set the course in 2022 to develop Hirschvogel into a sustainable company that lives up to its responsibility towards the environment, society, its business partners, and the workforce.

Our company is actively driving transformation by helping to shape the industry's shift towards carbon-free mobility. Already 72 % of our investments made last year have flowed into vehicle components that are independent of the combustion engine. By 2025, we aim to generate 50 % of our sales in this area, and more than 80 % by 2030.

And we are not only developing and producing components and products for the mobility of tomorrow, but are also striving for climate-neutral production – a task that is associated with high investments for a metal-processing company such as Hirschvogel. Here, too, we took important steps in 2022 by centralizing sustainability management and initiating a decarbonization strategy. At the same time, we are fulfilling our social responsibility towards both the public and our employees, and continuously evolving in this area.

As a family business, Hirschvogel has always thought in the long term. The Shareholders are not looking for a quick profit, but want to operate sustainably, placing great value on healthy growth. Hirschvogel strives to create positive added value – ecologically, socially, and economically. Due to this, the Hirschvogel Group is committed to the 17 United Nations Sustainable Development Goals and to the Paris Climate Agreement.

The increased focus of the Hirschvogel Group on sustainability as well as the centralization of sustainability management both stem from the realignment of the corporate strategy in 2021 and allow the company to focus on the big picture as well as to centrally steer Environmental, Social, and Governance activities. One of the products of the work in Corporate ESG, which was established in 2022, is this Sustainability Report for the year 2022 with reference to the GRI standard.

Our Sustainability Report provides a transparent overview of where the Hirschvogel Group stood in 2022. The current data forms the basis and the starting point of the Report. The focal topics resulting from a stakeholder survey indicate the direction of our future sustainability efforts on the basis of measurable targets.

For example, in 2019, we began mapping our annual carbon footprint for the entire value-adding chain of our products. Drawing on the guidelines of the Science Based Targets initiative, we have calculated the reduction targets that we want to achieve by 2030. In this way, we will make our contribution to the Paris climate target and systematically lead the Hirschvogel Group towards climate neutrality.

Our thanks go to all those who have contributed to this Sustainability Report. The diversity of sustainability topics, expressed in the motifs and colors of the 17 UN goals, is also reflected in this report, with experts contributing from the various departments and regions. The participation of numerous stakeholders in the materiality survey was particularly valuable. Customers, financiers, representatives from society, Shareholders, and leaders all provided information in personal interviews regarding the key issues they consider to be particularly relevant from their perspective. Likewise, more than 450 employees from all sites also took part in an online survey on the intranet. The core topics identified as especially relevant form the focal points of this Report.

We intend to further expand this dialog with stakeholders in the future. After all, it is only by working together that we will be able to tackle and effectively implement environmental, social, and economic improvements – across company, local, and national boundaries. If you have any questions or suggestions about sustainability at Hirschvogel or specifically about this Sustainability Report, please feel free to write to [sustainability@hirschvogel.com](mailto:sustainability@hirschvogel.com).

Jörg Rückauf, CEO



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As a family business, Hirschvogel has always thought long-term. The Shareholders are not looking for a quick profit, but rather do business sustainably and place value on healthy growth.

Jörg Rückauf, CEO

# 1 THE HIRSCHVOGEL GROUP

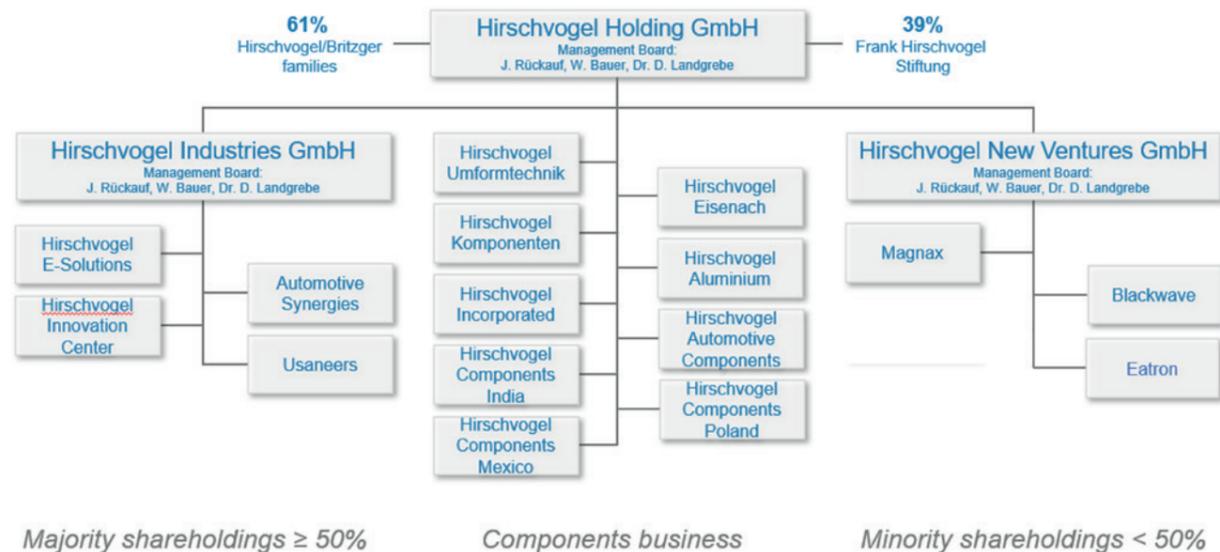
## COMPANY PROFILE

The lead plant of the Hirschvogel Group in Denklingen was founded in 1938 as a drop forge. The Hirschvogel Group is a development partner and manufacturing specialist for automotive components made of steel and aluminum as well as for product solutions in the areas of electronic systems and micromobility. This independent, family-owned group of companies employs around 6,300 people worldwide. Total sales in 2022 amounted to 1.4 billion euros. The parent company is Hirschvogel Holding GmbH, based in Denklingen, Upper Bavaria. It unites nine production companies and two affiliated companies for managing shareholdings. The portfolio ranges from powertrain components for all drive technologies to transmission, chassis, body, and frame components. The products find application in passenger cars, trucks as well as in the micromobility and bike sectors.

Today, the Hirschvogel Group is a global player. With nine production sites in Europe, Asia, and America – operating under the umbrella of Hirschvogel Holding GmbH – we, as a Group, are one of the largest global component manufacturers in the field of steel and aluminum forging as well as subsequent machining. The company is headed by the Management Board comprising Jörg Rückauf (CEO), Dr. Dirk Landgrebe (COO), and Walter Bauer (CFO).



Site overview of the Hirschvogel Group



**Shareholder and group structure of the Hirschvogel Group**

In the fiscal year 2022, the group structure was expanded via Hirschvogel Industries GmbH and Hirschvogel New Ventures GmbH to include the Hirschvogel Group shareholdings in future business companies.

In 2007, Dr. Manfred Hirschvogel and the family Shareholders of Hirschvogel Holding GmbH founded the Frank Hirschvogel Foundation, thereby setting the course for the future. The Foundation is dedicated to safeguarding the company as an economically independent and autonomous family business, as well as to its responsibility as a committed sponsor, both of innovative projects

in research and industry and of schools and vocational training institutes near the company plants. In this way, the Foundation builds bridges between aspiring young talents and experienced mentors to facilitate the transfer of knowledge, and between education and industry, by providing learners with practical experience through projects. The vision is to achieve equal opportunities for young people along their path to professional life. In addition, young, talented people are supported within the framework of selected programs. Thus, not only Hirschvogel as a company, but also the Foundation is socially active.

**ETHICS AND INTEGRITY**

Based on the Code of Conduct (version: March 2019), Hirschvogel is committed to its social responsibility worldwide. In particular, within the scope of our business activities, we bear responsibility for our own company with all its employees, for our customers and suppliers in the value chain, as well as for the environment and society. In accordance with the industry guidelines of the German trade association for steel and metal processing, WSM Wirtschaftsverband Stahl- und Metallverarbeitung e. V., Hirschvogel adheres to the common value base with regard to social and societal responsibility as well as fair competition. We are committed to:

- complying with the applicable laws and relevant regulations of the countries in which we operate
- following generally accepted ethical values and principles, in particular integrity, rectitude, respect for human dignity, and non-discrimination
- supporting the observance of internationally recognized human rights in accordance with the UN Human Rights Charter
- rejecting any form of discrimination. This refers, in particular, to discrimination against employees on the basis of ethnic origin, gender, religion or beliefs, disability, age, or sexual identity.
- ensuring occupational health and safety protection at the workplace within the framework of national and company regulations. Hirschvogel promotes the continuous improvement of the working environment.
- complying with labor standards with regard to maximum permissible working hours and remuneration, in particular with regard to the level of remuneration, in accordance with applicable laws and regulations
- protecting the employees from physical punishment and from physical, sexual, psychological, and verbal harassment, as well as respecting the employees' privacy
- observing the prevention of forced labor and child labor of any kind
- protecting natural resources for present and future generations

Hirschvogel rejects corruption and bribery, respects fair competition, and protects the company/trade secrets of others. To ensure that all leaders are familiar with the relevant laws and regulations, corresponding e-learning units must be completed every two years. The aims of these training sessions are to raise awareness and communicate the content of the anti-corruption policy as well as to provide guidelines on how to act correctly in various situations.

In the context of preparing for the Supply Chain Due Diligence Act, which shall apply to the Hirschvogel Group as of 01.01.2023, the Code of Conduct described above will be put to the test and, if necessary, revised and supplemented to incorporate new findings and extended due diligence obligations.



## PROCEDURE FOR GUIDANCE AND CONCERNS REGARDING ETHICS

Hirschvogel communicates openly and in a solution-oriented manner about the requirements of the Code of Conduct. Here, Hirschvogel pursues an open-door policy and expressly encourages its employees to report violations of the Code of Conduct or of the guidelines and standard operating procedures issued on its basis in accordance with the regulations at the respective site. Employees at the German sites can choose to report to the Management Board or the Chairman of the Group Works Council. Such reports enable Hirschvogel to optimize internal processes and thus also to avoid organizational deficiencies in the long term.

All cases are to be reported where there is at least a reasonable suspicion of a violation based on objective circumstances. The reports shall be treated confidentially. The committee called upon shall investigate the reported circumstances independently. After the investigation has been completed, its findings shall be communicated to the reporting party and, as a rule, to the affected party or parties in an appropriate manner.

## BUSINESS PERFORMANCE OF THE HIRSCHVOGEL GROUP WITH AN EXPLANATION OF THE GENERAL CONDITIONS IN THE PAST FISCAL YEAR 2022

As in the previous years, the fiscal year 2022 was dominated by the COVID-19 pandemic and the associated semiconductor crisis. In addition, the COVID-19-related lockdown in China and the outbreak of the Ukraine war had a significant impact on production and demand in the automotive industry. The combination of these influencing factors led to a highly volatile sales situation, involving, at times, significant reductions in customer call-offs and associated production activities. Accordingly, production capacity utilization was adjusted at some of the Hirschvogel Group's plants, resulting in short-time work for months at a time at some German locations. Despite the demand-related challenges, the planned sales volumes were achieved.

An analysis of the individual companies shows that all Hirschvogel plants in the core business were still able to exceed the results of the previous year, with an average sales growth of 24%, despite the negative influencing factors described above. This sales growth is also due to the partial transfer of price increases in the procurement of steel and energy. The participation of customers in these inflation-related increases in pro-

urement prices represents a continuous and major challenge for the Hirschvogel Group. In terms of sales development, Hirschvogel Aluminium GmbH in Mark-suhl as well as the plants in Poland, Mexico, and India were able in 2022 to exceed the previous year's level. On the one hand, these plants were less affected by supply bottlenecks and, on the other, they experienced a strong increase in their sales due to several new part ramp-ups.

As a result of consistently implementing the corporate strategy towards achieving a business independent of the combustion engine, the Hirschvogel Group has already been able to continuously expand its share of sales in electromobility-related business since 2019. In 2022, too, the Group succeeded in increasing this value and generating additional sales in this business area. The shift towards electromobility is also reflected in customer inquiries for components that are independent of the combustion engine. These component inquiries have been rising for years, reaching a new peak in 2022.



## 2 THE SUSTAINABILITY AMBITION OF THE HIRSCHVOGEL GROUP



Sustainability is not a topic for a few – sustainability concerns us all!  
Each and every employee can make a contribution to positively shaping the impact of our business activities on the environment and society.



Dr. Christian Hinsel, Vice President Corporate ESG & Hirschvogel Production System



“As a family-owned company, we think long-term and stand for sustainable, responsible business practices to generate positive added value for our company, our business partners and society – ecologically, socially and economically. To achieve sustainability, we do not only follow regulations, but also set a good example at all our sites and along our entire value chain.”

This is the sustainability ambition of the Hirschvogel Group, which is driven forward throughout the Group by centralized, company-wide sustainability management and close cooperation with internal as well as external stakeholders. To achieve this, the central sustainability department, Corporate ESG, started its work in April 2022 at Hirschvogel Holding GmbH, reporting directly to the Chief Operating Officer (COO). Corporate ESG at the Hirschvogel Group is headed by the Vice President and Head of Sustainability Management (ESG) & Production System.

The development and coordination of the strategic direction, the management of company-wide activities, and monitoring the implementation thereof, is carried out in the Transformation Committee, which meets every six weeks and is the strategic steering committee for the transformation initiatives of the Hirschvogel Group (participants: Management Board, Vice Presidents for Sales/Development/Purchasing/Controlling/Human Resources/Operations/ESG). The Head of ESG coordinates current sustainability activities and issues with the COO via a fixed monthly meeting.

Sustainability management enables Hirschvogel to fulfill its sustainability ambition by means of Corporate ESG, which

- points the way towards sustainability,
- initiates and drives action,
- brings together and networks the expertise, activities, and interests of the internal and external stakeholders at the intersection of E, S, and G,
- ensures consistent, targeted implementation, communication, and reporting regarding sustainability.

Corporate ESG is also responsible for Corporate EHS (Environment, Health & Safety) and Energy Management.\* Corporate ESG organizes the management and implementation of activities via an interdisciplinary Sustainability Committee. This comprises experts from the relevant corporate departments at Hirschvogel Holding GmbH. The Committee ensures the exchange of information between the departments and the sustainability management team, and implements sustainability activities via process managers. In 2023, the dialog with the Sustainability Committee will be intensified and will take place regularly every two months. Plans are also in place to expand the Committee to include regional and site managers in order to anchor the topic of sustainability internationally at the Hirschvogel plants.

