



2023

# Sustainability Report



**KONČAR**  
ELECTRICAL ENGINEERING  
INSTITUTE



## Content

LETTER FROM DIRECTOR.....	1
IMPLEMENTATION OF UN GLOBAL SUSTAINABLE DEVELOPMENT GOALS (SDG).....	3
<b>GENERAL DISCLOSURES.....</b>	<b>5</b>
ORGANIZATIONAL DETAILS.....	6
REPORTING PRACTICES.....	10
BUSINESS ACTIVITIES.....	11
WORKERS.....	25
GOVERNANCE.....	26
STRATEGY, POLICIES AND PRACTICES.....	28
STAKEHOLDER ENGAGEMENT.....	31
<b>TOPIC DISCLOSURES.....</b>	<b>35</b>
MATERIAL AND NON-MATERIAL TOPICS.....	36
GRI CONTENT INDEX.....	66

# LETTER FROM DIRECTOR

**GRI 2-22** In the last several decades, the past year has been particularly significant for the Institute, with help of positive breakthroughs and achievements. A new Laboratory for Power Systems and Drives – LAVESP was built and put into operation. This is the largest and most significant investment of the Institute since 1971, and represents an important step forward in terms of testing possibilities and market position of the Laboratory Center of the Institute.

With the application of a new model of financing strategic research projects, a key shift towards the perception of strategic research of interest to all companies of Concern has been made. At the initiative of KONČAR – Electrical Industry, a new model was launched with the aim of acquiring competencies, validating the concepts of some solutions and building infrastructure, which will enable more efficient development of new products in the companies responsible for these products.

Thanks to the initiative, in addition to direct revenues under the contract, it is expected to increase indirect revenues from cooperation with the Group's companies, i.e. intensify cooperation and grow competences. All this contributed to the fact that the institute's number of employees reached a record 200 at the end of 2023, the highest number since 1990, with a tendency to grow in the coming period.

During 2023, significantly better business results were achieved compared to the previous year on almost all key indicators. Operating income of €16.21 million was achieved, which is 19.6 percent more than in 2022 and 17.3 percent compared to the plan. Sales revenue increased by 17.2 percent thanks to exports and revenues from the KONČAR Group, while revenues from other entrepreneurs in the Republic of Croatia decreased compared to 2022. The most important export products and services were laboratory HV equipment testing, and transformer and bushings monitoring systems. Good results were also achieved by machine condition monitoring systems and development services within the field of functional safety computer systems.



During 2023, €2.6 million was invested in equipment, i.e. modernization of existing and activation of new testing methods and support for strategic research projects. The implementation of the contract for the development of medium-voltage environmentally friendly switchgear of primary distribution has begun, the development and application of new possibilities of transformer monitoring systems based on the KonFID platform has continued, and research, development and testing services in the field of railway infrastructure for the German partner have been strengthened. In 2023 the Laboratory Center and SCERT - Certification Service increased the number of accredited testing and certification methods for conductors, cables and accessories, as well as for other power equipment and products. The expansion of accreditations and the increase in LC testing capabilities have been recognized by DEWA (Dubai Electricity & Water Authority) and TRANSCO (Abu Dhabi Transmission and Despatch Company) putting the Laboratory Center on the list of approved independent laboratories.

Last year, activities on four strategic research projects were continued, to which the Institute is responsible, and they were financially supported through the KONČAR 2020+ Integrated Strategy. The Digital Factory Lab (DFL) - a center for digitalization technologies continued its activities, which enables the Institute and partners to successfully monitor, adopt and apply technological trends, i.e. ensure technological preconditions for the delivery of complex digital solutions on the market.

The emphasis was also on improving the process of new employment and mentoring through the development of onboarding procedure. In the field of sustainable management model, already established concepts of employee training in the areas of leadership and personal development have been improved, and new activities of employee familiarization and cohesion have been introduced.

For the first time, a gathering of employees of the Institute in Rabac was organized, which was well accepted and rated by the employees as a high grade. The goal of the gathering was to get to know each other better, network and socialize, and the results achieved exceeded all expectations. The Institute's Open Doors Day and the Christmas party were held again, temporarily suspended due to the pandemic, all for the purpose of stronger bonding and togetherness. The associates of the Institute also earned great praise for winning the first corporate quiz of KONČAR, in which 70 teams from 11 companies of the Group participated.

The Development of the Sustainable Development Strategy of the Group is being prepared according to the new mandatory directives and reporting standards, and the Institute will be ready to respond to the upcoming challenges. 17 years ago, at the time of issuing the first sustainability report, the Institute had little knowledge about measurement of impact indicators, but already then had a rich tradition in respect of human rights, social sensitivity and awareness that everything that previous generations left as a legacy should be preserved for the future.

