

# Sustainability Report 2023

Ganz Transformers and Electric Rotating Machines Ltd. and GTVF Acélszerkezetgyártó Kft.



# Content

1.	Introduction by the CEO	3
2.	About Ganz	4
2.1.	Highlights	4
2.2.	Introduction to Ganz	4
2.3.	Activities and locations of Ganz	4
2.4.	Products of Ganz	6
2.5.	Conferences, awards, memberships, and associations	8
3.	Sustainability at Ganz	9
3.1.	Key pillars and themes of Ganz's sustainability strategy	9
3.2.	Connection to the UN Sustainable Development Goals (UN SDGs)	10
3.3.	Stakeholders of Ganz	10
3.4.	Materiality analysis: material topics at Ganz	11
3.5.	Environmental commitments of Ganz	13
3.6.	Energy and greenhouse gas management - aiming to reduce Ganz's carbon footprint	14
3.7.	Circularity – on the path to a circular economy	20
3.8.	Pollution prevention	26
3.9.	Procurement practices	27
3.10.	Digitisation, innovation	29
4.	Social responsibility	30
4.1.	Social commitments of Ganz	31
4.2.	Employees in focus	32
4.3.	Health and Safety	37
4.4.	Quality management	40
5.	Governance and economic responsibility	41
5.1.	Governance commitments of Ganz	41
5.2.	Governance structure	41
5.3.	Integrating sustainability into corporate governance	42
5.4.	Ethical operation: Responsible business ethics	43
5.5.	Direct and indirect economic impacts	47
6.	Annexes	45
6.1.	ESG data	45
6.2.	GRI content index	50
7	Imprint	51





# **1. INTRODUCTION BY THE CEO**

### Dear Readers,

In 2022, the pioneer of transformer technology in Hungary – with a history that dates back more than 130 years as the first transformer in the work was built by Ganz in 1885 – our company launched its latest innovative technological brand called Ganz Intelligent Solutions. Our main aim with the Ganz Intelligent Solution brand was making the electricity industry more sustainable through intelligent transformers and the transformer market more efficient through the digital solutions of the 21st century.

We have discovered that these intelligent transformers can be the driving force for a sustainable turnaround in the energy market and a new industrial era based on renewable energy, as monitoring systems are also key for sustainability projects.

Following the reorganization of our company in 2020, this was one of our first and undoubtedly most significant steps to demonstrate that sustainability, innovation, and digitalization will play a central role in the new era of Ganz. Since then, in response to the increased market demand, we have extended the intelligent solution to other products in our portfolio, including electrical rotating machines.

We are all aware that in this fast-paced, ever-changing world with the economic, social, and environmental challenges that we are currently facing, digitalization alone is not an answer. That as a company committed to a greener future, to electrifying the heavy machinery industry and in line with the net-zero greenhouse gas emissions targets set by the European Union, we need to do even more.

Sustainability therefore is a strategic direction for Ganz, both in the short and long term.

On our journey so far, we looked at the broader picture and considered our whole operation from optimizing the energy efficiency of our processes, our facilities and paid a special attention to our people as well as their environment. So, the launch of Intelligent Solutions in 2022 has been followed by a string of similar initiatives and actions over the past year.

One of these efforts, our ESG report for 2023, took its final shape and is now in your hands.

We are proud of the fact that we prepared our first sustainability report with reference to the Global Reporting Initiative (GRI) Standards, with which we are right on track to be able to comply with the CSRD regulation.

As a company committed to environmental protection, sustainable operations, and energy production, we wanted to summarize and quantify the carbon footprint of the products we manufacture, as well as monitor our greenhouse gas emissions and make efforts to reduce these.

In addition to developing sustainable products and services, in 2023 we launched an Energy Optimization Programme with the primary objective to reduce natural gas consumption, thereby reducing Ganz's dependence on fossil fuels. As part of the improvement programme, we started to build a solar power plant with a total rated output of 2

MW at the 3-hectare site of our plant in Tápiószele, Hungary. Once operating in the second quarter of

2024, the power plant will be able to supply our transformer and rotating machine factories with renewable energy, enabling us to move to the next level of sustainable business operations. Then, from the second half of this year, we will electrify our technology by using steam generation, thus eliminating fossil fuels from our operation by the end of 2050.

Ganz's firm aim is also to reduce waste emissions and increase the proportion of recyclable materials as well as to make our supply chains shorter and more sustainable wherever it is possible. As a means for this, the production of welding steel structures for transformers was resumed in Szolnok in June 2023 to supply our factory in Tápiószele. It was a huge milestone in the life of Ganz, as we not only enabled many of our former workers to return to their old jobs but also reduced our supply risks, improved our quality assurance and manufacturing competitiveness.

All of this though, would not have been possible without our talented, professional, dedicated, and pioneering colleagues who are the engine, the most valuable assets of Ganz. This is exactly why creating an inclusive, ethical, safe, and modern environment for our employees at all levels of our activities is of utmost importance for our company. Just as it is equally important to provide several benefits, as well as to support and encourage our colleagues to attend professional conferences, exchange know-how and stay up to date with the latest trends and show their expertise both in international and domestic professional circles. In the last couple of years our colleagues have attended professional conferences worldwide, while Ganz is also member of several professionally recognized networks such as EASA and T&D Europe.

We are delighted that in the last couple of years the number of our employees has risen sharply, but also proud of the fact that a lot of our colleagues stayed with our company for many decades even through the toughest of times. Maintaining this trend and becoming an Employer of choice is in the centre of our short-term targets.

Ganz's goals are clear. The targets both for short- and long-term are set, and step by step we are working towards a greener, more sustainable and all in all a better future that is also energized by intelligent solutions.

On behalf of our employees and colleagues we would like to thank you for showing interest in Ganz and hope you will find our Company's first Sustainability report informative, relevant, and inspiring.

#### JAN PRINS Chief Executive Officer of Ganz

# 2. ABOUT GANZ

#### 2.1. Highlights



referred to collectively as the "Group" or "Ganz". Where it is necessary to distinguish between the two entities, they are referred to separately. The report does not include GTVF Export Fejlesztő Kft., as Ganz Transformers and Electric Rotating Machines Ltd. only has minority ownership of it. For the last 3 years, Ganz has been focusing on its research and development activities, successfully combining historical traditions with innovation through digitisation. As a result, in the autumn of 2022, Ganz Intelligent Solutions was launched, as a system for monitoring the condition of transformers. The system was extended to electrical rotating machinery, alongside the largest players in the market. Ganz is now not only a manufacturer but also a provider of services to the transformer and rotating machinery market.

### 2.2. Introduction to Ganz

For more than 145 years, Ganz factories have been active in a wide range of industrial production. One of Ganz's most important legacies is the design and manufacturing of electrical industrial products for the energy sector. Abraham Ganz set up his own company (Ganz Művek - later renamed Ganz Electricity Works in the late 1800s) in Buda in 1844, which became well-known internationally. Engineering innovation, development, and expert production management are integral parts of the company's tradition.

Since 2006, the company has been owned by Crompton Greaves Limited of India under the name CG Electric Systems Hungary Zrt. In July 2020, liquidation proceedings were initiated against CG Electric Systems Hungary Ltd., and Ganz Transformers and Electric Rotating Machines Ltd. (hereinafter Company) was established in the same year. The latter Company bought the Ganz factory in Tápiószele with its assets in a public auction and concluded employment contracts with nearly 300 former employees of the company. In the meantime, it maintained its technical standards, production facilities, intellectual capital, and performance capabilities.

As a result of the reorganization, after more than 15 years, the Company is now 100% Hungarian-owned again. It manufactures custom-made high-voltage electrical equipment, including transformers, motors, and generators, and provides related service activities for its customers at its plant in Tápiószele. The Company employs more than 400 people, making it a significant employer in the region.

In 2023, the Company decided to restart the temporarily inactive steel structure manufacturing activities in Szolnok. To this end, a subsidiary was established under the name GTVF Acélszerkezetgyártó Kft., which is operating with more than 45 employees.

The Ganz GTVF Kft. consists of Ganz Transformers and Electric Rotating Machines Ltd., as the parent company, and GTVF Acélszerkezetgyártó Kft., as a subsidiary. In the present Sustainability Report, these two entities are

# 2.3. Activities and locations of Ganz

Ganz Transformers and Electric Rotating Machines Ltd. has three factories and one head office. Power transformers and rotating machines are produced at the Tapiószele site (in two separate factory buildings), which is also the central site for the service activity.

Ganz Transformers and Electric Rotating Machines Ltd. operates the

Engineering innovation Development Expert production management Tradition

pressing plant at its Szolnok site and GTVF Acélszerkezetgyártó Kft. operates in Szolnok.

The design, manufacturing and servicing of the following products:

🛛 🚯 equipment for the generation, transmission, and

traction of electricity,

- 📀 transformers,
- 🚯 conventional and insulated switchgear,
- 🚯 gas-insulated appliances\*,
- 🔥 generators,
- 📀 motors,
- 📀 welded steel structures

The installation and commissioning of electrical substations.

\* The production of new gas-insulated appliances is inactive, only the extension and renovation of existing systems are carried out by Ganz.

#### Activities carried out by GTVF Acélszerkezetgyártó Kft.:

The design, manufacturing and maintenance of welded steel structures (for transformers, generators, motors and equipment needed for the generation, transmission and traction of electrical energy).







# 2.4. Products of Ganz

The Group has 4 business units: Power transformers, Rotating Machines, Services and Welding steel structures. Each business unit produces a different product or provides a different service. These are described briefly below.

# Customer focus and flexibility towards customers.



# **Power transformers**

The Power Transformers business unit is specialized in designing, manufacturing, and testing transformers for several applications in a wide range of powers from 20 to 600 MVA on 52-800 kV voltage levels (1,000 MVA for autotransformers). Every transformer is individually designed to comply with its specific requirements and applications.

The Power Transformer business unit has experienced electrical, mechanical, test engineers and well-qualified technicians at the manufacturing site in Tápiószele. Customers of Ganz can experience high and focused attention from the tender phase to the commissioning and site tests.

Ganz provides customized management tools that monitor the operating conditions of transformers to maximize performance and provide real-time information on desired system status points.

In addition, Ganz also offers a full range of after-sales services (installation, maintenance, refurbishment, and repairs of products worldwide).







# **Rotating machines**

Ganz manufactures a wide range of medium and high-voltage motors and synchronous generators. The scope of electric rotating machines' supply covers the full sphere of design and engineering as per the customer request, up to the local installation and commissioning supervision. All rotating equipment is individually tested. Type and special tests are also performed as per the manufacturing schedule.



# Services

Ganz Service Division maintains, refurbishes, and repairs transformers, motors, generators, air- and gas-insulated switchgear (AIS and GIS) and substations worldwide. As a total solution provider, the Service Division also delivers lifetime extension programs supported by condition-based monitoring systems, as well as numerous accessories and spare parts for all equipment. Moreover, it offers flexible, customized service solutions.

The Service Division also refurbishes motors, generators, and switchgears which were manufactured by Ganz in the last century, thereby extending the lifetime of these machines, therefore contributing to sustainability.

#### Portfolio of services:

- Testing and advice
- ♦ Installation and commissioning
- ♦ Maintenance
- 📀 Repair

- ✤ Refurbishment
- ♦ Spare parts availability
- Condition monitoring
- ♦ On-site oil treatment and oil refills





# Welding steel structures

At GTVF Acélszerkezetgyártó Kft.'s plant in Szolnok, welding steel structures or transformers are manufactured. Most of the production is carried out for the ransformer plant of Ganz Transformers and Electric Rotating Machines Ltd. in Tápiószele, but Szolnok plant will also take on assembly orders for other external customers.

More information about Ganz's products is available in this catalogue.