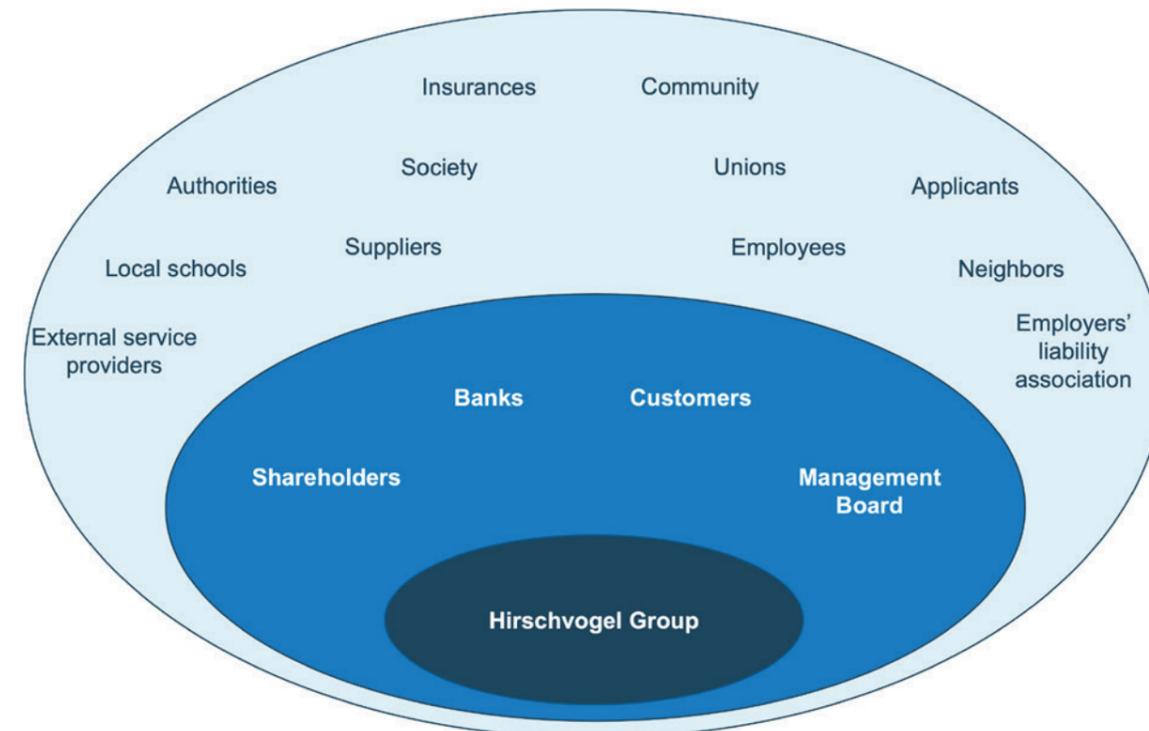
Sustainability management evaluates the overall ecological and social impact of the Hirschvogel Group and its compliance with legislation and ethical corporate governance, in line with the following principles:

- **Transparent:** We put all data “on the table” and address deviations.
- **Objective:** We evaluate, advise, and communicate on the basis of facts.
- **Holistic:** We evaluate sustainability in a holistic way, not just on the basis of individual factors.
- **Networked:** We communicate and work closely together with the relevant internal and external stakeholders.
- **Open:** We are open to innovation and willing to break new ground.

\*As of 01.01.2023, Energy Management will be spun off due to its current relevance, becoming the independent Corporate Energy department which, in closed collaboration with Corporate ESG, shall continuously advance the Hirschvogel Group's energy supply towards renewable energy sources, thereby promoting decarbonization.

Sustainability is not an issue for just a few people, but is one that affects everyone. That is why Sustainability Management sees it as an essential task to involve all internal and external stakeholders. Only when all stakeholders make their contribution to the continuous improvement of sustainability will Hirschvogel become wholly sustainable. In order to identify the topics that are relevant for Hirschvogel and for the stakeholders, a materiality analysis was carried out for the first time

at the end of 2021/beginning of 2022. This serves to determine the most important sustainability topics for Hirschvogel and its stakeholders. The foundation for the materiality analysis was a questionnaire based on the Sustainable Development Goals (SDGs) of the United Nations. To conduct the analysis, internal and external stakeholder groups were first identified and formed. The following stakeholder groups were taken into account:



An online questionnaire was made available to most stakeholder groups, while interviews were conducted, where possible, with stakeholders who have a significant influence on Hirschvogel's business. These included banks, the Management Board, Shareholders, customers, and Vice Presidents (Plant Managers and

corporate functions). In a first step, the most important topics were identified internally and a catalog of questions was compiled. This catalog of questions was then agreed upon with the relevant departments and consolidated. The following topics were included to cover sustainability interests in a comprehensive way:

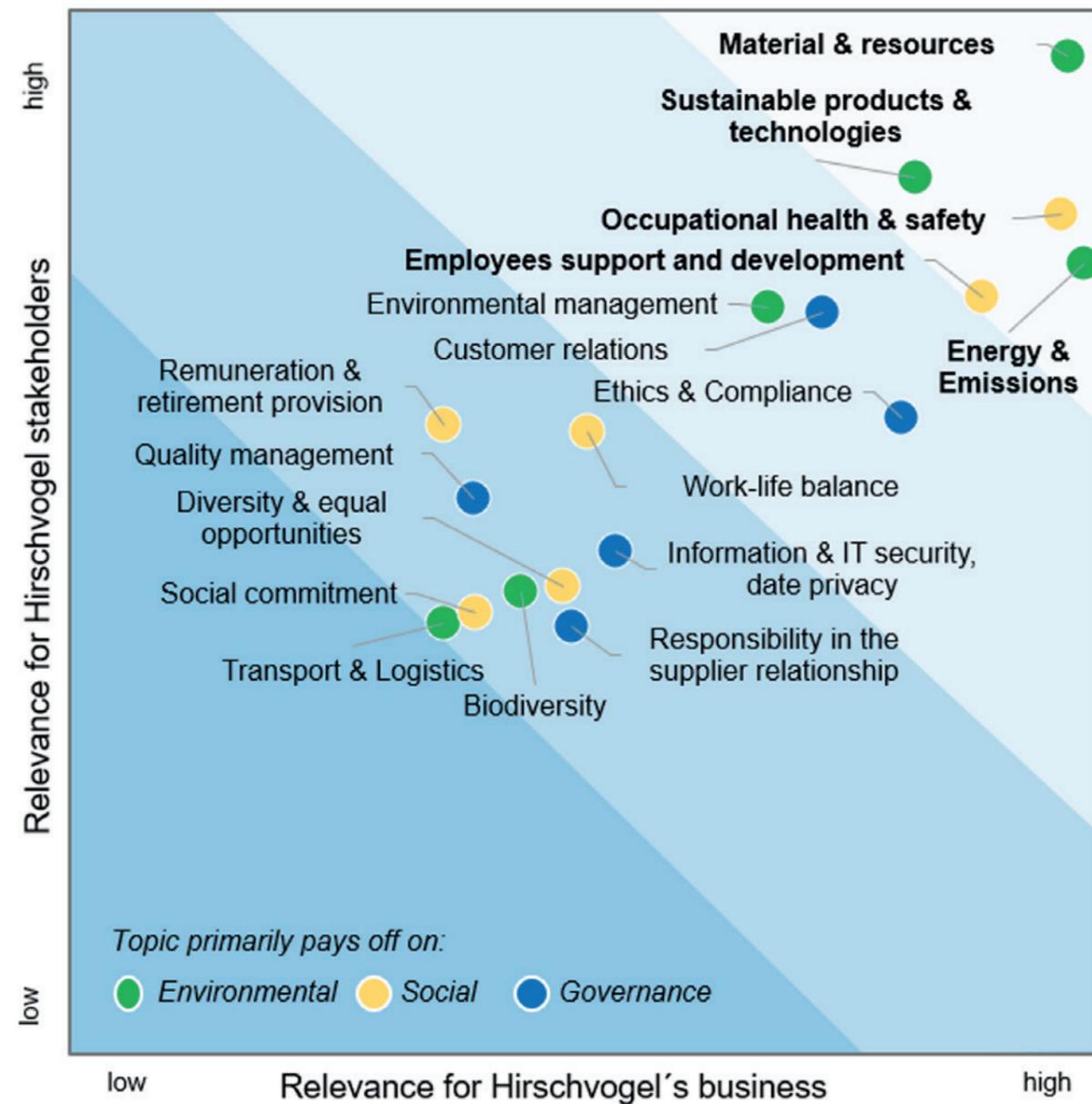


The resulting online questionnaire was made available in different languages to all employees as well as to 103 external partners. A total of 487 people took part in the online survey between November 1, 2021 and February 4, 2022.

After evaluating the survey, the second step was to present all topics in a materiality matrix, resulting from the two axes of stakeholder and business relevance. This provided a graphical representation of how the sustainability issues were ranked. A threshold value was then used to identify the key topics from a point cloud.

following aspects were rated as particularly relevant by all stakeholders surveyed:

- Sustainable products and technologies
- Occupational health and safety
- Material and resource efficiency
- Employee advancement and development
- Energy & Emissions



The materiality matrix of the Hirschvogel Group

Even now that the materiality analysis has been successfully implemented, Hirschvogel continues to uphold the dialog with stakeholders in order to detect changes, implement improvements, and to always stay up to speed regarding all sustainability topics at the company. This is achieved through direct communication with the stakeholders, as well as through employee surveys, rating platforms such as CDP and Ecovadis, and via many other channels. Concrete examples of stakeholder dialogs in 2022 included:

- An ESG workshop on the 17 UN Sustainable Development Goals attended by 70 leaders at the Strategy Conference in Bad Wörishofen (July 2022)

- Dialogs with regional providers of renewable energy sources (solar, wind, biogas) in the Landsberg am Lech district (August 2022)
- Dialog between Corporate ESG, the Hirschvogel Business Network, and the Rotary Club Landsberg am Lech on the opportunities and challenges for working women in Landsberg am Lech (October 2022)
- An ESG workshop on decarbonization attended by 30 leaders (Management Board, Vice Presidents, and Directors) at the Strategy Conference in Garmisch-Partenkirchen (December 2022)



Impressions of the ESG workshop on the 17 UN Sustainability Goals



## REPORT PROFILE

With this Report, Hirschvogel presents its activities and performance in the area of sustainability in a transparent manner for its stakeholders. The focus of Hirschvogel and its stakeholders is always on the continuous improvement of sustainability performance. The contents have been compiled in accordance with the standards of the Global Reporting Initiative (GRI). The Sustainability Report covers all plants of the Hirschvogel Group's core business.

This report was compiled with reference to the GRI standards and describes the approaches selected within the reporting period from January 1, 2022 to December 31, 2022.

In future, the generation of a Sustainability Report in accordance with the GRI standard will take place in a yearly cycle. The most relevant part of this option for Hirschvogel concerns the disclosure of key topics based on topic standards. The responsibility for sustainability topics lies with the Management Board of Hirschvogel Holding GmbH.

These are:

- Hirschvogel Holding GmbH
- Hirschvogel Umformtechnik GmbH
- Hirschvogel Komponenten GmbH
- Hirschvogel Aluminium GmbH
- Hirschvogel Eisenach GmbH
- Hirschvogel Components Poland Sp. z o.o.
- Hirschvogel Automotive Components (Pinghu) Co., Ltd.
- Hirschvogel Components India Pvt. Ltd.
- Hirschvogel Components Mexico S.A. de C.V.
- Hirschvogel Incorporated

| Rating                        | Scale   | Assessment 2021 | Assessment 2022 |
|-------------------------------|---|-----------------|-----------------|
| CDP Klima                     | A to D-<br>(A = best value & D- = worst value)          | B               | B               |
| 2022 ecovadis                 | Platinum to Bronze<br>(Platinum, Gold, Silver & Bronze) | -               | Silver*         |
| NQC SUPPLIER ASSURANCE        | 0% to 100%<br>(0% = worst value & 100% = best value)    | 80% (SAQ 4.0)   | 84% (SAQ 4.0)   |
| Responsible Business Alliance | 0% to 100%<br>(0% = worst value & 100% = best value)    | -               | 76%             |

\*Hirschvogel Komponenten GmbH

To measure and evaluate its sustainability performance, the Hirschvogel Group regularly takes part in various ratings.



### 3 SUSTAINABLE PRODUCTS AND TECHNOLOGIES



In order to secure growth and employment at all sites for future generations, too, we are currently working hard to align our components business in the automotive sector to e-mobility and drive independence. At the same time, we want to expand our portfolio into new technologies and markets, such as the bike and micromobility sectors.



Michael Schleich, Vice President Corporate Development

## GENERAL

The Hirschvogel Group is one of the largest global automotive suppliers in the field of steel and aluminum forging as well as subsequent machining. Innovations have always been part of our business.

With the transformation of mobility away from gasoline and diesel engines to electric drives and micromobility, Hirschvogel is also faced with a huge responsibility. Not only the product portfolio, which only a few years ago consisted largely of components for conventional diesel and gasoline-powered vehicles and was therefore responsible for a significant share of sales, is undergoing change. Rather, the machine fleet, too, is also being adapted to the changing conditions.

Hirschvogel sees the mobility transformation not only as a challenge, but also as an opportunity. In addition to maintaining a stable order situation and the associated sales of gasoline and diesel components, the goal is to increase sales of components related to electromobility. This includes not only drive-independent components required for all vehicle types, but also electromobility-related components used exclusively in electrically driven vehicles. In addition, the machine fleet is undergoing consistent analysis in terms of energy consumption and resource utilization in order to implement sustainable processes on an ongoing basis in this area, too.

In its focus on the future, Hirschvogel is also looking beyond internal processes and considering the entire supply chain, which includes both suppliers and customers. In this way, partnerships with like-minded companies are sought after and expanded upon in order to shape change together. After all, it is not one company that will make the difference, but several companies together. Furthermore, this enables the Hirschvogel Group to recognize developments in the value chain at an early stage and thus, for example, to specifically incorporate megatrends, such as electromobility, into the corporate strategy.

In order to develop systems and technologies that go beyond the state of the art, the Hirschvogel Group actively cooperates with various research and funding institutions. Since 2016, Hirschvogel has been an associated partner in the Kopernikus project, SynErgie. Within the project, industry flexibility is being investigated in order to promote flexible energy use behavior to accommodate the volatile supply of renewable energy in the future. Research focuses on the development of an intelligent load management system, bivalent heat treatment, and the integration of energy storage systems.

## RESPONSIBILITY

Just as society is increasingly evolving with regard to sustainability, Hirschvogel as a company must also change. The topic of sustainability is more important than ever for both customers and society, and has become an integral part of ongoing discussion. Particularly in the case of end products that incorporate Hirschvogel components, the demand for sustainable products has been increasing significantly in recent years and is an aspect that influences purchasing behavior.

The Hirschvogel Group wants to offer its customers an optimum solution that achieves the highest possible quality standard and has the least impact on the environment. In addition, the Hirschvogel Group wants to secure its existing competitiveness with its constantly evolving product portfolio.

Even policymakers are becoming active with regard to sustainable mobility and have a considerable influ-

ence on the business. For example, various governments of the countries in which Hirschvogel has plants or to which Hirschvogel supplies its components are discussing and planning a ban on the registration of vehicles with combustion engines. Final decisions are currently still pending, but in the European countries, for instance, a ban is being aimed for between 2030 and 2035. From this perspective, too, the company is called upon to make the transition to e-mobility.