In 2023, the Institute received the HRIO Award for the best application of socially responsible practice in the category of medium-sized companies. The Institute is a multiple Winner of the HRIO Awards, but the most important thing is not how many awards there are, but what kind of traces we leave behind. Pushing the boundaries in creating innovative and advanced technologies, constantly investing in employees, reducing environmental impact and creating a positive social environment are the core of our sustainable business even in the period ahead.

Zagreb, April 2024

Dalibor Filipović-Grčić, PhD  
Director

# Involvement of the Institute in the Implementation of UN Global Sustainable Development Goals (SDG)

UN adopted the 2030 Agenda for Sustainable Development to end poverty in the world, ensure quality education, healthy lives, decent jobs and address key environmental challenges. We have identified seven goals closely related to the Institute's business activities, whereby we can monitor our contribution to their implementation.



## We protect investments in property and primary equipment

We ensure better management of capital assets, safe and reliable risk management

Our contribution to SDGs 7, 8, 9, 11 and 12:



We are committed to the use of renewable sources and energy-efficient solutions. The Institute's contribution is related to water, sun and wind. We help modernize, monitor and diagnose vital equipment in hydro power plants, wind power plants and photovoltaic plants. We provide expert assistance in the construction of photovoltaic power plants and develop reliable vital components.



Our solutions improve resource management, reduce plant maintenance costs, and extend the lifespan of primary equipment.



By participating in R&D projects, we help build an adaptable infrastructure, promote inclusive and sustainable industrialization, and foster innovation.

Systems with functional safety requirements ensure the highest level of protection of people's lives and safety of assets in work processes with a high potential risk.



Electromagnetic field monitoring system provides local communities with information about actual radiation values, thereby contributing to their safety.



Primary power equipment monitoring systems enable better management of vital components and risk management, thus contributing to a better quality of life for everyone.

We help manufacturers to have their products tested so that they can be marketed.

We assist manufacturers in assessing compliance of their products with regulations to determine their safety and reliability for the user and the environment.

**Material topics: Economic performance, Indirect economic impacts**

## We protect the environment

By responsible management of natural resources and waste disposal in a safe and secure way we protect human health and minimize environmental impact

Our contribution to SDG 12:



We reduce the risks of premature obsolescence and product rejection through our own hardware and software platforms, helping to reduce emissions and accumulate unnecessary electronic waste.

Rational consumption of energy resources and the establishment of emission control systems in environmental constituents reduce the adverse effects to the smallest possible extent.

**Material topics: Energy, Emissions of greenhouse gases, Waste**

## We protect people and the community

Our business activities reflect global needs and ambitions for solving complex technological challenges, protecting people and the community

Our contribution to SDGs 4, 5 and 8:



We encourage personal development and improvement of employees through professional education, foreign language learning, IT training and education for quality systems, environmental protection and occupational safety.

By exchanging knowledge and partnership, both scientific community and the Institute acquire new competencies, creating new opportunities for development and value added in the wider community.



By accepting and encouraging diversity and equal opportunities, we contribute to both organizational culture and the general goals of non-discrimination and gender equality.