# 2.5. Conferences, awards, memberships, and associations

Ganz encourages its employees to attend professional conferences as participants, speakers, exhibitors or to take part in round-table discussions. As a result, Ganz employees often attend professional or industry events. The annual sustainability conference of Transformers Magazine or the Electrotechnical Conference and Exhibition in Siófok are just two examples.

# 2.5.1. Awards

#### Award for Sustainability





TRANSFORMERS MAGAZINE'S

Bureau Veritas Hungary Ltd., at its Sustainability Conference (May 2023) recognized Ganz Transformers and Electric Rotating Machines Ltd. with the "Award for Sustainability", for stepping on the path towards sustainability by defining the company's corporate carbon footprint. This award is given to those who take strategic professional steps towards achieving the global SDG targets.

#### 2.5.2. Memberships and associations

# A couple of Ganz employees are members of the CIGRE worldwide organisation.

CIGRE is a collaborative global community committed to the world's leading knowledge development programme for the creation and sharing of power system expertise. In CIGRE, several Ganz colleagues are involved in the working groups on digitisation, material recovery and life cycle analysis.

# Membership at the Hungarian Standardisation Body

Employees of Ganz are also involved in other professional associations. For example, Ganz is a member of the Hungarian Standardisation Body (Magyar Szabványosítási Testület), through which Ganz experts are involved in international standardisation processes in the electrical industry, in particular in the TC14 transformer working group of the International Electrotechnical Commission.

# Membership at The Electrical Apparatus Service Association

The Electrical Apparatus Service Association, Inc. (EASA) is an international trade organization of more than 1,700 electromechanical sales and service firms in nearly 70 countries. Through engineering and educational programs, EASA provides members with a means of keeping up to date on materials, equipment, best practices and stateof-the-art technology.

### Ganz is also a member of T&D Europe.

T&D Europe is the association of the European electricity transmission and distribution technology providers. The members of T&D Europe connect electricity producers and consumers by providing the complete range of products and services necessary to transmit and distribute electricity in high and medium voltages, between the producers and the end users.

#### T&D Europe membership

Ganz is proud to be the first company based in Eastern Europe to successfully join the T&D association. By becoming a member of T&D Europe, Ganz is gaining useful knowledge on how to operate in a more sustainable way and will also have an even better understanding of the decisions and processes regarding the energy market. With this knowledge, Ganz can support the climate goals set for 2050 through digital solutions and by making the T&D market more efficient.











International Electrotechnical Commission

# **3. SUSTAINABILITY AT GANZ**

The international energy landscape is evolving from one dominated by increasingly scarce fossil fuels with their negative effects on Planet Earth to one in which organizations are constantly hunting for alternative forms of energy. Ganz is one of those who want to contribute to the greener future. Ganz provides, among other products, high quality power transformers, helping its customers use electrical power efficiently and increase their industrial productivity and sustainability.

Ganz is committed to sustainable operations and is dedicated to achieving its economic goals in a sustainable way, in harmony with society and the environment. To achieve this in a well-structured framework, the Group started to develop its sustainability strategy in 2023.





Ganz's aim is to produce high quality products, to minimize its environmental impacts in a positive working atmosphere, valuing its employees.

# 3.1. Key pillars and themes of Ganz's sustainability strategy

The key pillars and focus areas of Ganz's adopted sustainability strategy were defined by the materiality analysis described in detail below in chapter 4.2. The final strategic focus areas are the following:



#### Walking the path step-by-step

#### Sustainability strategy and governance

Ganz defined several short-term (2024-2026), mid-term (2030) and some long-term (2050) targets in its strategy. As of now the goals and trajectories are set, however in order to go deeper and set an exact action plan, several analyses and studies have to be prepared. In Ganz's mind, its sustainability strategy is a constantly evolving strategy taking into account the momentum of the fast-changing environment around the company and also their possibilities. In order to realise its sustainability strategy in the future, Ganz is aware that it should become part of its business strategy as well, therefore the integration of sustainability into its governance structure has already been started. As of now within the Group, sustainability is the responsibility of the Environmental Engineer, who reports to the Site Development Manager. The Site Development Manager reports to the CEO as issues or topics arise. Reporting on sustainability KPIs and further sustainability topics will be part of Ganz's quaternal management meeting. Further information on the governance is provided in Chapter 7.

# 3.2. Connection to the UN Sustainable Development Goals (UN SDGs)

Our planet faces economic, social, and environmental challenges. To combat these, the Sustainable Development Goals (SDGs) define global priorities and aspirations for 2030. The 17 goals represent an opportunity to eliminate extreme poverty and put the world on a sustainable path.

Ganz's sustainability strategy is aligned with the UN SDGs. For each of its strategy and thus material topics, corresponding UN SDGs (where Ganz has the greatest influence and possibility for improvement) were determined, which is presented at each topic in this report.

#### **About the Report**

In its first Sustainability Report, Ganz intends to provide an overview of the sustainability aspects of its operations – including Ganz's sustainability status, its primary sustainability goals, and its efforts to achieve them.

#### The period covered by the Report

The reporting period for the present Report is financial year 2023 (01/01/2023-31/12/2023). However, as this is Ganz's first sustainability report, Ganz decided to include information about year 2021<sup>1</sup> and 2022<sup>2</sup> as well to provide information to the reader about the tendencies.

#### **Reporting frequency**

Ganz intends to publish its Sustainability Report annually.

#### **Boundary of the Report**

The Report covers the operations of the Ganz GTVF Kft. which consists of Ganz Transformers and Electric Rotating Machines Ltd., as the parent company and GTVF Acélszerkezetgyártó Kft., as a subsidiary, but does not include GTVF Export Fejlesztő Kft., as Ganz Transformers and Electric Rotating Machines Ltd. only has minority ownership of it. This Report summarises the sustainability performance of Ganz's 3 sites in Hungary for the year 2023.

#### **GRI** compliance

The Ganz GTVF Kft. reports the information cited in this GRI content index for the period 01/01/2023-31/12/2023 with reference to the GRI Standards.

#### External assurance

No third-party verification has been performed.

#### Date of publication of the report

The report was published in the second quarter of 2024.

# Contact point for questions regarding the Report

Ganz values the views of its readers. In case of any comments or suggestions about this Sustainability Report, please contact Ganz at info@ ganzelectric.com.

Material topics are covered in the individual chapters of the Report. ESG data tables, ESG indicators and the GRI index are provided at the end of the Report.

# 3.3. Stakeholders of Ganz

Ganz has identified several stakeholder groups. While some of these are internal, the majority are external.



The stakeholders highlighted in dark bluewere contacted during the materiality analysis. Figure 3. Ganz's stakeholders.

### 3.3.1. Stakeholder involvement

During 2023, in addition to the previous communication with stakeholders (e.g.: supplier audits, LinkedIn), a new channel was used to address and involve the stakeholders in the preparation of the sustainability strategy: a questionnaire was sent out to a selection of stakeholders (see Figure 5 above) to ask them about their perspective on the impacts of Ganz. It was a necessary first step in the process of the materiality analysis and Ganz's sustainability strategy. In the future, Ganz's plans and objectives include the regular engagement of and communication with stakeholders regarding sustainability impacts and efforts.

# 3.4. Materiality analysis: material topics at Ganz

In 2023, Ganz carried out its first materiality analysis to define its material topics, to channel the perspectives of its stakeholders, structure its first Sustainability Report and establish its sustainability strategy. Material topics: topics that represent the organization's most significant impacts on the economy, environment, and people, including impacts on their human rights.

This process was carried out with the involvement of external sustainability experts and with the cooperation and approval of senior management.

Impact assessment



Stakeholder involvement and analysis



Material topic

#### 1. Impact analysis:

In the course of the impact analysis, a deep internal and external analysis has been carried out, in which the status quo of Ganz was defined against its peers and a comprehensive examination of industry and legislative trends was prepared. The topics of sustainability on which Ganz has or could potentially have a direct or indirect impact, were determined based on these studies and the GRI topics. For each topic a list of impacts (positive and negative, real and potential and short-, medium- and long-term impacts) was identified, which were scored by Ganz's management based on their scale, scope, irremediable character and likelihood (in case of potential impacts). These impacts and main areas were established on the information about Ganz's operation, the analysis of the value chain, the comprehensive examination of industry and legislative trends.

#### 2. Stakeholder involvement and analysis:

Ganz identified its stakeholders before the start of the stakeholder involvement. Stakeholder groups, with which the Group interacts most closely during the day-to-day operations, were contacted during the stakeholder involvement. The list of stakeholders involved in the impact analysis process is presented in chapter 4.1.

Based on the results of the impact analysis carried out by the management, an online questionnaire was prepared to assess the opinions of the stakeholders. The online questionnaire consultation gave Ganz stakeholders the opportunity to articulate which sustainability impacts and topics they think the Group needs to address.

#### 3. Definition of material topics:

After the evaluation of the stakeholder questionnaire, the following material topics were determined based on the opinion of the stakeholders (result of consultation) and the extent of Ganz's impacts:

High priority topics	Medium priority topics	Low priority topics
Digitalization, innovation	Economic performance	Cyber security
Health and safety (including costomer health and safety)	Labor/Management relations	Market presence
Employment	Circurality (including materials, procurementand waste	Тах
Training and education	Supplier social assessment	Local communities
Health and safety (including greenhouse glasses)	Ethical operation	Air emissions (excluding GHG)
Indirect economic inpact		Marketing and labelling
Prevention of oilpollution (water and effluents)		Biodiversity
Supplier environmental assessment		

The result of the materiality assessment was overviewed and accepted by the management including the CEO.

These topics are presented in detail in this Report.

Since sustainability is a dynamically developing field, it is necessary to regularly review the relevance of the identified material topics. Therefore, Ganz will continue to monitor changes in the value chain or on the market and review the materiality assessment annually and update it if it deems necessary.

#### **Environmental responsibility**

To ensure a better, healthier future for the next generations, reducing impacts on the environment is an integral part of both Ganz's day-to-day operations and its sustainability strategy.

Besides reporting environmental performance in 2023, this chapter outlines Ganz's current environmental impacts, the extent of these impacts and its goals and plans to address them. Some of the measures Ganz has taken so far are highlighted as case studies, illustrating the progress achieved already.

As the composition and technical parameters of Ganz's products are mostly determined by the needs of its customers, constructive cooperation with customers and other partners is essential to realise Ganz's ambitions.

Ganz recognizes and understands the importance of environmental protection and manages this as a strategic question. The Group takes responsibility for the next generations, therefore, it is committed to the continuous improvement of the performance of its environmental management system and to minimising the impact of the Group on the environment. "We want to support the carbon-neutral challenges that the EU is facing. We want to lead by example, therefore, we need to address sustainability internally, as well as within our supply chain. Our customers are now putting more focus on the soft part of the business, and we are doing the same" –Jan Prins, Managing Director of Ganz.

Ganz is committed to the environment, digitisation, and energy sustainability, and continuously strives to produce its products with the lowest possible carbon footprint and to minimise the use of resources that have a negative impact on the environment. Ganz complies with all relevant legislation. There has been only one minor fire safety non-compliance issue in the last 3 years, in 2022. The non-compliance finding has been closed and the company has also been found to comply with the follow-up inspections by the authorities.

The top management of Ganz is committed to sustainable development and responsible operation.