Hirschvogel not only wants to manufacture products that have a low carbon footprint in the use phase, but also aims at halving emissions from production itself by 2030 and also restructuring the entire supply chain to minimize CO<sub>2</sub>. The long-term goal of the company is to contribute to zero-emission mobility and thus meet stakeholder requirements. In doing so, production will be aligned according to the cradle-to-gate approach, i.e., from the origin of the products to the point at which they leave the Hirschvogel plant.

| 2020    | 2021    | 2022    |
|---------|---------|---------|
| 315,941 | 346,874 | 426,486 |

Tonnage delivered by the Hirschvogel Group

## IMPLEMENTATION

The fact that the transformation towards e-mobility is also advancing at the Hirschvogel Group can be seen, among other things, in the increasing sales of green products. These rose continuously between 2019 and 2022. The company has set the target of generating 50 % of sales by 2025 and 80 % by 2030 with products that are directly installed in e-mobility powertrains, or products and chassis components that are independent of the powertrain.

In addition, 72% of the investments made in 2022 will flow into the area of “green business”. When referring to “green business”, the Hirschvogel Group means carbon-free mobility concepts. This shall ensure that the machine fleet is equipped for the ongoing shift towards electromobility.

## EXAMPLE PROJECTS

### LIGHTHOUSE PROJECT:

#### “ELECTRICALLY POWERED HEAT TREATMENT FACILITY”

Based on the corporate carbon footprint, a hotspot analysis was carried out to identify the most significant emission sources of the Hirschvogel Group. Within the Scope 1 emissions, the natural gas consumption of the heat treatment furnaces represents the main emission sources and thus pose the greatest challenge for decarbonization in this area. Since the ambitious decarbonization goals derived from the Science Based Targets initiative can only be achieved through long-term investments into conversion of plant technology,

a pilot project was launched with the plant manufacturer Aichelin to pursue this new technological path. The double continuous chamber furnace line commissioned in Denklingen in 2022 not only represents the state of the art in terms of technology, but it is also heated purely electrically. By continuing to move away from natural gas as an energy source for heating within the heat treatment process, another milestone in the Hirschvogel Group’s decarbonization strategy has thus been reached.



(Image rights: Aichelin Holding GmbH)

Impressions of the electrically heated heat treatment facility



(Image rights: Aichelin Holding GmbH)

## DIFFERENTIAL BEVEL GEAR PRODUCTION

The powertrains of the future are undergoing radical change. In the wake of electromobility, the differential – a component that has remained unchanged for around 100 years – has seen significant performance increases in recent years. Hirschvogel is embracing this challenge and has expanded its portfolio to include differential bevel gears and mounted differentials. A sophisticated and highly efficient in-house production

facility has been set up especially for these differential bevel gears. Hirschvogel has set itself the goal of using the best manufacturing technologies so that it can offer very good quality at competitive prices, even in Germany. This highly automated production facility goes beyond the state of the art, for instance by raising the bar to new heights with respect to the time from receipt of order to dispatch.



## BIVALENT HEAT TREATMENT

The state of the art for bivalent production systems is largely unexplored. Although there are studies that address the topic of bivalence, they either refer exclusively to heating systems or consider the power-to-heat idea in a general way. Bivalent process plants do not use electricity for heat generation, but rather heating oil or natural gas, depending on the fuel price. However, such bivalent plants are found only here and there in a few industries, particularly in energy-intensive sectors. Power-to-heat technology describes the

conversion of surplus renewable energy (RE) into heat, whereby the heat is not used for the production process but typically for water heating. The reverse possibility, i.e., the provision of heat by an energy source other than electricity, has not yet been investigated. Within the Kopernikus project, SynErgie, a heat treatment furnace was implemented at the Marksuhl site which can be heated bivalently with natural gas or electricity, as required.

## MICROMOBILITY

In the course of the transformation process, the Hirschvogel Group is establishing the new micromobility business area. "Micromobility" refers to vehicles that will shape the mobility of the future, from (electric) bicycles to micro and light vehicles. Hirschvogel initiates, plans, and implements projects in the area of micromobility, from the initial idea to the finished product. Vehicle concepts are to be implemented in such a way that they are impressive in terms of quality and take to the road at a competitive price. In order to help shape micromobility and thereby enable the mobility revolution to really take off, a dedicated Business Unit has been set up. At the IAA MOBILITY 2021 in Munich, the company presented a component platform for three- and four-wheeled micromobiles under the brand name AXIMO. Among the trade show highlights at Eurobike 2022 were two axle systems that Hirschvogel has developed to series maturity on the basis of the AXIMO com-

ponent platform. One is an L2e axle for three-wheeled vehicles, which enables new, dynamic driving behavior thanks to its innovative design and compact construction; the other is an axle set designed specifically for two-track light vehicles in the L6e class. Both axles are complete systems, ready for assembly, and designed as load-bearing components. Thanks to the AXIMO modular design principle, customer-specific adaptations, for example, to track width, load capacity, or connection points, are easily possible. Hirschvogel celebrated its premiere at the Eurobike trade fair and already experienced its first successes there, both as an exhibitor as well as with the AXIMO electric drive. The innovative, extremely robust direct drive was developed specifically to meet the challenges of commercial use, such as in the courier or rental sector, for cargo bikes or speed pedelecs.



## AUTOMATED AND COMPONENT-SPECIFIC PRODUCT CARBON FOOTPRINT

In order to increase transparency in the supply chain and make a contribution, Hirschvogel offers a product carbon footprint (PCF) for every component it supplies. This allows customers to consider the carbon footprint in addition to costs when placing an order. The PCF includes Scope 1 and 2 emissions within Hirschvogel production as well as raw material emissions.

Currently, Scope 1 and 2 emissions are calculated on a component-specific basis using the routing and facil-

ity-specific average values, while raw material emissions are based on primary data from our suppliers. In the future, the calculation of our own Scope 1 and 2 emissions will be refined by linking the energy measurements available in the energy data management system with order-specific information. Thus, facility-specific average values will be replaced by component-specific emissions for each facility.

# 4 ENERGY AND EMISSIONS



The Hirschvogel Group is in the process of reducing its natural gas consumption, electrifying production operations, and converting to green electricity. At the German sites, we have been purchasing electricity exclusively from renewable sources since the beginning of the year. In addition, Hirschvogel wants to cover the defined quotas at the plants through its own regional photovoltaic projects.



Dr. Dirk Landgrebe, COO

## GENERAL

For its core business, namely the development and production of vehicle components made of steel and aluminum, the Hirschvogel Group requires a large number of natural resources at all its locations, such as operating supplies, water, natural gas, and fuels. Hirschvogel's activities have an impact far beyond plant boundaries, so that upstream and downstream stages of the value chain are also taken into account. In addition to the required input and raw materials, the

downstream processes also have an effect on the environment.

The use of electricity and natural gas adds to the environmental impact due to the generation of CO<sub>2</sub> emissions. Here, the Hirschvogel Group attaches the utmost importance to transparency and is continuously improving its carbon footprint.

## RESPONSIBILITY

Hirschvogel is aware of its role in the supply chain and the associated responsibility towards the environment, and does not only act in the short term, but looks toward long-term success. All processes are evaluated with regard to their environmental impact, and measures are continuously taken to keep this to a minimum.

However, the company's responsibility does not end at the plant gates, but extends beyond the plant bound-

aries and encompasses both the entire upstream and downstream value chains right up to the customer's gates. It is upstream that a large proportion of a product's greenhouse gas emissions are generated. To counteract this, Hirschvogel is working together with suppliers and customers to achieve the goal of a carbon-neutral component. In addition, the Hirschvogel Group maintains regular dialog with its stakeholders, particularly with customers and suppliers.

## IMPLEMENTATION

In order to meet the requirements of the stakeholders in the best possible way, the company has established certified energy and environmental management systems according to ISO 50001/14001 in the individual plants. To ensure implementation thereof, Hirschvogel has created a corporate function for both management systems in addition to the plant functions, whereby the standards are specified at corporate level and implemented at plant level on a site-specific basis. The overarching goal is to conserve natural resources and, in so doing, to also reduce production and energy costs.

Site-specific measures have been defined and implemented to achieve these goals. In addition, all employees are trained once a year in the areas of energy, waste, and the environment. There are thus also

plant-specific environmental and energy targets. An energy team consisting of the PC Manager, the Plant Manager, Energy Mentors, and the Energy Manager at the site, meets quarterly to discuss important energy issues and derive measures.

The energy supply is also currently in the process of change, as the Hirschvogel Group is endeavoring to make greater use of renewable energy sources. Likewise, environmentally friendly and renewable resources are also increasingly being used in production. By purchasing green electricity certificates of origin for the German locations, it was possible to significantly reduce Scope 2 emissions in 2022. However, this step towards a large-scale supply of renewable energy represents only one of many further steps. On-site

photovoltaic projects, which have already been initiated and are about to be implemented, are additional building blocks within the decarbonization strategy of the Hirschvogel Group. In addition to the on-site capacities, the procurement strategy in the area of electricity is currently being transformed. Here, long-term power purchase agreements (PPAs) from renewable energy sources are becoming increasingly import-

ant for a sustainable and economical energy supply. By consistently driving forward technologies such as load management systems, a better integration of renewable energy into the industrial load profile can be achieved. Implementation of a new, intelligent load management system at the lead plant in Denklingen was already initiated in 2022.



Guidelines that are applicable in this process include standard operating procedures on energy and the environment, a standard for suppliers, and a general mission statement on environmental protection.

With one exception, all plants of the Hirschvogel Group are certified according to ISO 14001. In China, a certified environmental management system is applied according to the national standard. This is based on ISO 14001. The majority of our sites, including all plants in Germany and, since 2021, Hirschvogel Components India Pvt. Ltd. are also certified according to ISO 50001.

The environmental and energy management systems contribute to the continuous improvement of environmental and energy performance. These are combined in an integrated management system in order to take

advantage of synergies between the certifications. In addition, Hirschvogel is striving for international consistency in management systems and standards in order to create the same basis at all plants and to enable interaction on an equal footing.

Currently, the Hirschvogel Group is in the process of officially certifying all plants. Through the company's internal standards, which are based on ISO 50001, all international plants are already aligned with the standard in their structures.

|                                       | 2020    | 2021    | 2022    |
|---------------------------------------|---------|---------|---------|
| NATURAL GAS [MWh]                     | 95,442  | 118,630 | 125,154 |
| ELECTRICITY [MWh]                     | 254,089 | 289,299 | 299,790 |
| NATURAL GAS CONSUMPTION [MWh/tonnage] | 0.302   | 0.347   | 0.296   |
| ELECTRICITY CONSUMPTION [MWh/tonnage] | 0.804   | 0.845   | 0.703   |

Energy consumption of the Hirschvogel Group

|   | 2020    | 2021    | 2022      |
|---|---------|---------|-----------|
| SCOPE 1 [t CO2e]                          | 20,659  | 21,885  | 26,245    |
| SCOPE 2 [t CO2e]                          | 104,077 | 110,334 | 83,911    |
| SCOPE 3 [t CO2e]                          | 955,988 | 867,162 | 1,017,988 |
| EMISSIONS PER SALES [T CO2E*/MILLION EUR] | 119.94  | 92.85   | 78.68     |
| EMISSIONS PER EMPLOYEE [T CO2E*/FTE**]    | 22.11   | 22.60   | 17.42     |
| EMISSIONS PER AREA [t CO2e*/m²]           | 0.51    | 0.47    | 0.42      |

\*Scope 1&2 taken into account  
 \*\*FTE year 2022: 6,325

Greenhouse gas emissions of the Hirschvogel Group

Due to the very energy-intensive production processes, Hirschvogel is one of the largest energy consumers in the respective regions. Production steps such as raw material heating, forging, and heat treatment require a considerable amount of natural gas and electricity. Thus, the total energy requirements of the Hirschvogel plants amounted to 424,944 MWh in 2022. Hirschvogel continuously improves energy use through energy efficiency projects. These result in annual savings of 953 MWh of electricity and 4,120 MWh of natural gas.

To record the impact of production in figures, the Hirschvogel Group has been calculating Scope 1 and 2 emissions since 2016 and Scope 3 emissions since 2019 in accordance with the GHG (Green House Gas) Protocol. Scope 1 encompasses all direct greenhouse gases within plant boundaries; Scope 2 includes all energy-related emissions and Scope 3 all other emissions.

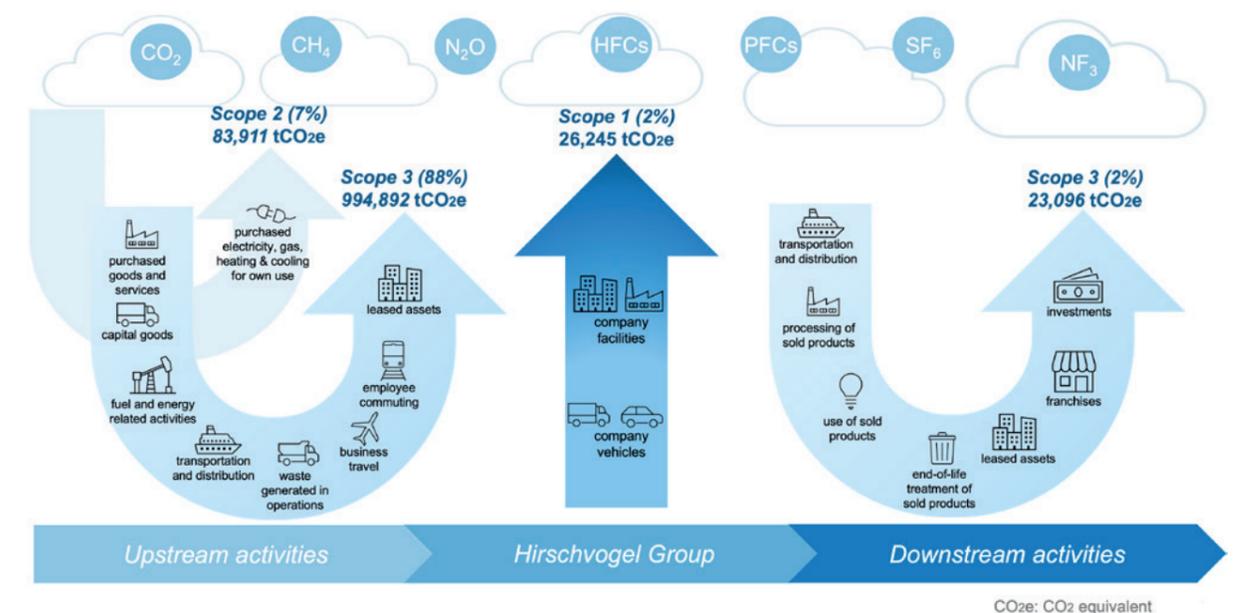
For Scope 1, natural gas, propane, diesel, and gasoline are identified and taken into account as emission sources. For Scope 2, only electricity consumption is relevant. In order to identify the categories in Scope 3 that are relevant for Hirschvogel, a screening was carried out.