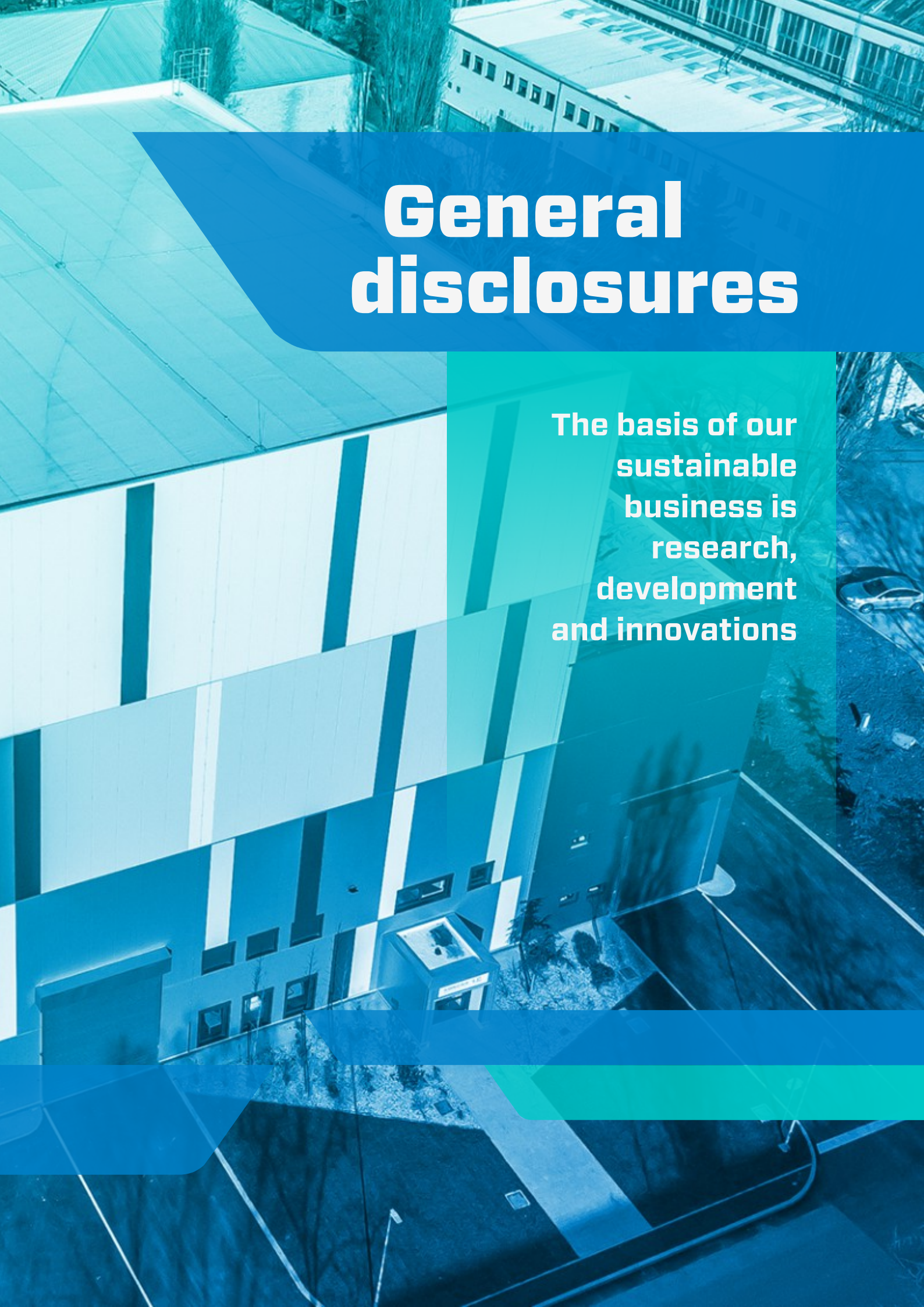
Solving complex industrial challenges and participation in international and national projects encourages employment on challenging tasks and creates new desirable jobs.

Healthy and secure working environment is recognized as our greatest responsibility and contribution to creating quality jobs.

**Material topics: Training and education, Community, Diversity and equal opportunities, Employment, Health and safety at work**

## Abbreviations used in the Report

- the Institute KONČAR – Electrical Engineering Institute Ltd.
- The Group, KONČAR Group KONČAR – Electrical Industry Inc. with subsidiaries and associates
- Concern KONČAR KONČAR – Electrical Industry Inc. and subsidiaries
- Parent Company KONČAR – Electrical Industry Inc.
- CSR Corporate social responsibility
- ECS Embedded Computing System
- GRI Global Reporting Initiative
- GRI Standards GRI Sustainability Reporting Standards
- SDG Sustainable Development Goals
- UN GC UN Global Compact
- RDI Research – development – innovations
- TMS Transformer monitoring system
- MCM System for machine condition monitoring and fault detection
- MEP Electromagnetic field monitoring system
- TCMS Train control and management system
- HVDC High Voltage Direct Current
- CENELEC European Committee for Electrotechnical Standards
- VA Value added
- SCERT Certification Service
- LAVESP Laboratory for Power Systems and Drives
- LC Laboratory Center

An aerial photograph of a modern, multi-story building with a white facade and dark vertical accents. The image is heavily overlaid with a blue color scheme, including a large dark blue shape in the upper left and a teal shape in the middle right. The text is placed within these shapes.