# 3.5. Environmental commitments of Ganz

#### 2026 2024 2025 2030 2050 Carbon footprint calculations for Evaluate ESG risks of suppliers Conduct a feasibility study on the Reduction of energy consumption Eliminate fossil fuels from the the Group (Scope 1, 2 and 3) by Target: Evaluate 60% of top recycling potential of products at (absolute) operation in the long term the end of 2025 suppliers\*\*\*\* by the end of 2024 the end of their life cycle (at Ganz Target: 20% reduction by 2030 Target: 30% reduction by 2030, 100% fossil-free operations by 2050 KPI: Percentage of evaluated sites) by the end 2026 KPI: Absolute total energy usage Carbon footprint calculations for the products by the end of 2025 Effective and full introduction of Increase the share of renewable selective waste collection system Set science-based emission electricity: by the end of 2024 (production and reduction targets (Scope 1, 2, 3) Tápiószele: 75% increase by 2030 office operation) and keeping the by the end of 2025 Whole organisation (including recycling rate at minimum 85% or Szolnok and Budapest): 50% Carbon footprint calculations for above increase by 2030 the products by the end of 2025 KPI: Percentage of waste collected KPI: Share of renewable energy for recycling compared to total Evaluate 60% of top suppliers\*\*\*\* Űuse in total energy use [%] waste [%] for sustainability in the selection and procurement of materials by Reduction of Scope 1 and 2 emis-Identify, investigate and eliminate the end of 2025 sions by 30% by 2030 all fuel, lubricant and hazardous KPI: Percentage of evaluated KPI: Market-based Scope 1&2 GHG substances spills, leakage, suppliers out of top suppliers [%] emissions [t CO2e] infiltration, potential contamination source regarding the whole Evaluate 60% of top transport Digitise (equip with monitoring operation by the end of 2024 companies for sustainability during system) 100% of Ganz's products KPI: Monitoring results (based on the selection process by the end by 2030 continuous (every half year) of 2025 KPI: Percentage of digitized monitoring of groundwater quality KPI: Percentage of evaluated transproducts [%] for oil, hydrocarbon components) port companies out of top transport Expand service portfolio:25% of the companies invited in the selection Assess the relevance of the service department's revenue from process [%] Manufacturing Execution System digital updating/renovation by 2030 Introduction of paperless business (MES) by the end of 2024 operations by the end of 2025 KPI: Percentage of the service KPI: Recycled paper as a department's revenue from digital percentage of total paper use [%] Focus on the promotion of sustainable products in sales processes Target: 100% of offers include a more sustainable option Űby the end of 2025 KPI: Offers contain a more sustainable option and its future positive impact has been demonstrated [%] Assess and examine how to further increase the lifetime of products and implement relevant measures by the end of 2025 Conduct a feasibility study on the Product-as-a-Service model by the end of 2025 Set targets based on 2024 data (in 2025) and investigate waste reduction options (production optimalisation) \*Commitments are mainly set for the whole group including all sites (Tápiószele, Szolnok and Budapest). All deviation is described in the respective commitment. \*\*Base year is 2023 in all cases, except for the reduction of waste. \*\*\*Ganz decided to only set a waste reduction target in 2025, because in 2023, the amount of waste generated was high due to the removal of stored materials from earlier activities, therefore it does not represent the magnitude of waste generated in normal operation. As of now it is not possible to separate this type of waste and waste generated by normal operations. Setting 2024 waste amounts as the baseline will provide a more realistic basis for monitoring waste reduction. \*\*\*\* Top suppliers are Ganz's primary suppliers that provide goods and services considered to be strategic and critical to the organization's

Commitment\*

operations

13

# 3.6. Energy and greenhouse gas management - aiming to reduce Ganz's carbon footprint

3.6.1. Energy management and renewable energyfootprint



In 2024, conscious and efficient energy and greenhouse gas management is crucial for every company. While ensuring cost-effective production, the reduction of climate impacts is key to securing a more liveable and sustainable future. The production of transformers and electric rotating machines is highly energy intensive, therefore energy and greenhouse gas emissions are material topics for the company.



### **ENERGY CONSUMPTION (GJ)**

Figure 4. Fuel and electricity consumption 2022-2023 (Group level data)



The values presented on Figure 6. reflect that Ganz's total energy consumption is significant and electricity takes almost 99% of it. With the growing production, only slight increase occurred in energy consumption due to the already started energy optimization processes. In order to further decrease and optimize energy consumption, Ganz focuses on 3 main areas: (1) Decrease energy consumption; (2) Use of renewable energy; (2) Decrease and eliminate fossil fuels.

#### **Energy consumption**

Ganz is committed to reduce its energy consumption by 20% by 2030. To be able to reach this, Ganz will increase energy efficiency in production and facility operation (first with the implementation of the Energy Use Optimization Programme – further information will be presented below), reduce waste energy and investigate further energy efficiency opportunities.

#### Use of renewable energy

Until 2023 no renewable energy was used, however in the future the electricity consumption will be partly covered by the photovoltaic park that is being installed. The objective of Ganz is to increase the share of renewable electricity by 75% in Tápiószele and by 50% for the whole Group by 2030.

#### Case study – Construction of Ganz's solar park in Tápiószele

Ganz Transformers and Electric Rotating Machines Ltd. is building a solar power plant with a total rated output of 2 MW on a 3-hectare site at its transformer and rotating machine manufacturing plant in Tápiószele, Hungary. Construction work on the solar power plant was officially launched on 18 October 2023. The project installation is crucial for Ganz's Energy Optimization Programme, a significant portion of the plant's energy needs will be supplied by renewable energy (solar power) from middle of 2024, enabling Ganz to move to the next level of sustainable business operations.

The next long-term plan for electrification is to install additional solar panels and to install energy storage system in 2024. Ganz's fundamental long-term goal is to develop self-sufficiency in energy.

#### Decreasing and eliminating fossil fuels

Long-term aim is to eliminate fossil fuels from production by 2050.

The Group's total fossil fuel consumption slightly decreased (by 8%) in 2023 compared to the previous year, but with the planned developments (see below), it is expected to be reduced to a greater extent in the next 1-2 years. The Group's target is 30% reduction by 2030 and the elimination of fossil fuels from its operations by 2050.

# Energy Optimization Programme – the first implementation steps towards the targets set

Ganz has set the goal of making the operation of its central factory more sustainable and significantly improving its energy efficiency over the next years. In accordance with the EU's objectives for reducing carbon emissions and promoting sustainable development, Ganz is committed to leading the way in sustainable business operations by launching the Energy Optimization Programme, which brings together the Group's investments in energy optimization and energy modernization. The primary objective of the programme is to reduce natural gas consumption, thereby reduce dependence on fossil fuels. Ganz intends to reduce its carbon emissions by implementing this Programme.



#### Focus is on energy efficient operations

As part of the improvement programme, Ganz intends to increase the energy-efficiency and the utilization rate of renewable energy in its manufacturing processes, as well as to improve the energy efficiency of its transformer and rotating machinery factory buildings. In addition to installing new, state-of-the-art mechanical engineering solutions, the Group intends to further reduce the amount of natural gas it uses by applying thermal insulation.





Renewable energy: The focus is on in-house generation.

#### The following measures will be implemented under the Energy Use Optimization Programme by the end of 2024:

- 🚯 Construction of a solar power plant in Tápiószele with a total rated output of 2 MW and the installation of an energy storage system
- 🚯 Building insulation and replacement of windows and doors in Tápiószele
- 📀 Technology electrification (electrification of steam generation, heating, and cooling)
- Installation of heat pumps
- Review of the complete HVAC system (in factory buildings) for efficiency

"The solar park planned next to our Tápiószele plant is the first and perhaps the most important step in our company's comprehensive sustainability efforts, with which we reduce our dependence on fossil fuels. Through the implementation of our Energy Use Optimization Programme, we can make the operation of our production unit more efficient so that we can simultaneously serve the needs of our partners more sustainably and more competitively." Gergely Gál, Managing Director of Ganz"

Ganz received nearly HUF 1.9 billion in non-repayable grants to support its sustainability goals under the Factory Rescue Programme, which provides support for large companies for investments in energy efficiency and energy production. The grant agreement signed with the Ministry of Foreign Affairs also supports the Group's international competitiveness.

Commitment	Baseline value*	Target year	Target year	Actions
Eliminate fossil fuels from the oper- ation in the long term Target: 30% reduction by 2030, 100% fossil-free operations by 2050 KPI: Fossil fuel used in all sites [GJ]	45,050 GJ	2030 and 2050	2030: 31,535 GJ 2050: 0 GJ	Implementation of the energy optimi- zation programme Reduce kerosene and its loss Feasibility study: Examination of how to fully replace fossil fuels
Reduction of energy consumption (absolute) Target: 20% reduction by 2030 KPI: Absolute total energy usage data [GJ]	57,454 GJ	2030	45,963GJ	Implementation of the energy optimi- zation programmeIncrease energy efficiency in produc- tion and facility operationReduce waste energyInvestigate further energy efficiency opportunities
Increase the share of renewable electricity: Tápiószele: 75% increase by 2030 Whole organisation (including Szol- nok and Budapest): 50% increase by 2030 KPI: Share of renewable energy use in total energy use [%]	Tápiószele: 0% Group: 0%	2030	Tápiószele: 75% Group: 50%	Implementation of the energy optimi- zation programme Deployment of the energy storage system and capacity Increasing in-house energy produc- tion

# 3.6.2. Energy efficiency of the products

The efficiency of power transformers is already relatively good (normally varies from 97 to 99%), but still, they have power losses. This is the reason why a transformer's output power is always slightly less than the transformer's input power. The Ecodesign Directive<sup>4</sup> aims to minimise this loss. Ganz transformers can easily fulfil the ecodesign requirements (Tier 2<sup>5</sup> from 2021), however Ganz is constantly working on the improvement of the efficiency of its products.

During the design phase, Ganz pays special attention to optimising the designs, ensuring that the material consumption is kept to a minimum while minimising the degree of loss. In addition, Ganz is able and willing to manufacture low-loss transformers, but their production requires significantly more raw materials, therefore LCA (life-cycle assessment) aspect needs to be considered. Furthermore, the scarcity of raw materials (e.g. copper) is already a concern, which is also an important factor for Ganz in the course of product development and production.

<sup>4</sup>COMMISSION REGULATION (EU) No 548/2014 of 21 May 2014 on implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to small, medium and large power transformers

<sup>5</sup>The EU Ecodesign Directive Tier 2 regulation is effective from 1st July 2021 (replacing Tier 1 regulation), setting more stringent requirements for transformers compared to Tier 1 (2015) regulation.

# 3.6.3. Carbon footprint: The management of greenhouse gas emissions



In order to decrease environmental impacts, firstly Ganz needs to define the magnitude of its impacts based on which it can set targets and actions and monitor its progress. Ganz has already calculated its Scope 1 and 2 corporate carbon footprint for 2023, and the Scope 3 carbon footprint for 2023 will be determined during 2024. The footprint will be updated yearly.

Commitment	Target year	Target	Actions	
Eliminate fossil fuels from the operation in the long term Target: 30% reduction by 2030, 100% fossil-free operations by 2050	45,050 GJ	Scope 3 corporate carbon footprint by the end of 2024	Corporate carbon footprint calculation: Scope 3	
KPI: Fossil fuel used in all sites [G Carbon footprint calculations for the Group (Scope 1, 2 and 3) by the end of 2025 J]	45,050 GJ	Updated corporate carbon footprint (Scope 1, 2 and 3) by the end of 2025	Update the corporate carbon footprint calculation: Scope 1, 2 and 3	

"Ganz is committed to the sustainability of the power industry and makes it a priority to monitor its carbon footprint. Ganz aims to manufacture its products with the lowest possible carbon footprint, thus contributing to the reduction of greenhouse gas emissions. Ganz strives to minimize the use of environmental resources in its operations and to prioritize their conservation." - Levente Ivanov, Environmental engineer at Ganz



# 3.6.3.1. Carbon footprint - emission figures

The Ganz corporate carbon footprint for 2023 is as follows:

Scope 1 and 2 emissions (GRI 305-1, GRI 305-2)	Unit	2023
Total Scope 1 and 2 (market-based)	ton CO <sub>2</sub> e	3,645
Scope 1	ton CO <sub>2</sub> e	2,544
Scope 2 (location based)	ton CO <sub>2</sub> e	532
Scope 2 (market-based)	ton CO <sub>2</sub> e	1,101
Scope 1 Scope 2 (location based) Scope 2 (market-based)	ton $CO_2e$ ton $CO_2e$ ton $CO_2e$	2,544 532 1,101

#### Table 2. Scope 1 and 2 emissions (Group level data)

The present result is the base year for Ganz's carbon footprint, meaning that the carbon footprint reduction targets are set against this baseline. The objective of Ganz is to reduce its Scope 1 and 2 emissions by 30% by 2030.