Emissions occur in each of the following categories: Purchased goods and services (category 1), fuel and en-

ergy-related emissions (category 3), transport and distribution upstream and downstream (category 4/9), waste (category 5), business travel (category 6), employee commuting (category 7).

In addition, capital goods (category 2), processing of products sold (category 10), and investments (category 15) were considered significant but were not calculated individually. The categories of capital goods and investments are calculated within goods and services. No data basis is available to calculate the processing of products sold, so emissions cannot be calculated. Since the downstream processes are significantly less energy-intensive, it can be assumed that the emissions are negligible.

The development of emissions over the last four years shows that Hirschvogel's greenhouse gas emissions have been reduced. In 2022, the emissions output was lower than in 2019. While production was at times severely limited during the year due to the semiconductor shortage and even though energy efficiency measures were continuously implemented, electricity consumption increased. Nevertheless, Scope 2 emissions were significantly reduced by increasing the share of green electricity.



Emissions footprint of the Hirschvogel Group in 2022

This path is to be continued in the future. In order to further reduce energy demand and greenhouse gas emissions, in-house generation projects, power purchase agreements, and green power certifications will be actively examined for all plants in the coming years.

The overall footprint shows that the majority of emissions (approx. 91%) were generated within Scope 3. The Scope 2 emissions at 7% and Scope 1 emissions at 2% are significantly lower. As a result, Hirschvogel is communicating within the supply chain to identify opportunities to reduce Scope 3 emissions.

Since the end of 2021, the Hirschvogel Group has committed to a target in line with the Science Based Targets initiative. This means that emission reduction targets have been set that are grounded in science-based findings. These define how much and how quickly a company must reduce its greenhouse gas emissions in order to limit global warming in accordance with the Paris Agreement.



#### The decarbonization targets of the Hirschvogel Group up to 2030

To make its contribution to the decarbonization of industry, Hirschvogel has set targets according to the Science Based Targets and had its own targets validated by the SBT initiative. For example, Hirschvogel aims to reduce site-related emission by approximately 50% by 2030. Scope 3 emissions are to be reduced by 15% over the same period. Due to the limited degree of influence, an individual target was drawn upon that was determined on the basis of an industry comparison.

In addition, the each of the plants set themselves individual targets in the area of energy and the environment in order to continuously improve their respective performance. This gives the plants the opportunity to

identify key topics in the area of energy and the environment, and to promote them in a systematic manner.

Customers are also increasingly demanding a transparent representation of energy and emissions consumption along the entire value chain in order to reduce greenhouse gas emissions as a whole. Sustainability aspects are becoming more and more important within award processes. The demands for 100% green electricity at production sites, raw material specifications, and concrete energy efficiency measures are increasing significantly and are now mandatory in many award procedures.

In addition to successfully implementing the requirements, Hirschvogel proactively approaches customers to establish optimum interaction in peer dialogs. The Hirschvogel Group also participates in various training courses organized by customers, in which knowledge about measures, sustainability, and customer visions is passed on. This knowledge is tested and disseminated

within the company. If an added value for the company can be determined, measures are actively implemented, the sustainability know-how is integrated into the internal processes, and the customer vision is taken into account when setting the direction for the subsequent years.

## EXAMPLE PROJECTS

### DekPro – DECARBONIZATION OF PRODUCTION

As part of the “DekPro” research project funded by the Bavarian Research Foundation (Bayerische Forschungsförderung) and led by the Fraunhofer Institute for Casting, Composite and Processing Technology (IGCV), solutions are being developed to reduce production-related greenhouse gases. The goal of the project is to identify emitters of greenhouse gases along the value chain on the basis of reliable data collection and to significantly reduce emissions in line with corporate objectives such as costs, quality, and performance. Emissions from electricity and gas use as well as material and process emissions are taken into account.

Based on the current state of research, the areas of decarbonization strategy, emissions-oriented production

setup, and decarbonized fuel supply were considered and transferable methods developed. These were tested at Hirschvogel.

It was concluded that a structured decarbonization roadmap supports strategic decision-making in the selection and timing of measures. In the case considered, the energy and emissions-oriented production setup saved approximately 50% of electricity costs and 70% of emissions compared to the baseline scenario. The analysis of possible alternative fuel supply scenarios showed that the functionality of the industrial furnaces is still given at hydrogen concentrations of up to 18% by volume. This resulted in an emissions reduction of over 60% compared to the baseline scenario.

## INTELLIGENT LOAD MANAGEMENT

For manufacturing companies, the demand for “energy flexibility” on the consumer side means that in the future they will have to manage their energy procurement and use flexibly and at the same time in an economical way.

Currently available technological processes and the production systems used to implement them, as well as existing logistics concepts, are only partially able to meet the requirements of future innovative, dynamic

energy and load management at the various distribution levels (site, hall, facility, machine, component) in order to fulfil future flexibility requirements both in the product and in the system utilization period. As part of the SynErgie project, the basis for a future intelligent load management system that dynamically regulates consumption behavior is being created in collaboration with Siemens and the Fraunhofer Institute for Machine Tools and Forming Technology (IWU).

## SOLAR PARK INDIA

The Indian plant, Hirschvogel Components India Pvt. Ltd., has a PV system that feeds 1,600 MWh annually into the plant grid. This is an important building block for the future decarbonization and energy supply of the site, and it provides the opportunity to offer products

manufactured with green electricity. The production site in Pune affords many hours of sunshine, resulting in a high yield from the solar plant and a rapid return on investment.



## MEDIA SUPPLY SHUTDOWN IN MARKSUHL

At the Marksuhl site, shutdown devices for the supply media of compressed air and cooling water were installed on selected forging units. This was undertaken to determine whether standby consumption could be minimized by automatically shutting down the forging machines. To this end, a new "stand-by mode" was programmed into the central machine controls in one

production hall, thereby regulating the corresponding valves in the media supply when activated. The shutdown of the supply media by means of a load management system once a forging unit had shed its load resulted in a reduction of approx. 60 kW in the base load, which was available as additional load shedding potential.

## HIRSCHVOGEL'S SYNDICATED LOAN LINKED TO ENVIRONMENTAL AND SOCIAL FACTORS

Banks and credit institutions are also stakeholders, and sustainability has an impact on the financing of the Hirschvogel Group, too. In 2022, a milestone was reached by linking a syndicated loan with environmental and social factors.

This involves two ambitious key figures that are linked to the sustainability strategy:

- 50% reduction of Scope 1 and Scope 2 CO<sub>2</sub> emissions by 2030
- 30% reduction of the Lost Time Incident Rate of the Hirschvogel Group by 2030

These two continuous reduction targets have an impact on the credit margin in the form of an interest rate adjustment mechanism. This means that the interest margin is reduced if the key figure targets are achieved and increased as a consequence of non-achievement. Annual reporting and validation of target achievement is carried out for this purpose.

# 5 MATERIAL AND RESOURCES



From the start, the Hirschvogel Group's purchasing strategy has been geared towards local sourcing of the required production resources. In the spirit of the founding Hirschvogel family, the use of recycled steel has been a priority for decades in order to protect the environment for future generations. Purchasing will continue to consistently pursue and intensify this chosen path in the future.



Michael Walther, Vice President Corporate Purchasing

## GENERAL

The topics of materials and resources are closely linked to the issues of energy and emissions as well as sustainable products and technologies. For its core business, namely the development and production of automotive components made of steel and aluminum, a large number of resources are required at all locations, such as operating supplies, water, natural gas, and fuels. Thus, the lead plant in Denklingen, for example, is one of the biggest consumers of resources in the region. For the manufacture of products and com-

ponents, large quantities of steel and aluminum, in particular, are required as materials and these account for a large proportion of the resource consumption. The activities of the Hirschvogel Group have an impact far beyond plant boundaries, so that the upstream and downstream value chain is also taken into account. In addition to the required input and raw materials, the downstream processes of the customers also have an effect on the environment.

## RESPONSIBILITY

It is the responsibility of the Hirschvogel Group to conserve resources regionally and globally and thus to ensure that they are used efficiently. To this end, Hirschvogel is in constant dialog with customers and suppliers in order to ensure that the technical, economic and ecological requirements in the value chain are met. Regular exchange with stakeholders is a high priority for the Hirschvogel Group in order to stay up to speed on current developments. The goal is to purchase the materials required for production regional-

ly to an even greater extent in the future, since valuable resources are conserved through short transport routes.

Continuous improvement is the ongoing goal with regard to the company's environmental performance. To this end, open dialog with customers, authorities, and the public is essential. Compliance with all laws and regulations is a basic prerequisite for the actions of the Hirschvogel Group.

## IMPLEMENTATION

In order to conserve resources at all stages of the value chain, Hirschvogel is gradually replacing conventionally generated electricity with sustainable and regenerative energies. In the future, regenerative energies will be used in the production processes instead of natural gas. Another step towards more sustainability involves increasing the use of materials from recycled steel and aluminum scrap. Here, the Hirschvogel Group builds, as far as technically possible, on partnerships with suppliers who use only scrap for the manufacture of production materials.

The recycled steel (secondary steel) produced from various kinds of steel scrap in the EAF process (electric

arc furnace) has a similar quality to primary steel for Hirschvogel products, so that its use is possible from a technical standpoint. Compared to the conventional LD process (Linz-Donauwitzer process, in the blast furnace), the EAF process generates approx. 60% fewer CO<sub>2</sub> emissions. In this process, the steel is not forged in conventional blast furnaces, which are operated with gas, but in electric arc furnaces. Here, 97% of the steel is melted from scrap. The scrap produced during the melting process can also be reused. Therefore, the use of EAF steel is sustainable in the sense of a circular economy. In this way, no additional resources are taken from the environment. The Hirschvogel Group already largely purchases secondary steel from its suppliers.

This percentage will be successively increased, as customers worldwide are already demanding greater use of secondary steel.

The use of steel and aluminum with a reduced CO<sub>2</sub> footprint is of great importance to the Hirschvogel Group and its customers. Production material accounts for the largest share of Scope 3 CO<sub>2</sub> emissions and of the total product. Thanks to the close exchange of information with suppliers, the Hirschvogel Group has a good overview of the carbon footprint of the material in its as-delivered state, the materials that are already offered on the market as "green steel", and what next steps the suppliers are taking or planning to take in order to further reduce CO<sub>2</sub> emissions. The greatest potential on the way to climate-neutral materials lies, for example, in the use of electricity from renewable energy sources and the transition from gas to hydrogen.

The Hirschvogel Group sees itself as a central link between material suppliers upstream and with customers downstream in the value chain, promoting circular

economy and the use of materials with a reduced carbon footprint. To this end, the Hirschvogel Group will further intensify its discussions with partners.

The Hirschvogel Group also ensures the continuous development of its suppliers in terms of sustainability and decarbonization. To this end, the company uses its market position as a driver of the process. The Hirschvogel procurement process ensures that all the potential for reducing the carbon footprint and the associated conservation of important resources is leveraged as a fundamental factor in achieving greater sustainability and environmentally friendly products.

In addition to the suppliers, all employees of the Hirschvogel Group are integrated into the company's environmental activities. For this reason, employees are offered training courses to ensure a high level of environmental awareness. Furthermore, internal and external audits serve to monitor the effectiveness of the environmental and energy management systems and to identify potential for improvement.





# 6 OCCUPATIONAL HEALTH AND SAFETY



Safety at the workplace is a big responsibility. Workplace expectations have increased, and the definition of safety has expanded to include employee well-being in the full sense of the word.



Robert Steck, Health Manager Germany



We believe that a safe and healthy work environment is essential, not only for the well-being of our employees, but also for the long-term success of our company. In our guiding principles, we commit to creating a culture in which every employee takes full responsibility not only for their own safety, but also for the safety of those around them.



Piotr Lietz, EHS Global Manager

## GENERAL

The health and well-being of each individual is our top priority at the Hirschvogel Group. It is important to Hirschvogel that all employees come to work healthy and return home equally healthy. In this way, the Hirschvogel Group can ensure that it offers its customers the best solutions in the long term, both in terms of quality and social aspects. In normal day-to-day production, a large number of processes run simultaneously, thereby involving the possibility of occupational hazards. On the one hand, for example, there are elec-

trical induction heating systems that operate at high temperatures and emit electromagnetic fields. On the other hand, we use presses which operate with great force and high pressure to forge the heated parts, and which thus generate noise. Here, Hirschvogel must pay special attention to occupational health and safety. In addition, the employees in the supporting processes are similarly the focus of attention because here, too, the safety and well-being of each individual is of great importance.

## RESPONSIBILITY

Hirschvogel defines proactive behavior as the guiding maxim in the area of occupational health and safety. To this end, all locations are certified according to ISO 45001 (or equivalent local systems). It is also the responsibility of the Hirschvogel Group to go beyond the legal requirements in order to actively prevent accidents. As a result, the company addresses risks as soon as they are identified.

Our vision is as follows:

- The Hirschvogel Group values the health of each individual as the prime asset.
- The Hirschvogel Group regards prevention measures in occupational health and safety as its obligation.
- The Hirschvogel Group designs all workplaces to be safe, ergonomic and health friendly.

Although the success of occupational health and safety depends to a large extent on the leaders setting a good example, the sole responsibility does not lie with them. Rather, each individual is responsible for health and safety. The company values a culture of giving and receiving feedback, and is implementing behavior-based safety programs at Hirschvogel.

Leaders are specially trained to uphold this responsibility. Only if leaders set a good example and actively share this responsibility will employees internalize occupational health and safety both in their daily work as well as in their personal lives – after all, Hirschvogel wants to extend safety measures beyond the company. Occupational safety measures are practiced by leaders and communicated to all employees, students, contractors, and visitors.

## IMPLEMENTATION

In order to ensure the highest possible level of safety for Hirschvogel employees and to protect their health, local Environment, Health & Safety (EHS) departments have been in place at the individual plants for many years, sharing best practices and common solutions internationally. Together with the Management Board,

the decision was made to establish a corporate department from 2022 to provide the plants with a common and unified approach to occupational health and safety. As part of this, the position of Global EHS Manager was filled in 2022.



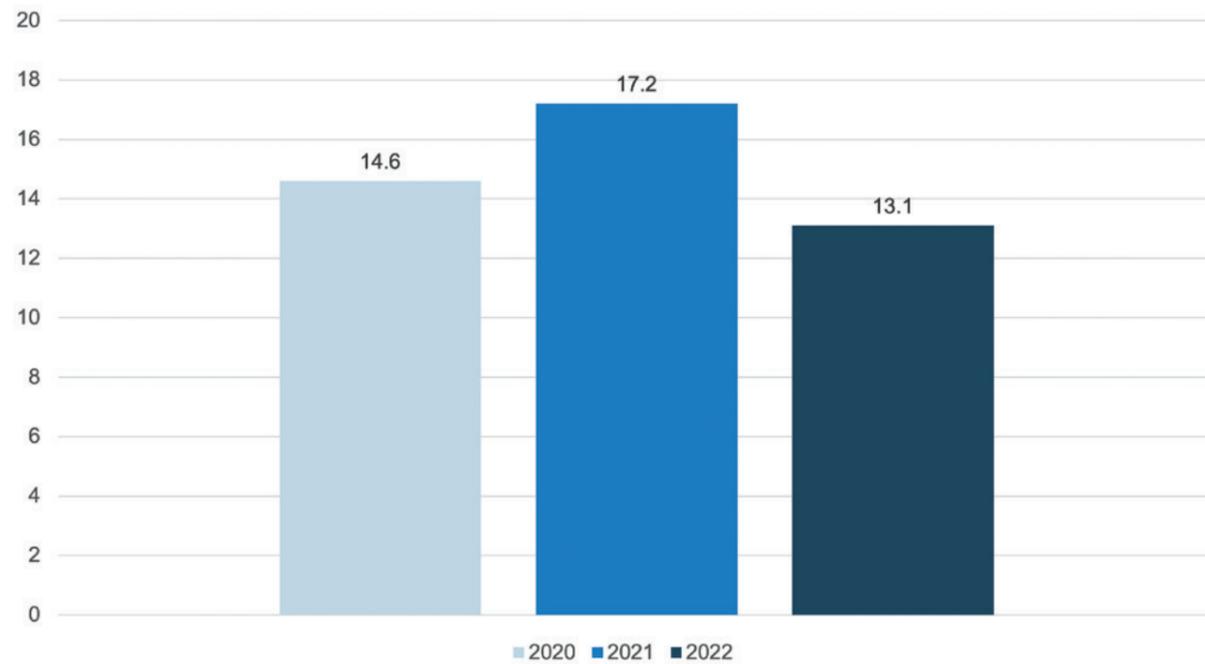
Presenting the Alexander Kaufmann Award for the best occupational health and safety idea

The efforts of the Hirschvogel Group in the area of occupational health and safety extend beyond the plant gates. For example, during the pandemic, Hirschvogel took care to create an ergonomic and safe workplace for those working from home in order to meet the health and safety requirements of employees in the long term. In addition, Hirschvogel demands a high standard of occupational health and safety from its suppliers.

The implementation of occupational health and safety measures is a continuous improvement process. It is not just the goal of "zero accidents" that is set out in the Operational Excellence dialog picture of the ideal plant,

but also the minimization of all risks. It is about living by a "culture of safety" while on the job and beyond.

The global EHS team consists of various specialists – each Hirschvogel plant is different and operates under different health and safety conditions. In addition to the legal requirements for each site, the Hirschvogel Group must also consider the surroundings and cultural background. Nevertheless, safety incidents are reported across plants and dealt with jointly in order to minimize health and safety risks and prevent similar incidents from occurring at other sites or being repeated internally.



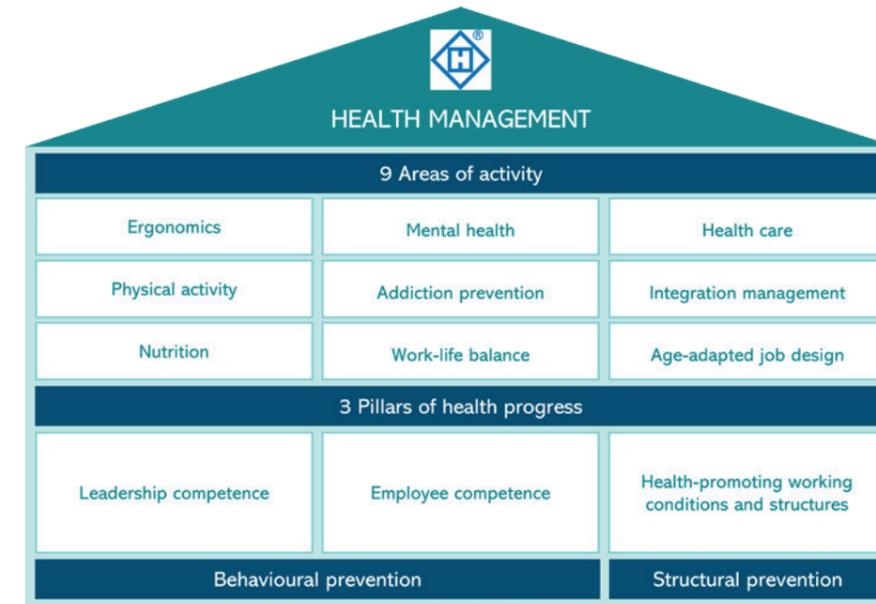
\*per million work hours

Lost Time Incident Rate (LTIR) of the Hirschvogel Group

Currently, Hirschvogel calculates safety incidents within the Group as a ratio to the number of hours worked. This approach gives the Hirschvogel Group a better means of monitoring trends over the years with regard to the improvement of health & safety conditions at all sites. In addition, this key figure is part of the closed syndicated loan, which was mentioned in the chapter "Energy and Emissions".

The goal over the next few years is to integrate a uniform reporting system for accidents, so that all plants are equally informed and potential improvements in occupational health and safety can be implemented as quickly as possible across the company.

All employees receive mandatory training in the basics of safety awareness at the start of their employment and at recurring intervals after that. In addition, risk assessments are carried out for the individual work areas in order to impart knowledge specific to the workplace. The Hirschvogel Group attaches great importance to ensuring that employees are well trained and prepared to react correctly in hazardous situations. The individual plants also have specially trained employees as first aiders, fire safety catalysts, and emergency response teams.



House of Health: Occupational health management

Using a holistic approach to occupational health management, the Hirschvogel Group has been systematically promoting the health of employees at the German sites in Denklingen, Schongau, and Marksuhl since 2018. Building blocks and fields of action for occupational health and safety management are decided on a Germany-wide and site-specific basis via the "House of Health" using key health indicators. Internal and exter-

nal surveys, analyses, and reports are used to identify needs as well as develop and expand target-group and company-specific prevention programs. For example, health management covers the nine fields of action of ergonomics, exercise, nutrition, psyche/stress, addiction, preventive health care, work-life balance, integration, and work design.

At international level, no health management system has been introduced due to local legal requirements, but this does not mean that no activities are taking place. The site in Mexico has its own medical examination room for all employees, where regular medical examinations are carried out. The site in India also has the option of providing on-site care for employees in the examination room and with the physician. Some of the plants also offer the option of a private medical plan for all employees and their families, which can include doctors from various medical disciplines. Hirschvogel takes care of women during pregnancy and provides special resting and breastfeeding rooms.

The topics and fields of action for the respective plants and departments are defined and driven forward in regular meetings of the "Health Circles", which comprise plant-specific teams made up of representatives from management, HR, and occupational health and safety, as well as the Health Manager, the company physician, the Works Council, and the representatives of the severely disabled. These meetings take place at least 4-6 times a year at the German plants and at the Training Center in Denklingen.

The main tasks of occupational health management were distributed over various fields of action throughout the year. In the first half of the year and at the end of the year, protective measures with regard to the COVID-19 pandemic played a central role. While in Germany a hygiene concept that had been perfected over a long period

of time was gradually relaxed in the middle of the year, it was transferred and applied in China from December 2022 with all the learning effects, making an important contribution to combating the pandemic in Asia. In addition, it was necessary to ensure that the fields of action that were among the main tasks before the pandemic could once again be given increased attention and actively reintegrated and expanded upon in the area of health management.

Among other things, a health center was designed on the premises of the new central building in Denklingen. The center is expected to be completed next year. Furthermore, the company's health management team introduced an ergonomics system for evaluating and improving the workplaces of apprentices. Extensive remodeling work was carried out in the office, meeting and workshop areas. A particular focal point was on expanding the presence of and support provided by company physicians in all plants. In order to strengthen mental health, Hirschvogel established a wide range of training programs for employees and their families at the European plants.

An important task in 2022 was to better dovetail the areas of ESG and Health Management. For example, intensive coordination now takes place at regular intervals between the Health Manager and the newly created Corporate EHS. Corporate ESG and Health Management work together on topics such as the employee induction days and in the Sustainability Committee.

## EXAMPLE PROJECTS

### CONTINUATION OF THE NATIONAL VACCINATION CAMPAIGN

In 2022, employees, their family members, and members of partner companies again had the opportunity to be vaccinated against COVID-19 or other diseases

free of charge during working hours by Hirschvogel company physicians.



### EMPLOYER ASSISTANCE PROGRAM (EAP) TALINGO

Hirschvogel is particularly committed to supporting employees and their family members, even during difficult phases in their professional or private lives. For this reason, we offer the free and anonymous telephone

counseling service, Talingo EAP. Employees and family members can contact Talingo with any issues that are concerning them. In addition, Talingo offers regular online discussions on mental health topics.

### COMPANY BICYCLES FOR EMPLOYEES (BIKE LEASING)

In cooperation with Bikeleasing-Service GmbH, Hirschvogel offers all employees the opportunity to lease company bicycles. As a further incentive,

Hirschvogel assumes the costs for fully comprehensive insurance for the bicycle.

# 7 EMPLOYEE SUPPORT AND DEVELOPMENT



Mutual appreciation and respect when interacting with employees and among the employees themselves are important to me. What makes Hirschvogel so special? At Hirschvogel, the focus is more on the well-being of the employees and less on the profit targets of the Shareholders. I come from a large corporation, and I'm impressed by how uncomplicated it is to carry out planning here at Hirschvogel and by just how far into the future investments are made for safeguarding the company.



Walter Bauer, CFO

## GENERAL

The electric motor is gaining in importance. Consequently, the Hirschvogel Group is also in the midst of the transformation process towards e-mobility. The expansion of the product portfolio required for this process and, in particular, the development of new business areas can only succeed with creative, flexible, and motivated employees. In addition to the transformation to e-mobility, the transition to a sustainable company is one of the main reasons for ensuring increased employee support and development. To boost employee motivation and commitment, the Hirschvogel Group also promotes sustainability with regard to social issues.

Thus, areas such as diversity, inclusion, professional training, and feedback, as well as work-life balance, are given just as much importance as ecological and economic considerations.

For Hirschvogel, a willingness to change and the ability to cooperate across plant and national boundaries are decisive factors for success. Supporting and developing employees is therefore a central issue, not only for the employees themselves, but for all stakeholders in the company.

## RESPONSIBILITY

The Hirschvogel Group is a family business. This is not only reflected in the figures of the ownership structure, but also in the daily interaction with employees, customers, and business partners, which is always characterized by respect and trust. Meeting people at eye level characterizes the corporate culture, and continuous learning as well as equal opportunities are essential fields of action on the path to sustainability at the Hirschvogel Group.

In order to support and develop Hirschvogel employees in an optimum manner, they are professionally accompanied in all personnel processes and issues by a dedicated Human Resources (HR) department. In addition, the Hirschvogel company has an open teaching and learning culture, through which each and every employee can and should learn from superiors and colleagues. With the Hirschvogel professional development system forming the third piece of the puzzle, the Hirschvogel Group provides all employees worldwide with a strong network in which they can grow and develop, and through which they can be optimally integrated into the corporate culture.

## IMPLEMENTATION

Attractive working conditions are decisive for the performance and motivation of all employees in the Hirschvogel Group and are characterized by fair payment, flexible working time models, as well as diverse development opportunities. Each and every employee ultimately contributes to the attractiveness and success of Hirschvogel and is an important part of the company. In order to implement and continuously develop these ambitious goals and concerns, Hirschvogel relies on strategic human resources management on the one hand, and on the OpEx (Operational Excellence) depart-

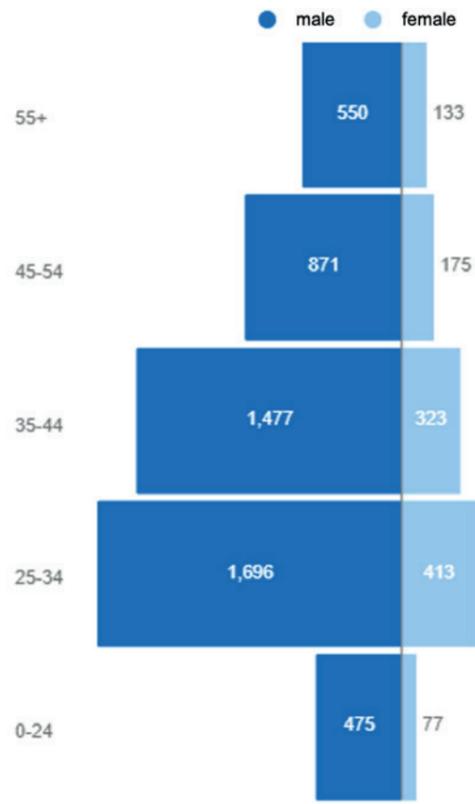
ment on the other, both of which work together continuously on the support and development of all employees. The joint efforts are reflected, for example, in the "Great Place to Work" award in Mexico and the "Most Preferred Workplace in Manufacturing" in India.