# Scope 1&2 reduction by 30% by 2030.

In 2023 several actions have been started to reduce the Scope 1&2 GHG emissions of the company. The energy optimization programme, the solar energy plant and all other energy related steps described in Chapter 'Energy management and renewable energy' will all contribute to decrease the carbon footprint of Ganz.

The production of welding steel structures for transformers was resumed in Szolnok in 2023 mainly to supply the Ganz's transformer plant in Tápiószele. These structures were previously sourced from Turkey, but GTVF Acélszerkezetgyártó Kft. in Szolnok (subsidiary of Ganz Transformers and Electric Rotating Machines Ltd.) has become a new supplier. This business change might slightly increase the Scope 1&2 carbon footprint but might decrease the Scope 3 emissions of the company by eliminating emissions from the transportation of these welding steel structures, which are the heaviest parts of the transformers.



#### Case study – Reducing carbon footprint during unloading materials

Some raw materials are delivered to Ganz sites in containers. The unloading of these goods has not been possible using in-house resources, but during 2024, a shipping container uploading station is being constructed. This way contracting an external partner for unloading will be unnecessary, which saves fuel and reduces GHG emissions and costs.

<sup>6</sup>Standards, methodologies, assumptions and/or calculation tools used: EN ISO 14064-1:2019

Source of emission factors: MVM, IPCC, GHG Protocol AR5, IEA, calculation from gas composition, DBEIS database, Association of issuing bodies (AIB) residual mix. Reporting period covered: 1 January 2023 - 31 December 2023

Organisational boundaries: The GHG report covers the operation of the whole Group.

# Further target is to be defined on a scientific basis.

The Group also commits itself to set a science-based emission reduction target (near-term and long-term, covering Scope 1, 2 and 3) by the end of 2025. The target will consider the requirements of the Science-Based Target Initiative (SBTi), however the validation is a discussion for the future.

Commitment	Baseline value*	Target year	Target	Actions
Reduction of Scope 1 and 2 emissions by 30% by 2030 KPI: Market-based scope 1&2 GHG emis- sions [t CO2e]	3,645 t CO <sub>2</sub> e	2030	2,551.5 t CO <sub>2</sub> e	Actions defined in the sub-chapter for energy.
Set science-based emission reduction targets (Scope 1, 2, 3) by the end of 2025		2025		Set a near-term target based on SBTi Set a long-term target based on SBTi (net-zero) SBTi validation is to be decided later

#### \*Base year is 2023.

GHG gases include refrigerants, such as sulphur hexafluoride (SF6) gas, which is used for some kind of transformers. At Ganz it has been phased out of production; however, it is still used at the Tápiószele site for the servicing of transformers produced previously to extend the lifetime of the transformers, reducing greenhouse gas emissions from the production of new transformers. The loss and the quantity used of sulphur hexafluoride is monitored and recorded. In 2023, no SF<sub>4</sub> was used, and no mass transfer occurred either.

## 3.6.3.2. Product carbon footprint

There is a growing internal and external demand to track the direct energy use and the carbon footprint associated with the production of each transformer product. This is a relatively long process, as the appropriate data collection methodology, sub-metrics and systematic monitoring needs to be established. Ganz has started working with an external partner to build the process and data collection needed to calculate the carbon footprint of the manufactured transformers.

Ganz plans to take a big step forward in 2024 regarding the upgrading of the data collection methodology (by automating the data collection matrix), the monitoring, and in the finalisation of the calculation. The Group's aim is to calculate the carbon footprint of each product and to provide potential customers with an estimated value.

Commitment	Target year	Actions
Carbon footprint calculations for the products	2025	Standardisation of determining the impact of Ganz's products (product carbon footprint calculation/Life Cycle Assessment /EPD (Environmental Product Declaration) certification))

# 3.7. Circularity – on the path to a circular economy



Establishing a circular economy is a major issue today, as it is becoming increasingly apparent over time that our resources are finite. This is also an issue for materials used by Ganz, such as copper amongst others. For this reason, Ganz contributes to circularity in several aspects of its own operation and through its value chain and plans to take this to a higher level.

A long-term vision of Ganz is to become circular. In this context, Ganz will conduct feasibility studies with the following aspects:

- Study about the Product-as-a-Service model (to shift from selling goods to selling services) and investigate the possibility and its impact by the end of 2025.
- Study on the recycling of products at the end of their life cycle (at Ganz sites) by the end of 2026 (further information in sub-chapter 'Material use').

Ganz can already offer a range of alternative options to its customers that promote circularity and have a lower environmental impact than conventional products (for example ester-filled transformers). For these positive attributes to be realised, there must be a demand for them, and customers must be willing to pay the additional costs associated with these benefits. Ganz believes that it requires (potential) customers to be aware of the alternatives and their economic, environmental, and social benefits. To foster it, sustainability aspects will be integrated into the standard sales process and an information leaflet will be prepared during 2024 on Ganz's products with sustainability benefits.

In addition, the Group will assess the demand for carbon neutral products and explore opportunities for international R&D cooperation.

Commitment	Target year	Target	Actions
Conduct a feasibility study on the Product- as-a-Service model by the end of 2025	2025		Conduct a feasibility study: investigate the possibility and impact
			Assess the demand for carbon neutral products by the end of 2024
Focus on the promotion of sustainable prod- ucts in sales processes. KPI: Offers contain a more sustainable op- tion and its future positive impact has been demonstrated [%]5	2025	100%	Explore opportunities for international R&D cooperation Prepare an informational <b>leaflet</b> to customers, partners, and suppliers by the end of 2024
			Include sustainability aspects into the sales process by the end of 2024

#### Decreasing and eliminating fossil fuels

The typical lifespan of Ganz products is 30-50 years, but maintenance can extend it. Ganz aims to further extend this lifespan by the digitisation of its products. For more information, refer to the 'Digitisation' chapter.

The lifespan of transformers can also be increased by using ester, as detailed in the 'Reducing Pollution' section. Ganz is ready to produce transformers with ester if demand appears for it on the market.

Since the ageing of transformers is essentially determined by the paper, improving the heat resistance of the paper can increase the lifetime of transformers. To this end, Ganz uses paper with higher heat-permeability in certain parts of the transformers (and can be further increased according to customer demand).

Commitment	Target year	Actions
Assess and examine		Assess and
how to further increase		examine how to
the lifetime of products	0005	further increase
and implement relevant	2025	the lifetime of
measures by the end of		products and set
2025		a target

The lifetime of rotating machines can be improved by insulation methods (impregnation of the windings). The technology used for the rotating machines is currently being renewed and will be upgraded, thereby increasing the lifetime.

Extending the lifetime of the products is of key importance to Ganz, therefore the Group will assess and examine the possibilities to offer products with longer lifetime.

#### 3.7.1. Material use

Ganz requires significant amounts of raw materials to operate and manufacture its products. The main raw materials that are incorporated into the products are copper, iron and steel, cellulose-based insulation materials (paper, prepreg, wood), oil, impregnation materials, insulating tapes and paints. In addition, other additives, such as porcelain or rubber-based accessories, are also present in the products, but their quantity is negligible compared to the total weight of the products.

Some part of copper, iron and steel purchased by Ganz is recycled - the extent of this is currently unknown, as manufacturers do not always disclose information on the recycled content of their products. Ganz's purchase conditions do not currently include the recycled content of these materials, but only the predefined chemical and physical properties of the materials. This requirement may become more stringent in the coming years. For this purpose, international working groups, involving Ganz colleagues, are currently developing a guideline for Life Cycle Analyses (LCA), which will make it easier for supplier companies to carry out LCA calculations. This should make it more realistic for Ganz to request LCAs from its suppliers and thus have more information on the composition of the materials it purchases.

# Promotion of sustainable options to generate demand.

Ganz aims to focus more on the promotion of sustainable products and options in sales processes. At this end, Ganz will carry out a feasibility study regarding the use of recycled and alternative materials by the end of 2024 and will offer products manufactured with recycled or alternative materials (as an option) in case of each individual transformer order by 2025.

Commitment	Target year	Target	Actions
Focus on the promotion of sustainable products in sales processes Target: 100% of offers include a more sustainable option by the end of 2025 KPI: Offers contain a more sustainable option and its future positive impact has been demonstrated [%]	2025	100%	Carry out a feasibility study regarding the use of re- cycled and alternative materials by the end of 2024 Offer products manufactured with recycled and/ or alternative materials in case of each individual transformer by 2025

#### The vast majority (around 95%) of Ganz products are recyclable or reusable at the end of their life cycle.

Copper, iron, and steel can be reused and recycled at the end of the lifecycle of the transformers. The end-of-life management of products is generally carried out by the customers or by Ganz contractors that dismantle and recycle products and handle them separated for the different materials. In the future, Ganz is considering recycling products at its sites, so Ganz will conduct a feasibility study about the recycling of products at the end of their life cycle.

Commitment	Target year	Actions
		Conduct a feasibility study: -Map the potential uses of recycled and reused
Conduct a feasibility study on the recycling potential of		resources and materials, assign costs
products at the end of their life cycle (at Ganz sites) by	2026	- Explore how to maximise the recyclability of the
		- Explore how to support customers in the recycling
		of transformers

Ganz aims to eliminate paper use in its offices by implementing a digital, paperless operation from 2025 and will satisfy its paper needs by recycled paper until the new system is set up.

Commitment	Target year	Target	Actions
Introduction of paperless business operations by the end of 2025 KPI: Recycled paper as a percentage of total paper use [%]	2025	100%	Use of 100% recycled paper by the end of Q2 2024 Introduction of paperless business operations by the end 2025

#### Oil and oil-related opportunities

Oil is an essential material for transformers, as power transformers are oil-cooled. This can be conventional mineral oil and biodegradable oil, or biofluids, like ester. Oil is also used in small amounts during the manufacturing of rotating machines to lubricate bearings.

Innovative product designs for a more sustainable future.

#### **Biofluid-immersed power transformers:**

The advantage of the ester transformer is that instead of using mineral oil, the transformer is filled with biodegradable ester, making transformer operation and end-of-life management more environmentally friendly. In addition, the carbon footprint of the ester is lower compared to the conventional version, and its use can further increase the lifetime of the transformer.

Biodegradable oils and fluids are used to provide safe solutions for special requirements of fire protection, environmental safety, space limitations and cost savings. Ganz was the pioneer in manufacturing synthetic ester-filled transformers for the Scandinavian market, and Ganz has the design rules for natural esters as well.

Ganz is proud of its ability to produce ester transformers and aims to produce more ester transformers in the future. To this end, Ganz is working to encourage customers to use this environmentally preferable oil. Digitised, biofluid-immersed power transformers could play a key role in the decoupling from oil and in the green turnaround of the energy market and electricity industry.

In recent years, more environmentally friendly, faster-degrading oils have also appeared on the market. These are not fire-safe like esters but are classified as quickly biodegradable (60% degradation in 28 days). Ganz can also produce transformers immersed in this type of oil if requested by customers.

Another important technology that supports sustainability is oil regeneration. The idea is to regenerate mineral oil, thereby greatly increasing the lifetime and usability of both the oil and the transformer. The Group has a special equipment to regenerate oil upon request.

Ganz aims to focus more on the promotion of sustainable products and options in sales processes. To this end, the Group will assess the possibilities on how to increase the demand for ester transformers by the end of 2024. This will help the Group to find efficient ways to promote this option.