In 2022, the Hirschvogel Group employed an average of 6,190 people, with 849 employees joining during the year. Women make up a total of 18% of the workforce at all plants. 11% of the executives are women.

|                                   | 2020         | 2021         | 2022         |
|-----------------------------------|--------------|--------------|--------------|
| Hirschvogel Automotive Components | 924          | 954          | 936          |
| Hirschvogel Aluminium GmbH        | 255          | 251          | 271          |
| Hirschvogel Components India      | 344          | 372          | 419          |
| Hirschvogel Components Mexico     | 310          | 384          | 471          |
| Hirschvogel Components Poland     | 237          | 249          | 265          |
| Hirschvogel Eisenach GmbH         | 441          | 430          | 419          |
| *Hirschvogel E-Solutions          | -            | 5            | 6            |
| Hirschvogel Holding GmbH          | 179          | 180          | 204          |
| Hirschvogel Komponenten GmbH      | 923          | 908          | 918          |
| Hirschvogel Umformtechnik GmbH    | 2,095        | 2,021        | 1,994        |
| Hirschvogel Inc.                  | 316          | 294          | 289          |
| <b>Total</b>                      | <b>6,024</b> | <b>6,048</b> | <b>6,192</b> |

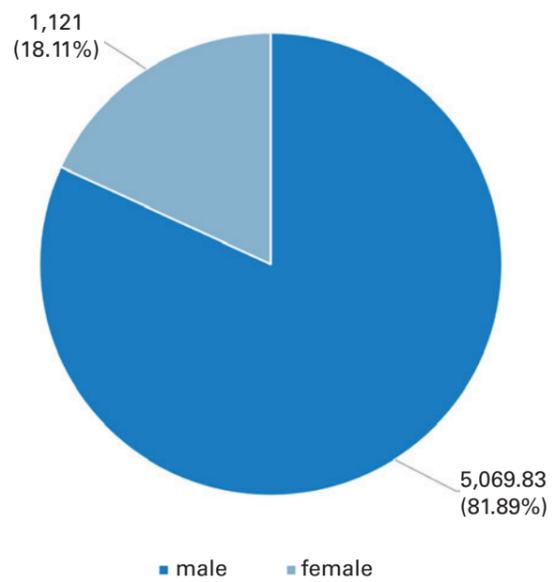
\*Including Hirschvogel E-Solutions

Average headcount per year and plant at the Hirschvogel Group



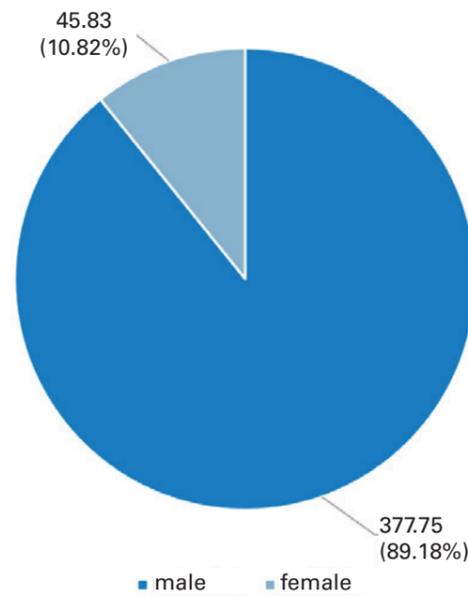
\*including Hirschvogel E-Solutions

Age pyramid of the Hirschvogel Group



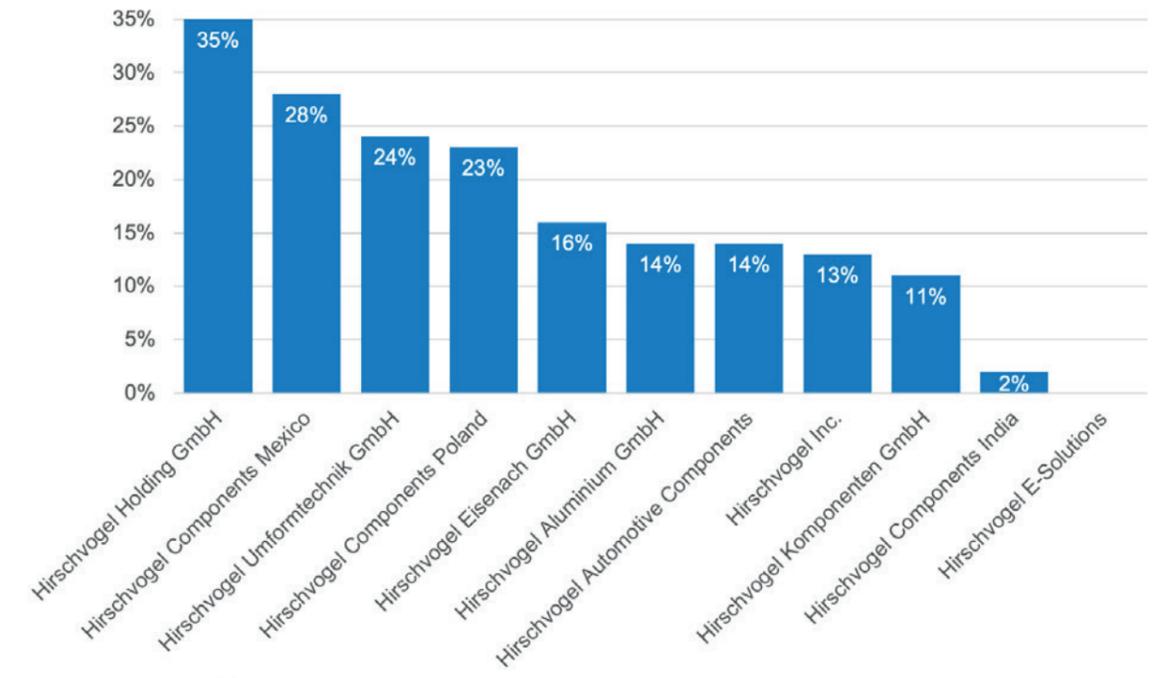
\*including Hirschvogel E-Solutions

Gender distribution of employees at the Hirschvogel Group



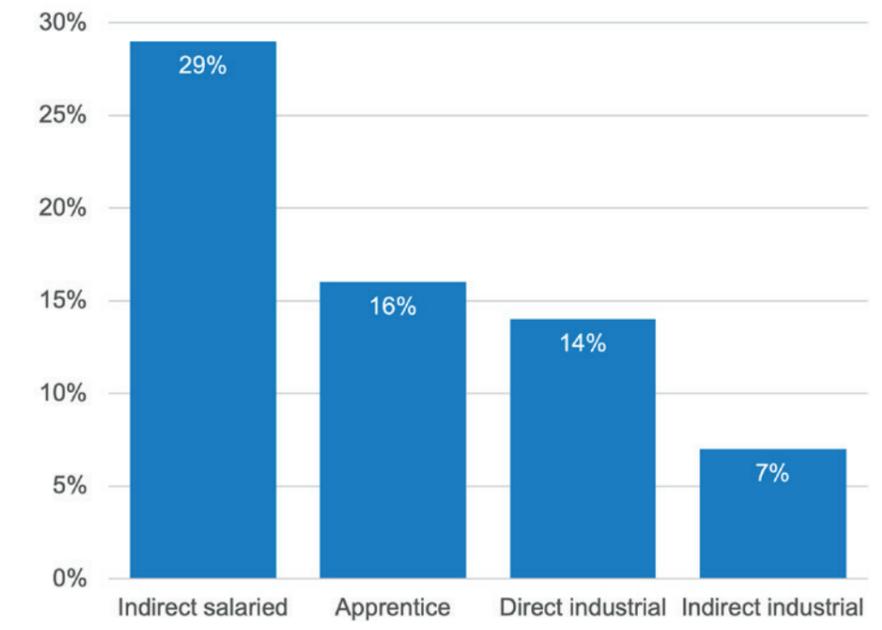
\*including Hirschvogel E-Solutions

Gender distribution in leadership positions at the Hirschvogel Group



\*including Hirschvogel E-Solutions

Percentage of women at each plant of the Hirschvogel Group



\*including Hirschvogel E-Solutions

Percentage of women per employment position at the Hirschvogel Group

## INCLUSION AND DIVERSITY AT HIRSCHVOGEL

At Hirschvogel, all employees – whether in production or in the administrative areas – should feel equally welcome. This also includes the integration of people with disabilities. For this purpose, the company established a voluntary committee, the Representative Council for Severely Disabled Employees (SBV). This provides an important addition to the efforts of the Works Council and the Employee Representatives, ensuring that people with disabilities are integrated into the company, that workplaces are designed to be barrier-free, and that

occupational health and safety is expanded upon. The SBV is the mouthpiece for the specific questions and problems of people with disabilities in the company.

The promotion of diversity is becoming increasingly important for companies. Companies with a high level of diversity in their workforce not only report higher profitability, but also demonstrate greater innovative strength and boast more satisfied employees.

NUMBER OF DIFFERENT NATIONALITIES AT THE HIRSCHVOGEL GROUP

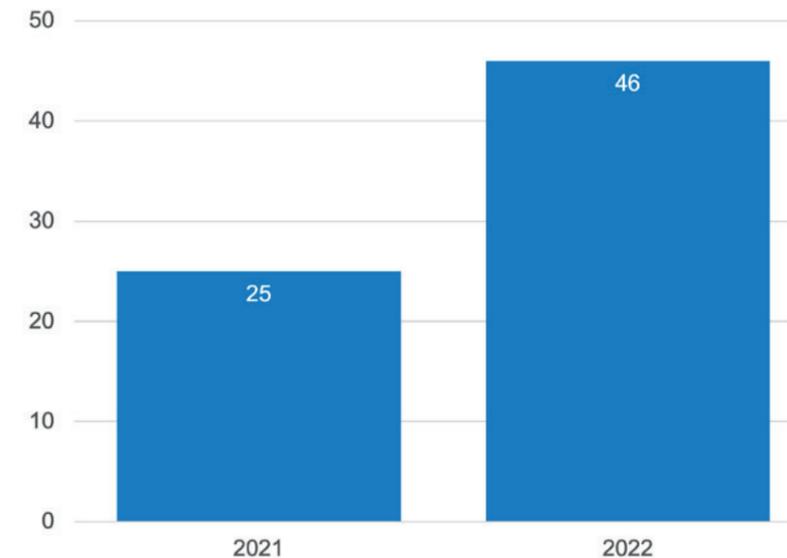
45

## THE HIRSCHVOGEL BUSINESS NETWORK – BY WOMEN FOR WOMEN

With increasing competitive pressure, it is important for Hirschvogel to promote and leverage diversity within the company. In order to sustainably prepare Hirschvogel for the challenges of the future, we must be open to all people in our society. Furthermore, diversity brings with it the opportunity to improve ideas and solutions from the moment employees with their different backgrounds join forces. Supporting diversity means, in particular, recognizing differences in gender, origin, age, religion, physical abilities, and sexual orientation, as well as ensuring that no discrimination occurs. However, as can be read in the chapter Imple-

mentation, the percentage of female employees at Hirschvogel lies at less than 20%.

In order to promote women, in particular, at Hirschvogel, the Hirschvogel Business Network was founded in the fall of 2021 on the initiative of six female employees. The Hirschvogel Business Network is aimed at all ambitious female employees who want to help shape the future of Hirschvogel in a responsible manner. Today, the network is managed by a core team of five, made up of female employees from different areas of the company.



Number of members in the Hirschvogel Business Network

As an active part of a large network, female employees benefit from the experience, knowledge, and contacts that each member brings to the network. The goal of the Hirschvogel Business Network is for female colleagues to empower each other as well as to position themselves and become visible within the company. In addition, members can participate in exclusive events that deal with topics specifically for women in the working world. Besides these special member events, such as training sessions, meet-ups, and General Meetings, the core team also regularly organizes presentations aimed at all employees in the company, for instance to raise diversity awareness. Furthermore, the core team is present at events for schoolgirls, such as Girls' Day.

Review of exclusive member events:

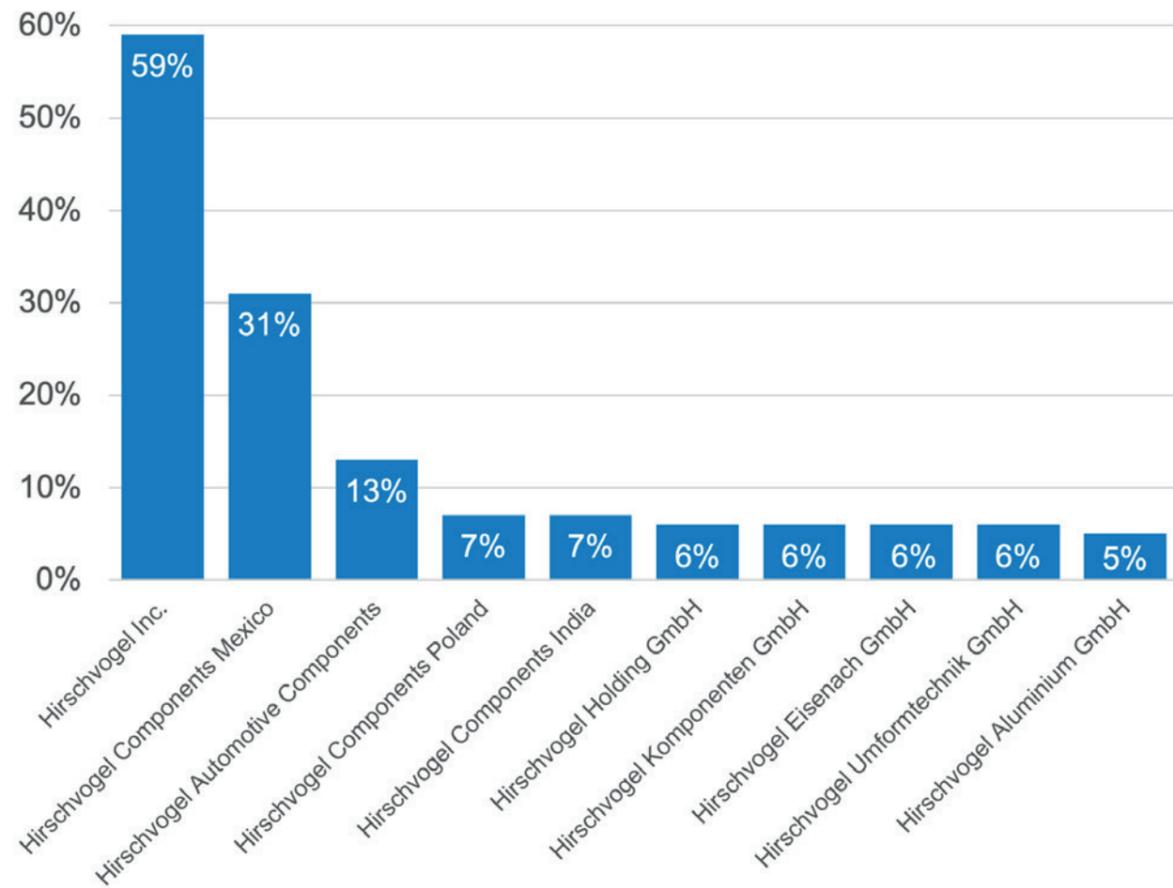
- General Meetings
- Network meetings
- Workshops and training sessions
- Meet-ups

Review of open events for all employees:

- Book readings
- Presentation at Hirschvogel events (for example, Girls' Day, Girls For Technology Camp)
- External presentations
- Discussion rounds with external experts
- Panel discussions

## EMPLOYEE FLUCTUATION

The shortage of skilled workers is already omnipresent – and the automotive industry as well as its suppliers are no exception. To successfully counter this deficiency, the Hirschvogel Group focuses on two main pillars when it comes to personnel retention - firstly, retaining its own talent within the company and, secondly, keeping valuable knowledge within the company for as long as possible.



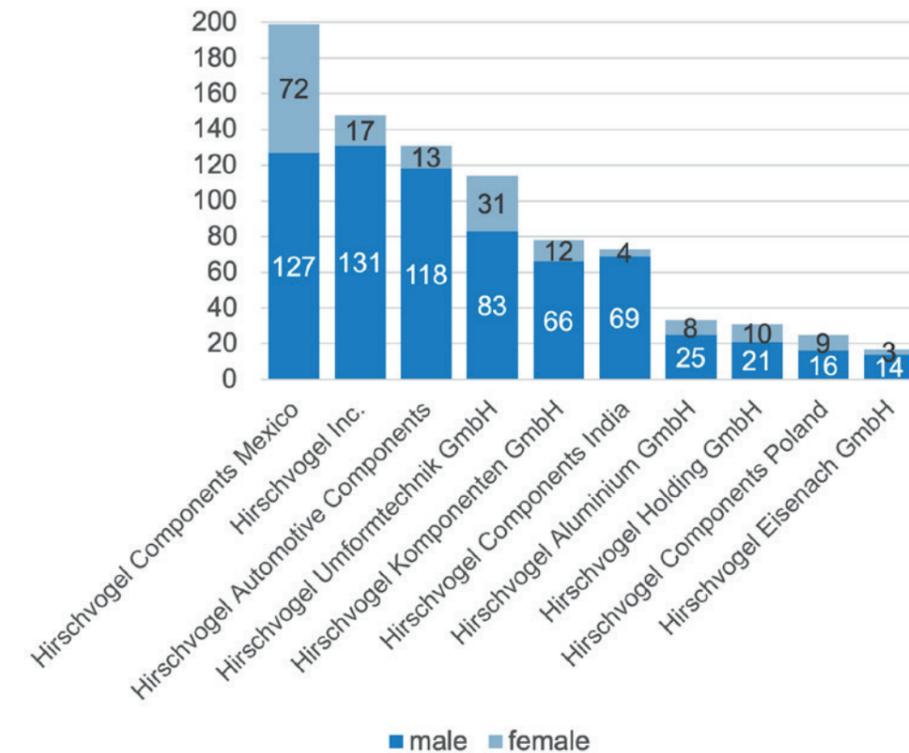
Fluctuation rate per plant at the Hirschvogel Group

|                                   | 0-24       | 25-34      | 35-44      | 45-54     | 55+       | Total      |
|-----------------------------------|------------|------------|------------|-----------|-----------|------------|
| Hirschvogel Inc.                  | 23         | 47         | 41         | 38        | 22        | 171        |
| Hirschvogel Components Mexico     | 31         | 70         | 29         | 14        | 2         | 146        |
| Hirschvogel Automotive Components | 28         | 74         | 23         | 4         | -         | 129        |
| Hirschvogel Umformtechnik GmbH    | 15         | 36         | 22         | 7         | 27        | 107        |
| Hirschvogel Komponenten GmbH      | 8          | 25         | 13         | 5         | 6         | 57         |
| Hirschvogel Components India      | -          | 23         | 6          | 1         | -         | 30         |
| Hirschvogel Eisenach GmbH         | 3          | 6          | 6          | 4         | 6         | 25         |
| Hirschvogel Components Poland     | 1          | 12         | 3          | 2         | 1         | 19         |
| Hirschvogel Holding GmbH          | -          | 4          | 6          | 1         | 2         | 13         |
| Hirschvogel Aluminium GmbH        | 2          | 6          | 1          | -         | 3         | 12         |
| <b>Total</b>                      | <b>111</b> | <b>303</b> | <b>150</b> | <b>76</b> | <b>69</b> | <b>709</b> |

Age structure of people leaving the Hirschvogel Group

The fluctuation rate in 2022 was relatively low. Only in the plants in the USA and Mexico was a comparatively high employee turnover observed. In the USA, this can be attributed to a complete restructuring of the plant and the very open labor law. In Mexico, on the other hand, the amendment to the Temporary Employment Act is

the main reason for the increased fluctuation rate. In addition, 166 employees were in semi-retirement in 2022. Hirschvogel enables long-serving employees to prepare for retirement, but at the same time still bring added value to the company by passing on valuable knowledge to younger colleagues.



People joining the Hirschvogel Group according to gender

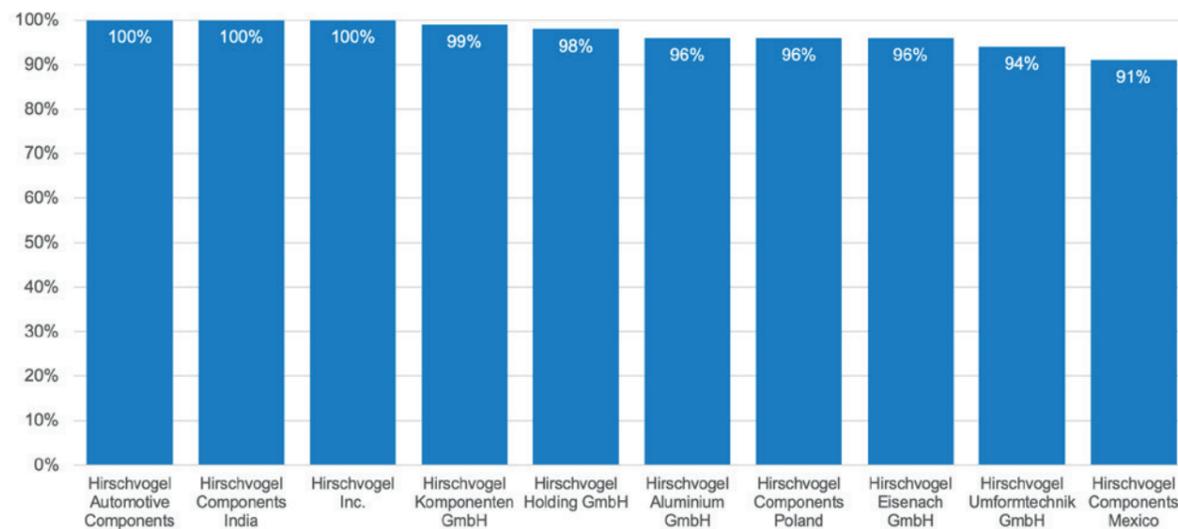
|                                   | 0-24       | 25-34      | 35-44      | 45-54     | 55+       | Total      |
|-----------------------------------|------------|------------|------------|-----------|-----------|------------|
| Hirschvogel Automotive Components | 36         | 63         | 25         | 1         | 6         | 131        |
| Hirschvogel Aluminium GmbH        | 4          | 12         | 15         | 2         | -         | 33         |
| Hirschvogel Components India      | 12         | 50         | 11         | -         | -         | 73         |
| Hirschvogel Components Mexico     | 48         | 97         | 39         | 13        | 2         | 199        |
| Hirschvogel Components Poland     | 5          | 12         | 7          | -         | 1         | 25         |
| Hirschvogel Eisenach GmbH         | 3          | 4          | 5          | 4         | 1         | 17         |
| Hirschvogel Holding GmbH          | 3          | 13         | 10         | 5         | -         | 31         |
| Hirschvogel Komponenten GmbH      | 14         | 44         | 14         | 6         | -         | 78         |
| Hirschvogel Umformtechnik GmbH    | 25         | 57         | 22         | 9         | 1         | 114        |
| Hirschvogel Inc.                  | 23         | 49         | 37         | 24        | 15        | 148        |
| <b>Total</b>                      | <b>173</b> | <b>401</b> | <b>185</b> | <b>64</b> | <b>26</b> | <b>849</b> |

Age structure of people joining the Hirschvogel Group

## FEEDBACK TO AND FROM EMPLOYEES

The Hirschvogel Group attaches particular importance to employee feedback. After all, this is the only way to secure the company's existence and success in the long term. All employees have the opportunity to express criticism and/or praise as part of the obligatory annual appraisal with their respective leaders. This feedback helps all participants enormously in identifying strengths and

weaknesses in a transparent manner and at an early stage, and in subsequently deriving measures, both to remedy grievances and to further strengthen positive aspects. The appraisal rate is the key indicator of the extent to which feedback is provided to and from employees, showing the percentage of appraisals that employees of the Hirschvogel Group receive on a regular basis.



Average appraisal rate per plant at the Hirschvogel Group

|                                   | Apprentice     | Direct industrial | Indirect salaried | Indirect industrial | Total         |
|-----------------------------------|----------------|-------------------|-------------------|---------------------|---------------|
| Hirschvogel Automotive Components | -              | 100.00%           | 100.00%           | 100.00%             | 100.00%       |
| Hirschvogel Aluminium GmbH        | 100.00%        | 94.95%            | 98.07%            | 94.01%              | 95.97%        |
| Hirschvogel Components India      | -              | 100.00%           | 100.00%           | 100.00%             | 100.00%       |
| Hirschvogel Components Mexico     | -              | 88.31%            | 93.00%            | 96.51%              | 90.69%        |
| Hirschvogel Components Poland     | -              | 88.75%            | 98.75%            | 98.96%              | 95.70%        |
| Hirschvogel Eisenach GmbH         | 100.00%        | 94.68%            | 97.64%            | 94.57%              | 95.67%        |
| Hirschvogel Holding GmbH          | 100.00%        | -                 | 97.72%            | -                   | 97.50%        |
| Hirschvogel Komponenten GmbH      | -              | 99.41%            | 97.48%            | 98.40%              | 98.57%        |
| Hirschvogel Umformtechnik GmbH    | 100.00%        | 93.97%            | 93.46%            | 93.88%              | 94.12%        |
| Hirschvogel Inc.                  | -              | 100.00%           | 100.00%           | -                   | 100.00%       |
| <b>Total</b>                      | <b>100.00%</b> | <b>96.22%</b>     | <b>96.91%</b>     | <b>95.59%</b>       | <b>96.43%</b> |

Average appraisal rate according to employment position at the Hirschvogel Group

The corporate culture of the Hirschvogel Group also offers all employees the opportunity to continuously improve the company and thus also their own workplace, as well as to develop and expand on their own potential. In this context, it is important that employees can communicate their ideas for stabilizing or improving processes, for occupational health and safety, for environmental protection, for resource efficiency, and for many other topics in an uncomplicated and acces-

sible manner. The prerequisite in each case is that the ideas have a sustainable impact and added value for the company. These ideas are recorded and automatically managed in a digital, globally standardized process (I-Box), to which all employees have access at all times. This knowledge database makes all ideas transparent and allows them to be multiplied across the entire Group. This process is supported by idea managers in all plants.

## APPRENTICESHIPS/STUDIES

After the first production hall was relocated from the center to the outskirts of Denklingen, the Training Center was founded at the birthplace of the company. Since then, we have been training our young talent under the best conditions in this state-of-the-art building. Subsequently, additional Training Centers were established in Marksuhl (Thuringia), China, the USA, and Mexico. Hirschvogel's approach to apprenticeship training worldwide is to introduce the next generation of employees to practical work at a very early stage, which is facilitated by the proximity to production. In addition, our young people also learn company-specific skills early on, thereby contributing to employee retention. To prevent Hirschvogel's rural location at the lead plant in Denklingen from becoming a location disadvantage, Hirschvogel even offers its own bus for industrial/technical

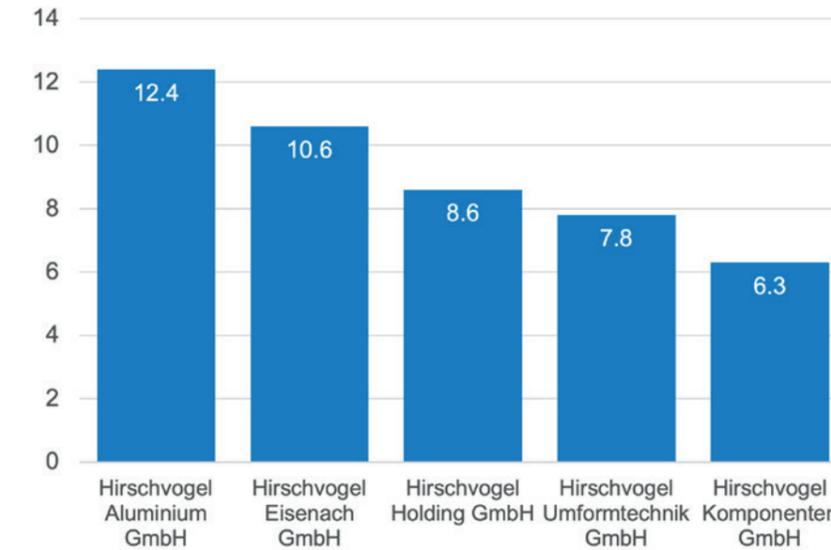
apprentices to ensure that an apprenticeship at Hirschvogel is not ruled out due to insufficient mobility in the region.

In addition to providing apprenticeships in its own training facilities, Hirschvogel also supports students at the Baden-Württemberg Cooperative State University (DHBW) in Ravensburg and the Gera-Eisenach Cooperative State University in the form of dual Bachelor's and Master's degree programs, as well as the subsequent prospect of a permanent position in the company.

The Frank Hirschvogel Foundation supports young people during their apprenticeship or studies through projects, scholarships, and awards.



Training at Hirschvogel includes online and presence formats, depending on requirements and expediency. This dual approach enables all employees to benefit from the wide range of professional development training on offer – even across locations.



\*Data only available for the German plants of the Hirschvogel Group

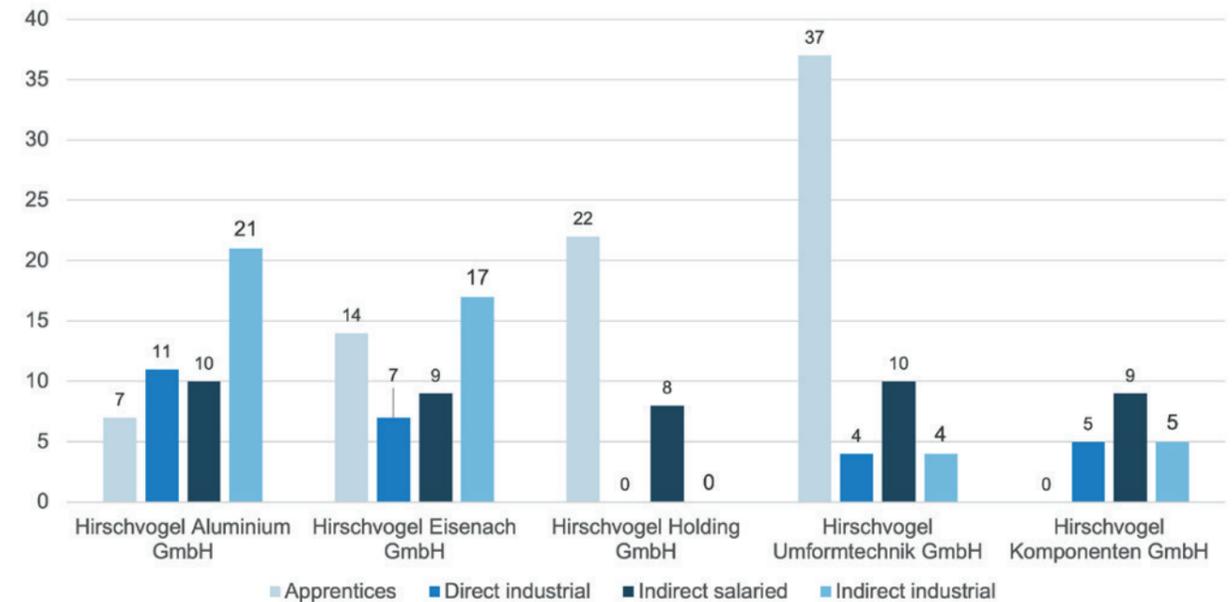
Average hours spent on professional development at each plant of the Hirschvogel Group

## PROFESSIONAL DEVELOPMENT OF EMPLOYEES

Not only apprenticeship training, but also ongoing professional development for all employees is important to the Hirschvogel Group. Hirschvogel offers a wide range of professional development opportunities in order to provide continuous training for its employees.