Commitment	Target year	Target	Actions
Focus on the promotion of sustainable products			
in sales processes			
Target: 100% of offers include a more			Assess the possibilities on how to increase the demand
sustainable option by the end of 2025	2025	100%	for ester transformers by the end of 2024 - Conduct a
KPI: Offers contain a more sustainable option			study and collect relevant information
and its future positive impact has been			
demonstrated [%]			



# 3.7.2 Waste



As a result of the manufacturing processes, hazardous and non-hazardous wastes are generated.



# **TOTAL WASTE GENERATED (TONNE)**

Figure 5. Amount of waste generated (Group level data - excluding municipal waste from the Group and office waste from Budapest).

# WASTE GENERATED (TONNE) 2023



Figure 6. Amount and distribution of waste (production and non-production related) generated in 2023 (Group level data - excluding municipal waste from the Group and office waste from Budapest).

In 2023 Ganz started an extraordinary clean-up process in which it sorted out all previously collected and stored materials and further unusable products and materials. This resulted in a much higher magnitude of waste than it should be in normal operation (shown in the figure as non-production related waste).

The main types of hazardous waste are liquid waste (e.g. containing oil), hazardous waste packaging materials and vehicle-related waste, while the main types of non-hazardous waste are construction and demolition waste, metal waste and packaging waste.

Waste is collected according to the national regulation on-site and handed over to licensed 3rd parties for transportation and handling. In 2023, the waste recycling rate was 84%.

The Group's operations generate a considerable amount of waste that Ganz is planning to reduce by setting a waste reduction target for the Group. Ganz decided to only set a waste reduction target in 2025, because in 2023, the amount of waste generated was high due to the removal of stored materials from earlier activities, therefore it does not represent the magnitude of waste generated in normal operation. As of now it is not possible to separate this type of waste and waste generated by normal operations. Setting 2024 waste amounts as the baseline will provide a more realistic basis for monitoring waste reduction.

Unfortunately, exact data on the amount of municipal waste is not yet available, but an accurate data collection process is being developed. To ensure that the target setting is based on the most accurate data possible, Ganz is focusing on the implementation of accurate, detailed data collection in 2024.

In manufacturing, the separate collection of waste generated has been largely achieved by 2023 and the selective collection of office waste was introduced in 2023. Its full (all three sites) and effective implementation is the Group's objective for 2024. The efficiency improvement is planned to be achieved through the launch of an awareness raising campaign.

During production activities, Ganz requires the use of oil, which in turn demands industrial wipes. To reduce the amount of hazardous waste generated, reusable MEWA industrial wipes have been used since 2023 to replace disposable wipes. MEWA industrial wipes (textile) are a cost-effective and sustainable alternative to single-use products such as paper wipes.

Commitment	Baseline value*	Target year	Target	Actions
Effective and full introduction of selec-				Effective operation of separate waste
tive waste collection system by the end of				collection everywhere (full operation)
2024 (production and office operation) and				
keeping the recycling rate at minimum 85%	84%	2024	85% or above	
or above				
KPI: Percentage of waste collected for recy-				Awareness-raising campaigns among
cling compared to total waste [%]				employees

Set targets based on 2024 data (in 2025) and investigate waste reduction options (production optimalisation) KPI: To be defined based on 2024 data	2030	Investigate waste reduction options (production optimalisation) and set targets
(production optimalisation) KPI: To be defined based on 2024 data		and set targets

\*Base year is 2023.

# 3.8. Pollution prevention



#### **Oil pollution prevention**

Since oil is an important raw material in the manufacturing process of Ganz's products, oil is stored and used in large volumes (maximum storage capacity: 350 m3) at the Tápiószele site. All conditions are in place for the safe storage and handling of oil on site. Preventive measures used include handling instructions, decontamination equipment, oil traps, installed and mobile secondary containments.

In 2023, groundwater infiltration into the generator room was detected under the test bay, during the time of high groundwater levels, resulting in infiltrated water contaminated with oil. Affected water was pumped out of the room and handed over for treatment as hazardous waste. The cause of the oily groundwater leak into the building was identified and will be addressed in the second quarter of 2024, by injection of a sealant. In addition, a filter system was built, through which the infiltrated groundwater (if any) can be filtered and discharged into the storm water drain system. This provides double protection, as there is also an oil trap upstream of the discharge point from the site. To prevent similar incidents from occurring elsewhere on the site, Ganz will scan the entire operation for leakage, spillage, infiltration, or potential contamination sources and take restorative or precautionary action if necessary. As part of this, Ganz will conduct hydrocarbon testing in existing monitoring wells in the second quarter of 2024 and will take any necessary next steps based on the results.

Hydrocarbon pollution was detected on the site during the preparation for the construction of the solar farm. By analytical analysis, it is a proven historical contamination, which means that the source of this contamination is from the previous owner's activities. Since the detection of the contamination, the delimitation of the pollution has been initiated and is ongoing. Based on further results, Ganz will take the necessary steps (localisation, monitoring, bioremediation if necessary).

Commitment	Target year	Target	Actions
Identify, investigate and eliminate all fuel, lubri- cant and hazardous substances spills, leakage, infiltration, potential contamination source re- garding the whole operation by the end of 2024 KPI: Monitoring results (based on continuous (every half year) monitoring of groundwater quality for oil, hydrocarbon components)	2024	Below regulatory limit	Monitoring oil pollution and implement measures as needed (for example a Phase II environmental site assessment) Eliminate groundwater infiltration by injection of a sealant

The circulation and loading/unloading of heavy good vehicles may result in fuel discharge from vehicles onto the road surface. To retain the oil content in rainwater that may contaminate the factory site, oil traps have been installed in Tápiószele and are monitored weekly.

#### Water pollution prevention

The technology used by Ganz is not water-intensive, but it does involve water use and wastewater discharge. Water is sourced from drilled wells at the Tápiószele site, and from the mains at the Szolnok site and in Budapest. In case of Tápiószele, the extracted water is chlorinated and then sent to the water tower, from where the site is supplied with water.

Based on groundwater monitoring, the concentration of zinc in groundwater in the area is above the "D" limit of contamination for one well, therefore Ganz will continue the regular (semi-annual) monitoring for the next 4 years and comply with the requirements of the authority. The results of the monitoring confirm that the contamination on the site is stagnant, is not migrating and does not pose a risk to workers on the site or to people living in the immediate vicinity.

The production technology uses water (pre-treated with reverse osmosis) mainly for steam production. Besides, sanitary water is used at Ganz sites.

Ganz has its own wastewater treatment plant at the Tápiószele site, treating municipal and technological wastewater, discharging treated water into river Tápió. Ganz places great emphasis on precautionary measures, including the prevention of oil pollution. More information can be found in the "oil pollution prevention" subchapter.



#### WATER DISCHRAGE (M<sup>3</sup>)

Figure 7. Amount of water discharged (Group level data)

### 3.9. Procurement practices

Nowadays, environmental and social problems, emergencies, and disasters, such as earthquakes, hurricanes, global and local impacts of climate change, strikes, inadequate working conditions, etc. are all in the headlines. They often occur at a specific point in the value chain, but can also affect the whole value chain, order delivery and price, since they can lead to further economic and even social and environmental problems. In response to this, Ganz has set itself the goal of operating a more secure supply chain. To proactively monitor risks, from 2023 Ganz uses a software tool called Prewave. Using this software, Ganz aims to implement supplier risk management by monitoring ESG risks. Furthermore, this step can contribute to prepare Ganz to the upcoming national legal requirements regarding the due diligence of its Tier 1 supply chain, as it has been defined in the so called ESG regulation (Act CVIII of 2023, the ESG Act).

#### Managing supplier ESG risks for a more secure supply chain.

The Group is already assessing its new potential suppliers based on some sustainability criteria and the aim is to extend this to incorporate all relevant environmental and social aspects by the end of 2025.



Commitment*	Target year	Target	Actions
Evaluate 60% of top suppliers for sustainability in the selection and procurement of materials by the end of 2025 KPI: Percentage of evaluated suppliers out of top suppliers [%]	2025	60%	Audits and surveys of suppliers: extend/review the current survey
Evaluate 60% of top transport companies for sustainability during the selection process by the end of 2025 KPI: Percentage of evaluated transport compa- nies out of top transport companies invited in the selection process [%]	2025	60%	Create a survey and evaluate transport companies
Evaluate ESG risks of suppliers Target: Evaluate 60% of top suppliers by the end of 2024 KPI: Percentage of evaluated suppliers out of top suppliers [%]	2025	60%	Continuously assess and monitor suppliers' ESG risks (from 2024 Q2) — Ensuring the security of supply by using the Prewave tool

\*Top suppliers are Ganz's primary suppliers that provide goods and services considered to be strategic and critical to the organization's operations. As of now, it includes 80 Tier 1 suppliers.

In addition, Ganz is also working on diversifying its suppliers to maintain the security of supply. To this end, the production of steel products at the Szolnok site has been restarted.

#### Case study – Reducing supply chain risks by restarting production in Szolnok

The production of welding steel structures for transformers was resumed in Szolnok in June 2023 mainly to supply the Ganz's transformer plant in Tápiószele.

Resuming production was an important strategic move for Ganz. Manufacturing in Hungary shortens supply chains, reduces supply risks, and improves quality assurance and manufacturing competitiveness. As a result, Ganz can offer even greater quality, security and predictability to its customers.

"The resumption of production in Szolnok is another important milestone in the life of our company. The development of the site will further reduce our dependence on external suppliers. This will make manufacturing processes more efficient, supply chains shorter and more sustainable. We are confident that with our investment, we will actively contribute to the revival of Szolnok's industrial tradition and to the city's sustainability," - Gergely Gál, Managing Director of Ganz

# 3.10. Digitisation, innovation



Committed to a sustainable future, Ganz launched its modular condition monitoring system, known as GANZ Intelligent Solutions in 2022, for both new and already existing applications. Condition monitoring is described as a method to optimize equipment performance and lifecycle by using various measurement techniques. In line with its commitment to reduce carbon emissions, solutions of Ganz provide the opportunity to achieve new levels of efficiency. **Digitisation will make transformers last longer and prevent issues ahead of time, reducing maintenance costs, making them more efficient and sustainable.** This Ganz innovation enables condition-based maintenance, which extends equipment lifetime and reduces safety risks. It also ensures proactive measures to optimise efficiency, availability, safety, sustainability and reliability.

Increasing product lifetime through digitisation. Ganz's technological development contributes to the enhanced sustainability of the power industry by helping reduce costs, material consumption and carbon emissions through timely failure detection. Furthermore, its system supports sustainability projects via condition monitoring and data-driven decision-making, ensuring that the transformers that connect renewable energy plants to the grid operate correctly and that the energy produced is not wasted. These systems help prevent sudden faults and failures that would stop equipment from generating electricity, minimising interruption to electricity network operations.

#### Case study - Nationally recognised digitised monitoring system

In 2022, Ganz officially launched its digitised monitoring system. Since then, this innovative solution has been further developed and has been recognised by the players of the energy market and media: Ganz Intelligent Solutions was chosen as one of the most innovative projects in 2023 at the Factory of the Year project competition organised by one of Hungary's leading technological trade magazines, Gyártástrend.hu. Ganz will continue to seek new innovation potentials in the years ahead to ensure its products and manufacturing processes become more sustainable and efficient.



"As one of the key players in the energy industry, specifically the transformer market, our company's explicit goal, with the launch of Intelligent Solutions, with the intelligent transformers already manufactured and installed, and with the sustainable operation of our company, is to contribute to the green revolution in the electricity industry and to make the transformer market more efficient," -Jan Prins, managing director of Ganz.

#### **Rotating Machines**

In 2022, Ganz has decided to extend its Intelligent Solutions to other products in its portfolio, including electric rotating machines. By spring 2023, Ganz successfully developed the first intelligent rotating machine equipped with a digital condition monitoring system and with it launched the digital portfolio of the Rotating Machines business unit.