These training measures include:

- induction program for new employees,
- onboarding of new leaders,
- an open course program for improving technical, methodological, and social skills,
- mentoring,
- a trainee program for people starting their careers,
- work & travel opportunities in cooperation with the international Hirschvogel plants,
- Hirschvogel Management Training (HMT) for new leaders,
- in-house training platform (SuccessFactors) as a supplemental learning management system,
- and
- the OpEx Academy with its training program on lean methods and leadership behavior within the Hirschvogel Production System (Operational Excellence).



\*Data only available for the German plants of the Hirschvogel Group

Average hours spent on professional development according to employment position at the Hirschvogel Group

## WORK-LIFE BALANCE

It is important to Hirschvogel to enable work to coexist with employees' family and private life. In the administrative area, employees have the option of working flexibly from home, with the necessary technical equipment provided by Hirschvogel. The flexitime working model, which has been established in the company for years, also contributes to a high degree of flexibility. It is not only the individual employee, but also the families of the employees that are the focus at Hirschvogel. The company fulfills this commitment in the form of numerous events and activities (e.g., ski cups, plant tours, etc.), through which the Hirschvogel family grows together.

Family Days are held at many Hirschvogel plants, where there is a special program for family members. For ex-

ample, games and face painting are organized for children, while a health check-up stand is offered for adults. The aim is to get to know each other better in a relaxed atmosphere and to spend an enjoyable time together.

Hirschvogel offers its employees plant tours for families and friends. In the extensive tour, the company is introduced before the visitors are then guided through the plant. This provides all participants with a deep and interesting insight into the company and its processes.

Hirschvogel also organizes sporting events with its employees, allowing them and their family members to compete in various disciplines.



## 8 GRI INDEX

Application Statement The Hirschvogel Group has reported the information specified in this GRI Index for the period from January 1, 2022 to December 31, 2022 with reference to the GRI Standards.  
 GRI 1 used GRI 1: Foundation 2021

| GRI Indicator                                  | Topic/Link  | Chapter  | Remarks           |
|--|---|--|-------------------|
| <b>GRI 2: GENERAL DISCLOSURES</b>              |   |  |                   |
| <b>The company and its reporting practices</b> |   |  |                   |
| 2-1  | Organization details  | The Hirschvogel Group                                |                   |
| 2-2  | Entities included in the organization's sustainability reporting            | The Sustainability Ambition of the Hirschvogel Group |                   |
| 2-3  | Reporting period, frequency, and contact point                              | The Sustainability Ambition of the Hirschvogel Group |                   |
| 2-4  | Restatements of information   |  |                   |
| 2-5  | External assurance  |  |                   |
| <b>Activities and workers</b>                  |   |  |                   |
| 2-6  | Activities, value chain and other business relationships                    | The Hirschvogel Group                                |                   |
| 2-7  | Employees   | Employee Support and Development                     | + KPI fluctuation |
| 2-8  | Workers who are not employees   | Employee Support and Development                     |                   |
| <b>Governance</b>                              |   |  |                   |
| 2-9  | Governance structure and composition  | The Hirschvogel Group                                |                   |
| 2-10   | Nomination and selection of the highest governance body                     |  |                   |
| 2-11   | Chair of the highest governance body  | The Hirschvogel Group                                |                   |
| 2-12   | Role of the highest governance body in overseeing the management of impacts |  |                   |
| 2-13   | Delegation of responsibility for managing impacts                           |  |                   |
| 2-14   | Role of the highest governance body in sustainability reporting             |  |                   |
| 2-15   | Conflicts of interest   |  |                   |
| 2-16   | Communication of critical concerns  |  |                   |
| 2-17   | Collective knowledge of the highest governance body                         |  |                   |

| GRI Indicator                           | Topic/Link   | Chapter  | Remarks |
|---|--|--|---------|
| 2-18                                    | Evaluation of the performance of the highest governance body                   |  |         |
| 2-19                                    | Remuneration policies  |  |         |
| 2-20                                    | Process to determine remuneration  |  |         |
| 2-21                                    | Annual total compensation ratio  |  |         |
| <b>Strategy, policies and practices</b> |  |  |         |
| 2-22                                    | Statement on sustainable development strategy                                  | <a href="#">The Sustainability Ambition of the Hirschvogel Group</a> |         |
| 2-23                                    | Policy commitments   |  |         |
| 2-24                                    | Embedding policy commitments   |  |         |
| 2-25                                    | Processes to remediate negative impacts  |  |         |
| 2-26                                    | Mechanisms for seeking advice and raising concerns                             |  |         |
| 2-27                                    | Compliance with laws and regulations   | <a href="#">In all chapters</a>                                      |         |
| 2-28                                    | Membership associations  |  |         |
| <b>Stakeholder engagement</b>           |  |  |         |
| 2-29                                    | Approach to stakeholder engagement   | <a href="#">The Sustainability Ambition of the Hirschvogel Group</a> |         |
| 2-30                                    | Collective bargaining agreements   |  |         |
| <b>GRI 3: Material topics</b>           |  |  |         |
| 3-1                                     | Process to determine material topics   | <a href="#">The Sustainability Ambition of the Hirschvogel Group</a> |         |
| 3-2                                     | List of material topics  | <a href="#">The Sustainability Ambition of the Hirschvogel Group</a> |         |
| 3-3                                     | Management of material topics  | <a href="#">The Sustainability Ambition of the Hirschvogel Group</a> |         |
| <b>GRI 200: Economy</b>                 |  |  |         |
| <b>GRI 201: Economic Performance</b>    |  |  |         |
| 201-1                                   | Direct economic value generated and distributed                                |  |         |
| 201-2                                   | Financial implications and other risks and opportunities due to climate change |  |         |
| 201-3                                   | Defined benefit plan obligations and other retirement plans                    |  |         |
| 201-4                                   | Financial assistance received from government                                  |  |         |

| GRI Indicator                             | Topic/Link   | Chapter   | Remarks |
|---|--|---|---------|
| <b>GRI 202: Market Presence</b>           |  |   |         |
| 202-1                                     | Ratios of standard entry level wage by gender compared to local minimum wage             |   |         |
| 202-2                                     | Proportion of senior management hired from the local community                           |   |         |
| <b>GRI 203: Indirect Economic Impacts</b> |  |   |         |
| 203-1                                     | Infrastructure investments and services supported  |   |         |
| 203-2                                     | Significant indirect economic impacts  |   |         |
| <b>GRI 204: Procurement Practices</b>     |  |   |         |
| 204-1                                     | Proportion of spending on local suppliers  |   |         |
| <b>GRI 205: Anti-corruption</b>           |  |   |         |
| 205-1                                     | Business locations assessed for risk related to corruption                               |   |         |
| 205-2                                     | Communication and training about anti-corruption policies and procedures anti-corruption |   |         |
| 205-3                                     | Confirmed incidents of corruption and actions taken                                      |   |         |
| <b>GRI 206: Anti-competitive Behavior</b> |  |   |         |
| 206-1                                     | Legal actions for anti-competitive behavior, anti-trust, and monopoly practices          |   |         |
| 207-1                                     | Approach to tax  |   |         |
| 207-2                                     | Tax governance, control and risk management  |   |         |
| 207-3                                     | Stakeholder engagement and management of concerns relating to tax                        |   |         |
| 207-4                                     | Country-by-country reporting   |   |         |
| <b>GRI 300: ENVIRONMENT</b>               |  |   |         |
| <b>GRI 301: Materials</b>                 |  |   |         |
| 301-1                                     | Materials used by weight or volume   | <a href="#">Sustainable Products and Technologies</a> |         |
| 301-2                                     | Recycled input materials used  | <a href="#">Sustainable Products and Technologies</a> |         |
| 301-3                                     | Reclaimed products and their packaging materials   |   |         |

| GRI Indicator                       | Topic/Link  | Chapter              | Remarks                        |
|-------------------------------------|---|----------------------|--------------------------------|
| <b>GRI 302: Energy</b>              |   |                      |                                |
| 302-1                               | Energy consumption within the organization  | Energy and Emissions |                                |
| 302-2                               | Energy consumption outside the organization   |                      | CO <sub>2</sub> instead of MWh |
| 302-3                               | Energy intensity  | Energy and Emissions |                                |
| 302-4                               | Reduction of energy consumption   | Energy and Emissions |                                |
| 302-5                               | Reduction in energy requirements of products and services   | Energy and Emissions |                                |
| <b>GRI 303: Water and Effluents</b> |   |                      |                                |
| 303-1                               | Water as a shared resource  |                      |                                |
| 303-2                               | Management of water discharge-related impacts   |                      |                                |
| 303-3                               | Water withdrawal  |                      |                                |
| 303-4                               | Water discharge   |                      |                                |
| 303-5                               | Water consumption   |                      |                                |
| <b>GRI 304: Biodiversity</b>        |   |                      |                                |
| 304-1                               | Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas |                      |                                |
| 304-2                               | Significant impacts of activities, products and services on biodiversity  |                      |                                |
| 304-3                               | Habitats protected or restored  |                      |                                |
| 304-4                               | IUCN Red List species and national conservation list species with habitats in areas affected by operations                                |                      |                                |
| <b>GRI 305: Emissions</b>           |   |                      |                                |
| 305-1                               | Direct (Scope 1) GHG emissions  | Energy and Emissions |                                |
| 305-2                               | Energy indirect (Scope 2) GHG emissions   |                      |                                |
| 305-3                               | Other indirect (Scope 3) GHG emissions  |                      |                                |
| 305-4                               | GHG emissions intensity   | Energy and Emissions |                                |
| 305-5                               | Reduction of GHG emissions  | Energy and Emissions |                                |

| GRI Indicator                                     | Topic/Link   | Chapter                          | Remarks           |
|---|--|----------------------------------|-------------------|
| 305-6   | Emissions of ozone-depleting substances (ODS)  |                                  | not relevant      |
| 305-7   | Nitrogen oxides (NOX), sulfur oxides (SOX), and other significant air emissions                    |                                  | not relevant      |
| <b>GRI 306: Waste</b>                             |  |                                  |                   |
| 306-1   | Waste generation and significant waste-related impacts   |                                  |                   |
| 306-2   | Management of significant waste-related impacts  |                                  |                   |
| 306-3   | Waste generated  |                                  |                   |
| 306-4   | Waste diverted from disposal   |                                  |                   |
| 306-5   | Waste directed to disposal   |                                  |                   |
| <b>GRI 308: Supplier Environmental Assessment</b> |  |                                  |                   |
| 308-1   | New suppliers that were screened using environmental criteria                                      |                                  |                   |
| 308-2   | Negative environmental impacts in the supply chain and actions taken                               |                                  |                   |
| <b>GRI 400: SOCIAL</b>                            |  |                                  |                   |
| <b>GRI 401: Employment</b>                        |  |                                  |                   |
| 401-1   | New employees and employee fluctuation   | Employee Support and Development | + KPI fluctuation |
| 401-2   | Benefits provided to full-time employees that are not provided to temporary or part-time employees |                                  |                   |
| 401-3   | Parental leave   | Employee Support and Development |                   |
| <b>GRI 402: Labor/Management Relations</b>        |  |                                  |                   |
| 402-1   | Minimum notice periods regarding operational changes   |                                  |                   |
| <b>GRI 403: Occupational Health and Safety</b>    |  |                                  |                   |
| 403-1   | Occupational health and safety management system   | Occupational Health and Safety   |                   |
| 403-2   | Hazard identification, risk assessment, and incident investigation                                 | Occupational Health and Safety   |                   |
| 403-3   | Occupational health services   | Occupational Health and Safety   |                   |
| 403-4   | Worker participation, consultation, and communication on occupational health and safety            | Occupational Health and Safety   |                   |

| GRI Indicator  | Topic/Link   | Chapter                          | Remarks |
|--|--|----------------------------------|---------|
| 403-5  | Worker training on occupational health and safety  | Occupational Health and Safety   |         |
| 403-6  | Promotion of worker health   | Occupational Health and Safety   |         |
| 403-7  | Prevention and mitigation of occupational health and safety impacts directly linked by business relationships  |                                  |         |
| 403-8  | Workers covered by an occupational health and safety management system   |                                  |         |
| 403-9  | Work-related injuries  |                                  |         |
| 403-10   | Work-related ill health  |                                  |         |
| <b>GRI 404: Training and Education</b>                           |  |                                  |         |
| 404-1  | Average hours of training per year per employee  | Employee Support and Development |         |
| 404-2  | Programs for upgrading employee skills and transition assistance   | Employee Support and Development |         |
| 404-3  | Percentage of employees receiving regular performance and career development reviews                           | Employee Support and Development |         |
| <b>GRI 405: Diversity and Equal Opportunity</b>                  |  |                                  |         |
| 405-1  | Diversity of governance bodies and employees   | Employee Support and Development |         |
| 405-2  | Ratio of basic salary and remuneration of women to men   | Employee Support and Development |         |
| <b>GRI 406: Non-discrimination</b>                               |  |                                  |         |
| 406-1  | Incidents of discrimination and corrective actions taken   |                                  |         |
| <b>GRI 407: Freedom of Association and Collective Bargaining</b> |  |                                  |         |
| 407-1  | Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk |                                  |         |
| <b>GRI 408: Child Labor</b>                                      |  |                                  |         |
| 408-1  | Operations and suppliers at significant risk for incidents of child labor                                      |                                  |         |
| <b>GRI 409: Forced or Compulsory Labor</b>                       |  |                                  |         |
| 409-1  | Operations and suppliers at significant risk for incidents of forced or compulsory labor                       |                                  |         |

| GRI Indicator                                | Topic/Link   | Chapter | Remarks |
|--|--|---------|---------|
| <b>GRI 410: Security Practices</b>           |  |         |         |
| 410-1  | Security personnel trained in human rights policies or procedures                            |         |         |
| <b>GRI 411: Rights of Indigenous Peoples</b> |  |         |         |
| 411-1  | Incidents of violations involving rights of indigenous peoples                               |         |         |
| <b>GRI 413: Local Communities</b>            |  |         |         |
| 413-1  | Operations with local community engagement, impact assessments, and development programs     |         |         |
| 413-2  | Operations with significant or potential negative impacts on local communities               |         |         |
| <b>GRI 414: Supplier Social Assessment</b>   |  |         |         |
| 414-1  | New suppliers that were screened using social criteria                                       |         |         |
| 414-2  | Negative social impacts in the supply chain and actions taken                                |         |         |
| <b>GRI 415: Public Policy</b>                |  |         |         |
| 415-1  | Political contributions  |         |         |
| <b>GRI 416: Customer Health and Safety</b>   |  |         |         |
| 416-1  | Assessment of the health and safety impacts of products and service categories               |         |         |
| 416-2  | Incidents of non-compliance concerning health and safety impacts of products and services    |         |         |
| <b>GRI 417: Marketing and Labeling</b>       |  |         |         |
| 417-1  | Requirements for product and service information and labeling                                |         |         |
| 417-2  | Incidents of non-compliance concerning product and service information and labeling          |         |         |
| 417-3  | Incidents of non-compliance concerning marketing communications                              |         |         |
| <b>GRI 418: Customer Privacy</b>             |  |         |         |
| 418-1  | Substantiated complaints concerning breaches of customer privacy and losses of customer data |         |         |



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