"Our aim is to promote the widespread adoption of condition monitoring systems. Sustainability, reducing carbon emissions and the ecological footprint, or ensuring the availability of electrical machines, is not just a passing trend in the market, it is a necessity. Gábor Farkas, Brand Manager of Ganz Intelligent Solutions

Equipping products with digital monitoring systems is a priority for Ganz and so the Group is committed that 100% of its products will be equipped with monitoring system by 2030 and 25% of the revenue of the service department revenue will come from digital updating/renovation. In addition, Ganz will also assess the relevance and usability of the Manufacturing Execution System (MES) in 2024.

Commitment	Baseline value*	Target year	Target	Actions
Digitise (equip with monitoring system) 100% of Ganz's products by 2030 KPI: Percentage of digitized products [%]	Rotating machines (RM): 0% Power transformers) PT: 92%	2030	100%	Plan the digitisation process
Expand service portfolio:25% of the service department's revenue from digital updating/ renovation by 2030 KPI: Percentage of the service department's revenue from digital updating/renovation [%]	0%	2030	25%	Plan the digitisation process
Assess the relevance of the Manufacturing Execution System (MES) by the end of 2024		2024		Assessing the relevance

\*Base year is 2023 in all cases.

# 4. SOCIAL RESPONSIBILITY

While preserving environmental values, Ganz is committed to operating in a socially responsible manner. This is a constant and prominent consideration in the decisions Ganz takes during its operations.

Ganz ensures non-discriminatory and ethical conduct at all levels of its activities, in compliance with both the national and international legal requirements and the principles of occupational safety, health and environmental awareness.

All employees of Ganz are aware of the sustainability policy of the Group and strive to abide by it and fully comply with it during their activities. The sustainability system of Ganz is reviewed annually, and employees receive continuous training.

Besides taking responsibility for its employees, Ganz also considers itself for its costumers and the users of its products, therefor Ganz places great emphasis on the quality and on the health and safety requirements of its products.



# 4.1. Social commitments of Ganz



\*Commitments are set for the whole group including all sites (Tápiószele, Szolnok and Budapest). \*\*Base year is 2023 in all cases.



# 4.2. Employees in focus



Human resources are amongst the most valuable assets of Ganz. As Ganz almost exclusively manufactures customised products, its employees also need specific skills. Ganz's factories would not successfully operate without highly qualified and experienced employees: technicians, technologists, and skilled workers.

Professional expertise, customer focus and a skilled, dedicated workforce

are the foundation and strength of Ganz's competitiveness. Ganz is proud of the fact that the number of engineers employed at the Group is higher than at other peer companies. This is essential to produce high-quality, customised products. For each product, Ganz's expert staff strives to define the customer's aspirations as best as possible and to produce a customised, specified product that meets all their needs.

"The expertise and references of our staff are outstanding in the market, and the engineering team members view each individual order as a new professional challenge."

- Jan Prins, Managing Director of Ganz.

#### Main objectives of Ganz:

- Maintaining long-term employee commitment
- Being a preferred workplace
- Providing a long-term career path to employees

Ganz pays special attention to its employees and does its utmost to create the right working environment for them. Examples include a growing and evolving compensation package, events, and opportunities for development and career paths. The success of these is demonstrated by a turnover rate (fluctuation) of 1.05%

# 4.2.1. Growing number of employees

As shown in the chart below, the number of Ganz employees has risen sharply over the past few years and this trend is expected to continue over the next few years with the continuous increase in production.



#### NUMBER OF EMPLOYEES (HEADCOUNT)

Data on gender distribution of workers show that most factory jobs are performed by men, due to the heavy physical nature of the job – only a few operative positions can be taken by women (for example manual insulation).



# 4.2.2. Valued employees: benefits and work environment

# Ganz provides several benefits to its employees in addition to the basic salary:

- Private healthcare (thereby participating in health check-ups)
- Group life and accident insurance
- Cafeteria regardless of position
- Company bus service from the surrounding area
- Overheads support
- Széchenyi Leisure Card (SZÉP card)
- Performance-based bonuses
- Support for recreation costs (e.g.: family tickets to an easily accessible aquapark)

In addition to the planned wage increase per year, Ganz also provides extraordinary wage increases for its employees if economic conditions allow. As a result, Ganz increased the salaries twice in 2023.

Figure 9. Gender distribution (2023) (Group level data)

#### **Performance evaluation**

In 2023, a performance evaluation system was introduced at Ganz. From 2024 employees will set quarterly targets with their managers and performance evaluation will be carried out on a quarterly basis. The result of the performance evaluation process will serve as the basis of bonuses paid. For management, targets are set every six months together with performance evaluation. For the CEO-s and the owners, targets are set annually. The percentage of employees who received performance and career development review in 2023 is 100%.

#### Working environment

The Group is also committed to continuously improving the work environment. In Tápiószele, the modernisation of buildings and the renovation of the parking lot started in 2023. The car park will not be expanded, only renovated, to encourage workers to use the bus services provided. In addition to everyday work, Ganz employees can connect with each other at company events, such as family days, trips (e.g. wine trip) and Christmas parties. These events also serve to strengthen the community and are open to all employees.

#### **Employee engagement and communication**

Ganz pays great attention to employee engagement and communication with the employees.

#### Focus: personal contact, humanity

The main channels of communication with employees are bulletin boards, emails, newsletters, and personal communication in case of important announcements, but personal contact with employees is also considered important by the management of Ganz. For this reason, managers visit the factories regularly and can be stopped during these occasions, and all employees can reach managers directly by phone, email or in person.

Ganz senior management holds monthly meetings, following a summary by the Chief Operation Officer on the news, updates, expected changes, etc., presented to colleagues and in team meetings.

An organised channel for collecting employee feedback was launched in 2023, through the employee satisfaction survey, conducted every year (detailed information is provided below). Based on the survey conducted at the end of 2023 and at the beginning of 2024, for most employees (50%), Ganz means future and security.

In addition, employees can submit their ideas to management through an 'Ideas Box', and the Works Council also helps communication between employees and management, regarding planned developments and employee preferences.

#### **Employee satisfaction survey**

In order to achieve its goal of becoming a preferred workplace, Ganz takes different actions according to the results of the employee satisfaction questionnaire. Based on the evaluation of the questionnaire results, 3 main areas were identified for improvement: **(1)** internal communication, **(2)** training of managers to improve their communication with the employees and **(3)** wages. Since the conduction of the survey, wages have been increased and changes have also been made to the benefits package; as such, the company is targeting the first two identified areas for improvement in its strategy in the future, while keeping the wages competitive. Human resources have already been allocated for these tasks. Strategy and implementation for these areas will be developed from Q2 2024. Regardless, by the end of 2025, Ganz will assess what additional benefits would motivate the employees and will tailor the benefits package accordingly.

#### Focus: personal contact, humanity

To improve personal communication, Ganz has introduced employee meetings, where management shares the main achievements, changes, and goals with the entire workforce and where employees have the opportunity to raise questions. The Group plans to hold such meetings regularly in the future.

Commitment	Baseline value*	Target year	Target	Actions
To become an Employer of Choice Target: Score over 4 on each question (maximum score: 5, number of questions: 15 (number) KPI: Employee satisfaction result - question- naire result: number of questions with score	12	2025	15	Implement improvements based on employee satisfaction questionnaire Set up a dedicated corporate wellbeing strategy
over 4 out of all questions				Assess what additional benefits would motivate the employees

\*Base year is 2023.

### 4.2.3. Trainings

In 2023, Ganz Transformers and Electric Rotating Machines Ltd.'s white collar employees received an average of 40 hours of training, while blue collar employees received an average of 30 hours of training (average hours/year/employee). For GTVF Acélszerkezetgyártó Kft., this was an average of 2 hours in 2023. Further information on the number of trainings is available in the ESG data Chapter.

Commitment			
	White collar	Blue collar	
Ganz Transformers and Electric Rotating Machines Ltd.	40	30	
GTVF Acélszerkezetgyártó Kft.	20	20	

#### "Learning station" – training of new employees

Ganz is currently in a favourable position, with demand for its products growing steadily. In order to keep up with this increased demand, Ganz has been recruiting heavily new employees. Specialised, tailor-made production requires skilled, trained workers, who therefore spend their first few months at Ganz, learning the profession. This is a long and labour-intensive process as experienced colleagues must support them during the training period. To facilitate the learning process and maintain efficiency, a so-called "learning station" is currently being set up in the winding unit, which makes it possible for the new employees to get familiar with their specific tasks. To reduce the additional workload for employees, dedicated trainers will be allocated to new colleagues. The trainers will teach new employees based on specific training modules. If the training station and its associated training method proves successful, this model will be extended to other units in the factory.

In addition to trainings for new employees, Ganz also provides periodic recurring trainings for employees, including occupational safety and the integrated management system.

#### Developing a training system

To ensure training and career development, a training calendar was created in early 2024 and is available to all employees, enabling them to register for the upcoming training courses, thereby broadening their knowledge. Examples of such training include forklift operator training or English language courses. In addition, the company plans to launch cross-training courses to enable colleagues to assist each other in their work within the factory and the business units, which can increase efficiency. This training calendar is the first step of the strategic focus area of Ganz to develop an up-to-date training system for efficient trainings.

#### Carrier paths, talent management

The main personal development objectives of Ganz are to provide employees with personalised career paths, to develop talent management and to provide targeted trainings for employees. These objectives serve as the basis for related commitments and actions for the next 2 years.

Baseline value*	Target year	Target	Actions
Average number of training hours per employee in 2023: 35 Average number of trainings provided for white collar workers: 40 Average number of trainings provided for blue collar work- ers: 30	2025	Average number of training hours per employee in 2023: x Average number of trainings provided for white collar workers: x Average number of trainings provided for blue collar work- ers: x	Launch training on sustainability Train employees in key areas (LinkedIn trainings, winding trainings, forklift oper- ation) and to continue existing trainings Register trainings in the HR system (all trainings, including First Aid trainings) Organisation of yearly recurring trainings, timely delivery of refresher trainings and update the yearly training plan
Mentor programme participants: 0 Seminars: 2	2025	Mentor programme participants: at least 2 Seminars: 4	Set up specific training paths Develop a talent management strategy
	Baseline value* Average number of training hours per employee in 2023: 35 Average number of trainings provided for white collar workers: 40 Average number of trainings provided for blue collar work- ers: 30 Mentor programme participants: 0 Seminars: 2	Baseline value*Target yearAverage number of training hours per employee in 2023: 35 Average number of trainings provided for white collar workers: 40 Average number of trainings provided for blue collar work- ers: 302025Mentor programme participants: 0 Seminars: 22025	Baseline value*Target yearTargetAverage number of training hours per employee in 2023: 35 Average number of trainings provided for white collar workers: 40Average number of trainings provided for white collar workers: 2025Average number of trainings provided for blue collar work- ers: 302025Mentor programme participants: 0: Seminars: 2Mentor programme participants: 0: Seminars: 2Baseline value*2025

\*Base year is 2023.

#### Targeting the younger generation

As it is essential to recruit new colleagues and to train them in the first few months, Ganz has started to target younger generations in recent years. Attracting and retaining the attention of the new generations and meeting their different needs requires a new approach from the Group. To this end, in 2024, Ganz will develop a strategy to reach and engage young people, identify key communication channels, and communicate more proactively with them. This includes actively engaging with not only universities but also with schools, inviting them to factory visits.

Commitment	Baseline value*	Target year	Target	Actions
Develop a strategy to engage young people by the end of 2024 KPI: Number of open days targeting young people [No.] AND Percentage of employees below 30 years [%]	Open days: 2 Employees < 30: 11%	2024	Open days: 4 Employees < 30: %	Develop an action plan Select key communication channels and launching proactive engagement

#### \*Base year is 2023.

A major difficulty in recruiting new colleagues is that there was no previous specific course that prepared students for the type of work carried out at Ganz. The new cooperation with the Óbuda University aims to overcome this difficulty and to channel young people into the Group.

#### Targeting the younger generation

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Case study - Collaboration with Óbuda University: three new industrial departments to be established at the Kandó Kálmán Faculty of Electrical Engineering

According to the agreements with the Óbuda University, Ganz Transformers and Electric Rotating Machines Ltd., PowerQuattro Zrt. and AstraSun Solar Nyrt. establishes an industrial department at the Kandó Kálmán Faculty of Electrical Engineering. The aim is to maintain professional relations between the university and the companies as well as to expand educational and research & development cooperation. An additional aim is to raise the quality of electrical engineering education.

Prof. Dr. György Molnár, Dean of the Faculty, said: The partnerships will bring mutual benefits for both companies and the university, in terms of learning, practical skills, thesis writing and later job opportunities, as well as a great potential for development.

The companies commit themselves to launch joint research and development projects and publications, laboratory development, theoretical and practical classes, project work, thesis and dissertation topics, related consultancy and supervision, Scientific Student Conference (TDK) topics and dual training.

Ganz also aims to integrate young people as trainees, interns. The Group also has regular contacts with several technical universities and is a regular exhibitor at university job fairs.





Figure 11. 31st Job Fair of Óbuda University

# 4.3. Health and Safety



As a manufacturing company, Occupational Health and Safety is of particular importance to Ganz. The risks associated with heavy machinery and heavy weights, high-risk activities, require special attention to occupational health and safety at several levels: at Management, EHS Team, and at individual level. Ensuring a safe work environment is also a concern for visitors and subcontractors working at the Ganz sites, and the users of Ganz products (including customers). The owners and management of Ganz are fully committed to ensuring and maintaining a safe workplace.

Budapest University of Technology

The EHS Team is constantly working to ensure that employees are aware of the risks they are exposed to. To this end, monthly EHS communication is carried out, where lessons learned from accidents and near-accidents are shared with employees. This Team carries out regular field audits resulting in recommendations to address identified risks and monitoring their implementation.

#### Main goal: minimising the number of accidents and near misses.

#### Goals of the Occupational Health and Safety measures:

- ↔ reduction of the hazards arising from the work environment.
- prevention of accidents and injuries.
- 📀 continuous improvement of occupational health and safety performance.
- 📀 education of employees about occupational health and safety.

Ganz's main Health and Safety goal is to ensure safe working conditions and to minimize the number of accidents and near misses. To this end, several special programs and preventive measures have been introduced in recent years and Ganz is expanding the scope of these with the introduction of the **Life Saving Rules.** The aim is to systematically manage, reduce and control the risks arising from everyday work. The rules are clear, easy to understand and, when followed, promote, and create the conditions for a safe workplace.



#### **Ganz Life Saving Rules**

Ganz Life Saving Rules have 9 focus areas:



Figure 12. Focus Areas of Ganz Life Saving Rules

**Ganz Life Saving Rules'** introduction has been started in the second half of 2023 with several steps taken in 2023. A poster and an educational booklet on the Life Saving Rules were prepared. Posters have been displayed in factories and relevant training has been provided to all employees and managers. To support employee engagement, senior management commitment was also expressed through corporate communications.

Measures under the Ganz Life Saving Rules has been continued in 2024. Risk assessments covering the focus areas of the Ganz Life Saving Rules are being conducted, and a Ganz Safety Day is being organised. In addition, regular monthly communication will continue, and the Safety-Talk programme will be launched, focusing on the GANZ Life Saving Rules.

In 2023, the modernisation of Ganz sites began. As a part of this, major renovation is carried out in both the rotating machinery and transformer factories, including the renewal of certain machinery and the purchase of new machinery. The modernisation of the mechanised processes is aimed at **increasing** efficiency and safety, while reducing risks.

As part of the modernisation, a new fire alarm system was installed in Tápiószele and fire safety was further enhanced by a new fire water pumping station (in Tápiószele).

In addition to compliance with basic legal requirements, Ganz operates an audited Occupational Health & Safety Management System.



#### **WORK-RELATED INJURES**

Figure 13. Number and rate of recordable work-related injuries  $^{8}$  (Group level data)

<sup>8</sup>The rates have been calculated based on 200,000 hours worked.

Commitment	Baseline value*	Target year	Target	Actions
Full implementation of the GANZ Life Saving Rules by the end of 2024 Lower recordable work-related inju- ries rate to 5 by 2025	9.01	2025	5	Prompt recording of accidents and near-misses: recording and thor- ough analysis of near-misses, aware- ness-raising for employees Proper wearing and utilisation of PPE (Personal Protective Equipment): awareness-raising, training
KPI: Rate of recordable work-related injuries [No.]				Launch GANZ Life Saving Rules related thematic training for the employees Launch a monthly safety talk program

Investigate the possibility to introduce the LOTO (Lockout-Tagout) system

\*Base year is 2023.

### 4.3.1. EHS trainings

On their first day of work, new Ganz employees attend a general training course on occupational health and safety, with refreshing trainings every year. In addition to the general Environmental, Health and Safety (EHS) training, Ganz employees also receive the thematic training needed to safely perform their specific roles. One such thematic training is the (annual) training on lifting machines.

As a precautionary measure, in certain positions, colleagues receive extra trainings, for example service division staff working at substations. Although they do not work under high voltage, they receive training on the rules of working under voltage, in order to reduce risks.

As part of the recurring EHS trainings, Ganz employees also receive annual first aid training, delivered by an external instructor.

Ganz provides its employees with the necessary Personal Protective Equipment, tools and the necessary environment, knowledge, and information to reduce risks. To successfully implement Ganz Life Saving Rules and achieve its objectives, it is not enough to provide the right equipment and conditions; workers' precaution, awareness and compliance are also required. For this reason, the measures regarding Ganz Life Saving Rules include thematic training, education, and targeted communication, to complement existing EHS training.

39

To bring EHS closer to employees, a Safety Day will be organised in the first half of 2024.

### 4.3.2. Client, visitor and subcontractor safety

Ganz has several processes in place to ensure that not only its employees, but also external subcontractors and visitors are safe when working on Ganz's site. In addition, by maintaining quality manufacturing and quality assurance processes, the safety of the (end) users of the products is also a constant priority.

Contractors (e.g. security, cleaning services) and maintenance and construction companies receive EHS training before the first day of work, and EHS requirements are attached to the contract. Ganz also signs an environmental and occupational health and safety agreement with suppliers and subcontractors. In addition, in areas where an environmental emergency may occur during the subcontractor's activities, Ganz provides separate training to subcontractors in accordance with the emergency plan. Ganz Life Saving Rules are also communicated to subcontractors and compliance with these rules are a requirement.

Visitors are informed about safe on-site behaviour by

a short film.

To ensure safe use, Ganz provides user manuals to its products, containing information on the safe and correct use of the product, instructions for use and ways to contact the company representative (Project Manager). In 2023, there were no incidents of non-compliance concerning the health and safety impacts of products and services.

To maintain this level of product quality, during 2024 Ganz will examine what further steps are possible to improve the health and safety of contractors and visitors.



Commitment	Baseline value*	Target year	Target	Actions
Further improve health and safety for contractors and visitors KPI: Number of accidents and near-misses (for contractors and visitors) [No.]	0	2024	0	Assess how health and safety for con- tractors and visitors can be improved, what measures can be done and implement these measures

\*Base year is 2023.

### 4.4. Quality management

Guaranteeing high quality is key for Ganz, and Ganz colleagues work to ensure this every day.

All 3 Ganz sites have valid quality management systems (ISO 9001:2015), environmental management system (ISO 14001:2015) and occupational health & safety management system (ISO 45001:2018) certification.



Figure 14. ISO Certifications of Ganz

Ganz is committed to complying with the requirements of the Integrated Management System and continuously improving it to ensure high quality of its products and services. The primary quality characteristics of Ganz's products are reliability, long operation lifetime and high availability. Ganz strives to ensure that safety-related quality aspects are not compromised during the design, manufacturing, delivery and control of its products and services, designed to operate in special environments (nuclear environment or potentially explosive atmospheres). Ganz considers its primary duty to ensure that its products and services meet customer and regulatory requirements.

Despite the greatest efforts, failures may occur. The Quality team detects, manages, and investigates these, and analyses the root causes, continuously working on the introduction and implementation of preventive measures and improvements.

Ganz carries out transformer testing activities at the Tápiószele site. The testing laboratory is in a separate hall of over 1000 m2 in the transformer factory building, enabling three transformers to be tested at the same time.

#### Case study - Accredited testing laboratory

Since several customers expect Ganz to operate a certified test room, Ganz's Power Transformer Test Bay became a certified ISO 17025 accredited testing laboratory in 2023. The National Accreditation Authority has granted the accredited status to Ganz's testing laboratory in Tápiószele for 5 years. This means that Ganz is now able to carry out accredited laboratory works and on-site testing of power transformers, and not only test its own transformers in-house but also offer testing services for other companies.

# **5. GOVERNANCE AND ECONOMIC RESPONSIBILITY**

#### 5.1. Governance commitments of Ganz



\*Commitments are set for the whole group including all sites (Tápiószele, Szolnok and Budapest). \*\*Base year is 2023.

#### 5.2. Governance structure

Ganz Transformers and Electric Rotating Machines Ltd. is 100% Hungarian-owned. The owners of the Company are Zsolt Barna; Status Property and Prime Property. GTVF Acélszerkezetgyártó Kft. is fully owned by Ganz Transformers and Electric Rotating Machines Ltd. To achieve its objectives, the Ganz GTVF Kft. strives to maintain a clear and simple organisational structure with as few hierarchical levels as possible. The responsibilities of the Group's senior management are defined in their individual job descriptions. Ganz Transformers and Electric Rotating Machines Ltd.'s organisational structure is shown in the diagram below.



Figure 15. Organisational structure of Ganz Transformers and Electric Rotating Machines Ltd.

The Group's senior management conducts and documents its management reviews on an annual basis.

### 5.3. Integrating sustainability into corporate governance

By integrating sustainability as a strategic approach, it is becoming an essential element of the Group's corporate governance. Within the Group, sustainability is the responsibility of the Environmental Engineer, who reports to the Site Development Manager. The Site Development Manager reports to the CEO as issues or topics arise. In the future reporting on sustainability KPIs and further sustainability topics will be part of Ganz's quaternal management meeting.

Ganz has a sustainability policy, which is part of the mandatory training for new entrants. The Group's objectives and commitments include organising trainings on sustainability for employees to further deepen sustainability in all employees.

As communication with stakeholders is essential for sustainability, as well as for day-to-day operations, Ganz will develop a plan to engage with stakeholder groups in 2024.

Commitment	Target year	Actions
Create a plan for deeper stakeholder involvement regarding sustainability by the end of 2024	2024	Assess the key stakeholder groups and create a plan for regular communication for each group
Preparation for the sustainability related legal requirements (CSRD, Taxonomy, Hungarian ESG decree (Act CVIII of 2023, the ESG Act)) by the end of 202	2025	Take the first steps (for example with EU Taxonomy eligibility assessment)

# 5.4. Ethical operation: Responsible business ethics



Ensuring diversity, equal opportunity and non-discrimination is at the core of Ganz's day-to-day operations. The Group strives to maintain mutual respect in the workplace and accordingly does not tolerate discrimination or harassment of any kind. It respects the human rights of its employees and expects the same from its suppliers. No employee shall be treated unfairly, preferentially, be harassed, discriminated, or be subjected to discrimination based on race, colour, religion, national or ethnic origin, age, disability, gender, pregnancy or maternity, marital status, sexual orientation, gender identity or expression, political or personal beliefs. Salaries and benefits are not dependent on any of the above and there were no incidents of discrimination during the reporting period.

#### Honesty and integrity

The Group is committed to doing business with honesty and integrity. It aims to maintain a corruption-free business and expects fair treatment of employees, suppliers and vice versa. Ganz management believes that it must set an example for its employees by following the rules and behaving in an ethical and law-abiding manner.

#### **Compliance and Conflict of Interest Policy**

The Group has a Compliance and Conflict of Interest Policy, aimed at avoiding enforcement action by regulators, avoiding civil or criminal sanctions, and emphasising professionalism. It addresses, for example, ensuring fair treatment of employees and suppliers; avoiding corruption, bribery; political neutrality; and avoiding money laundering. In addition, Ganz will develop its Code of Conduct and train all its employees by mid-2025.

#### **Cyber security**

Nowadays proper cyber security is essential and therefore Ganz aims to further improve its security systems and provide relevant training to its employees by the end of 2024.

Commitment	Baseline value*	Target year	Target	Actions
Improve cyber security, data man- agement and information security: 100% trained employees for data management and information securi- ty by the end of 2025 KPI: Percentage of trained em- ployees for data management and information security against all employees [%]	0%	2025	100%	Develop/purchase training and train employees
Prepare a Code of Conduct and train 100% of employees by the end of Q2 2025 KPI: Percentage of employees trained against all employees [%]	0%	2024	100%	Draft and finalise the Code of Conduct and plan the trainings

# 5.5. Direct and indirect economic impacts



#### 5.5.1. Direct economic impacts

Ganz's revenue and other economic indicators have shown a strong increase over the last 3 years, illustrated in the figure below. Similar growth is expected in the future.



## DIRECT ECONOMI VALUE GENERATED AND DISTRIBUTED (EUR)

Figure 16. Direct economic value generated and distributed (EUR)

#### 5.5.2. Indirect economic impacts

One of Ganz's most important indirect economic impacts come from the use of its products.

In energy production based on renewable energy sources - solar, wind, hydro, biomass, etc. – and power plants, Ganz products play a significant role in feeding the electricity produced from renewable energy sources into the grid.

# Ganz products contributes to a secure residential and industrial electricity supply and fosters the energy transition.

As a result of the network connection and system flexibility requirements from the integration of electricity produced with renewable energy sources into the grid, the demand for transformers has been increasing in the European Union.

Ganz's product development and R&D activities support the green transition, including the efficient use of renewable resources (e.g.: synchronous compensator).

Ganz also provides employment opportunities for people living in the region of the sites. It also contributes to the development of the region by attracting skilled workers to the area and offering them further training and career opportunities, as well as benefits. The Group also contributes to the economic growth of the area through competitive wages.



# 6.1. ESG data

		Group
Scope 1 and 2 emissions (GRI 305-1, GRI 305-2)	Unit	2023
Total Scope 1 and 2 (market-based)	ton CO <sub>2</sub> e	3,645
Scope 1	ton CO <sub>2</sub> e	2,544
Scope 2 (location based)	ton CO <sub>2</sub> e	532
Scope 2 (market-based)	ton CO <sub>2</sub> e	1,101

			Group
Energy consumption (GRI 302-1)	Unit	2022	2023
Total fuel consumption from non-renewable sources	GJ	48,872	45,050
Total electricity consumption	GJ	3,290,351	3,445,623
Total energy consumption	GJ	3,339,223	3,490,673

				Group
Water discharge (GRI 303-4)	Unit	2021	2022	2023
Water discharge to surface water	m <sup>3</sup>	7,193	11,373	17,052
Water discharge to third-party water	m <sup>3</sup>	581	1,461	2,073

<sup>9</sup>Standards, methodologies, assumptions and/or calculation tools used: EN ISO 14064-1:2019

Source of emission factors: MVM, IPCC, GHG Protocol AR5, IEA, calculation from gas composition, DBEIS database.

Reporting period covered: 1 January 2023 - 31 December 2023

Organisational boundaries: The GHG report covers the operation of the whole Group.

Waste generated (GRI 306-3)					
Waste composition	Unit	2021	2022	2023	
Total waste	tonne	142,16	317,00	591,24	
Non-hazardous waste	tonne	132,32	258,77	538,73	
Construction and demolition waste (non-hazardous waste)	tonne	7,57	146,97	324,16	
Metal (non-hazardous waste)	tonne	84,43	33,85	48,85	
Packaging (non-hazardous waste)	tonne	37,60	51,8	118,80	
Other non-hazardous waste	tonne	2,72	26,09	46,92	
Hazardous waste	tonne	9,84	58,22	52,51	
Mineral oil-based or oil contaminated hazardous waste (liquid)	tonne	4,81	44,71	26,74	
Other hazardous waste	tonne	5,03	13,51	25,76	

Published waste figures exclude municipal waste and waste from office use in Budapest.

Waste generated (GRI 306-3)				
Digitisation	Unit	2021	2022	2023
Percentage of products digitised – Rotating Machines division	%	0%	0%	0%
Percentage of products digitised – Power Transformers	%	0%	0%	92%
Percentage of products digitised – Power Transformers	%	0%	0%	0%

				Group
Negative environmental impacts in the supply chain and actions taken (GRI 308-2)	Unit	2021	2022	2023
Number of suppliers assessed for environmental impacts	Number of suppliers	0	0	2
Percentage of suppliers assessed for environmental impacts	%	0,0%	0,0%	0,8%

				Total
Negative social impacts in the supply chain and actions taken (GRI 414-2)	Unit	2021	2022	2023
Number of suppliers assessed for social impacts	Number of suppliers	0	0	2
Percentage of suppliers assessed for social impacts	%	0.0%	0.0%	0.8%

Employment data 2022 (CDI 102.7)	Ganz Transform	GTVF Acélszerkezetgyártó Kft.				
	Male	Female	Total	Male	Female	Total
Total number of employees	352	62	413	48	0	48
Temporary contract	0	0	0	0	0	0
Permanent contract	350	60	409	46	0	46
Part-time	2	2	4	2	0	2
Full-time	350	60	409	46	0	2
Describe the methodologies and assumptions used						

to compile the data, including whether the numbers are reported:

In head count, full-time equivalent (FTE), or using another methodology

At the end of the reporting period, as an average across the reporting period, or using another methodology Head count

At the end of the reporting period

Period of notice (GRI 402-1)		Group
	Unit	2023
Minimum notice periods regarding operational changes	Days	30

		Group				
	For all employees			For all worker whose work and t	mployees but s controlled by	
Work-related injuries (403-9)	2021	2022	2023	2021	2022	2023
The number of fatalities as a result of work-related injury	0	0	0	0	0	0
The rate of fatalities as a result of work-related injury	0	0	0	0	0	0
The number of high-consequence work-related injuries (excluding fatalities)	0	0	0	0	0	0
The rate of high-consequence work-related injuries (excluding fatalities)	0	0	0	0	0	0
The number of recordable work-related injuries	9	12	31	0	0	0
The rate of recordable work-related injuries	3.6	4.2	9.0	0	0	0
Number of hours worked	504,584	564,875	688,25	30,240	56,448	56,448

The rates have been calculated based on 200,000 hours worked.

Customer Health and safety				
		Group		
Incidents of non-compliance concerning the health and safety impacts of products and services (GRI 416-2)	Unit	2023		
Total number of incidents of non-compliance with regulations and/or voluntary codes concerning the health and safety impacts of products and services within the reporting period, by:				
Incidents of non-compliance with regulations resulting in a fine or penalty	Number of incidents	0		
Incidents of non-compliance with regulations resulting in a warning	Number of incidents	0		
Incidents of non-compliance with voluntary codes	Number of incidents	0		

				Group			
		Ganz Transformers and Electric Rotating Machines Ltd.			GTVF Acélszerkezetgyártó Kft.		
Average hours of training per year per employee (GRI 404-1)	Unit	2021	2022	2023	2021	2022	2023
By gender						0	0
Female	average hour/year/employe			40 hours		0	0
Male	average hour/year/employe			40 hours		2 hours	2 hours
By employee category							
White-collar workers	average hour/year/employe 40 hours			2 hours	2 hours		
Blue-collar workers	average hour/year/employe			30 hours		2 hours	2 hours
Total	average hour/year/employe			35 hours		2 hours	2 hours

		Ganz Transformers and Electric Rotating Machines Ltd.			GTVF Acélszerkezetgyártó Kft.		
Direct economic value generated and distributed (GRI 201-1)	Unit	2021	2022	2023	2021	2022	2023
Direct economic value generated: revenues <sup>1</sup>	EUR	22,749,752	43,893,440	71,547,200	n.a	n.a	820,000
Economic value distributed:	EUR				n.a	n.a	
operating costs <sup>2</sup>	EUR	21,075,772	31,957,869	46,063,556	n.a	n.a	218,200
employee wages and benefits <sup>3</sup>	EUR	6,200,701	7,029,119	10,847,049	n.a	n.a	378,761
payments to providers of capital	EUR				n.a	n.a	
payments to government by country <sup>4</sup>	EUR	237,061	415,132	738,667	n.a	n.a	61,039
community investments	EUR				n.a	n.a	
Economic value retained	EUR	4,526,721	4,906,452	14,636,595	n.a	n.a	233,039

1: Total revenues + Financial revenue (interest)

2: Total material costs - Land tax - Other local taxes

3: Staff costs - Social insurance contribution

4: Land tax + Other local taxes + Total taxes - Deferred tax + Fines paid to public

# **6.2. GRI content index**

Statement of use	The Ganz GTVF Kft. reports the information cited in this GRI content index for the period 01/01/2023-31/12/2023 with reference to the GRI Standards.
GRI 1 used	GRI 1: Foundation 2021

GRI STANDARD	DISCLOSURE	LOCATION	
GRI 2: General Disclosures 2021	<ul> <li>2-1 Organizational details</li> <li>2-2 Entities included in the organization's sustainability reporting</li> <li>2-3 Reporting period, frequency and contact point</li> <li>2-5 External assurance</li> <li>2-6 Activities, value chain and other business relationships</li> <li>2-7 Employees</li> <li>2-9 Governance structure and composition</li> <li>2-15 Conflicts of interest</li> <li>2-27 Compliance with laws and regulations</li> <li>2-28 Membership associations</li> <li>2-29 Approach to stakeholder engagement</li> </ul>		
GRI 3: Material Topics 2021	3-1 Process to determine material topics 3-2 List of material topics 3-3 Management of material topics		
GRI 201: Economic Performance 2016	201-1 Direct economic value generated and	distributed	
GRI 203: Indirect Economic Impacts 2016	203-2 Significant indirect economic impacts		
GRI 302: Energy 2016	302-1 Energy consumption within the organi	zation	
GRI 303: Water and Effluents 2018	303-1 Interactions with water as a shared re 303-4 Water discharge	source	
GRI 305: Emissions 2016	305-1 Direct (Scope 1) GHG emissions 305-2 Energy indirect (Scope 2) GHG emissio	ons	
GRI 306: Waste 2020	306-1 Waste generation and significant wast 306-2 Management of significant waste-rela 306-3 Waste generated	e-related impacts ted impacts	
GRI 308: Supplier Environmental Assessment 2016	308-2 Negative environmental impacts in th	e supply chain and actions taken	

GRI STANDARD	DISCLOSURE LOCATION	
GRI 401: Employment 2016	401-2 Benefits provided to full-time employees that are not provided to temporary or part-time employees	
GRI 402: Labor/Management Relations 2016	402-1 Minimum notice periods regarding operational changes	
GRI 403: Occupational Health and Safety 2018	403-1 Occupational health and safety management system 403-2 Hazard identification, risk assessment, and incident investigation 403-3 Occupational health services 403-5 Worker training on occupational health and safety 403-6 Promotion of worker health 403-9 Work-related injuries	
GRI 404: Training and Education 2016	404-1 Average hours of training per year per employee 404-3 Percentage of employees receiving regular performance and career develop- ment reviews	
GRI 406: Non-discrimination 2016	406-1 Incidents of discrimination and corrective actions taken	
GRI 414: Supplier Social Assessment 2016	414-2 Negative social impacts in the supply chain and actions taken	
GRI 416: Customer Health and Safety 2016	416-2 Incidents of non-compliance concerning the health and safety impacts of prod- ucts and services	







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