# General disclosures

The basis of our sustainable business is research, development and innovations

# ORGANIZATIONAL DETAILS

GRI 2-1 Name of the organization:	KONČAR – Electrical Engineering Institute Ltd. for research, development, and services
Location of the headquarters:	Fallerovo šetalište 22, HR-10000 Zagreb
Legal form:	Ltd. (Limited Liability Companies)
Scale of the organization:	Medium-sized enterprise according to the classification in the Accounting Act of Croatia
Date of the registration:	12.11.2021. (restructured); 21.1.1991. (reorganized); 25.3.1961. (founded)
Number of the registration:	(Zagreb Commercial Court) MBS 080143769
VAT ID No.:	HR37724368086
Equity capital:	€ 5.410.000
The National Classification of Activities 2007:	7219

**63**  
years



APPLIED SCIENTIFIC  
RESEARCH AND DEVELOPMENT

**16.21**  
mil. €



OPERATING INCOME  
IN 2023

**3**



KEY BUSINESS  
ACTIVITIES

**1**



LABORATORY  
CENTER

**≈750**



ACCREDITED TEST  
METHODS



15

PhDs

79%

employees with  
high and higher  
education

200

employees  
(on 31.12.2023)

008

No. in the Register  
of Scientific  
Organizations

17

years of the  
sustainability  
reporting

KONČAR – Electrical Engineering Institute (hereinafter: Institute) is a company engaged in research, development, testing and measurement in the areas of conversion, transmission and use of electrical energy in the power industry and transport. As one of the KONČAR Group companies the Institute is oriented towards applied research, testing and support to development projects of Group companies and offers its own solutions and services on the global market.

Laboratory tests of compliance of equipment with standards, diagnostic tests of the equipment installed in power plants and substations, supervision of their construction, are also important activities that ensure our employees a wide range of competences and direct contact with customers.

The Institute has the status of an independent company within the KONČAR Group, to which KONČAR – Electrical Industry Inc., as a 100% owner, confirms its status with the Statement of Independence of June 6, 2000, which enables independence from any influence of the owner, manufacturers or suppliers of products, and that none of them can in any form influence test or certification results.

**Through application of knowledge and state-of-the-art technologies we develop solutions for efficient energy conversion and power transmission, on the principles of Corporate Social Responsibility.**

**MISSION  
VISION**

**To become a globally recognizable partner in the fields of power engineering and rail vehicles, and in that way to contribute to the success of KONČAR Group.**

The Institute is registered in the Register of the Scientific Organizations of the Ministry of Science and Education. At the same time, being a company specialized in applied research in electrical and mechanical engineering, it has two important roles within the KONČAR Group:

- support to further development of solutions manufactured and sold by KONČAR companies based on contracts and market principles, providing expertise and R&D testing in numerous laboratories of the Institute,
- applied research at its own expense for the development of new solutions compatible to the production program of the KONČAR Group, for which the Institute bears risks not only regarding the development but also regarding their placing on the market.

The Institute was founded on January 21, 1991 on market principles as an independent company within the KONČAR Group. It continued the work on core activities of the company Rade Končar – Elektrotehnički institut (founded in 1961): applied research and development of electrical equipment and plants.

## Our fundamental values

Our values reflect our goals, priorities and convictions that guide us. By adhering to fundamental values and ethical standards we can focus on sustainability.

One of our fundamental values, inherent to all we do. It is ensured by building trust with our customers based on our correct expertise and up-to-date technical solutions

RELIABILITY

Our goal is to constantly make improvements, plan future activities, and forecast challenges, keeping excellence, quality and sustainability

EXCELLENCE

Decades of experience in applied research and laboratory testing are the basis for stability and success of our business in the future. There are intense investments in the development of new products and services, training of employees, and construction of new laboratories and refurbishment of the existing ones

TRADITION

Successful business is based on knowledge and skills of our employees, superior expertise, professional competence, and correct and impartial assessments

KNOWLEDGE

We are aware of social and environmental impacts of our actions. We take greatest possible care of environmental protection, human rights and occupational health and safety

RESPONSIBILITY

## Significant changes to the organization during the reporting period

### Laboratory for Power Systems and Drives - LAVESP was put into operation

Laboratory Center opened a new building and put into operation LAVESP – Laboratory for Power Systems and Drives, high-tech complex for type, special, research, and development testing of power and instrument transformers, circuit breakers, disconnectors and earthing switches, gas-insulated HV switchgear, bushing-type and spacing insulators, fittings for overhead lines, HV cables and high voltage direct current (HVDC) cables.



### Development of a new Sustainable Development Strategy of the KONČAR Group

In 2023, workshops were held for the management stakeholders of all affiliated companies to develop a new Sustainable Development Strategy at Group level, in order to meet more comprehensive and stringent corporate sustainability reporting rules, i.e. identifying and monitoring social, environmental and governance impacts. Due to the growing regulatory requirements for reporting entities according to the CSRD (Corporate Sustainability Reporting Directive) of the European Union, a working group was established and an external company was hired to analyze existing activities, as well as support in the adaptation and integration of ESG (environmental, social and government) criteria into business strategies and processes.

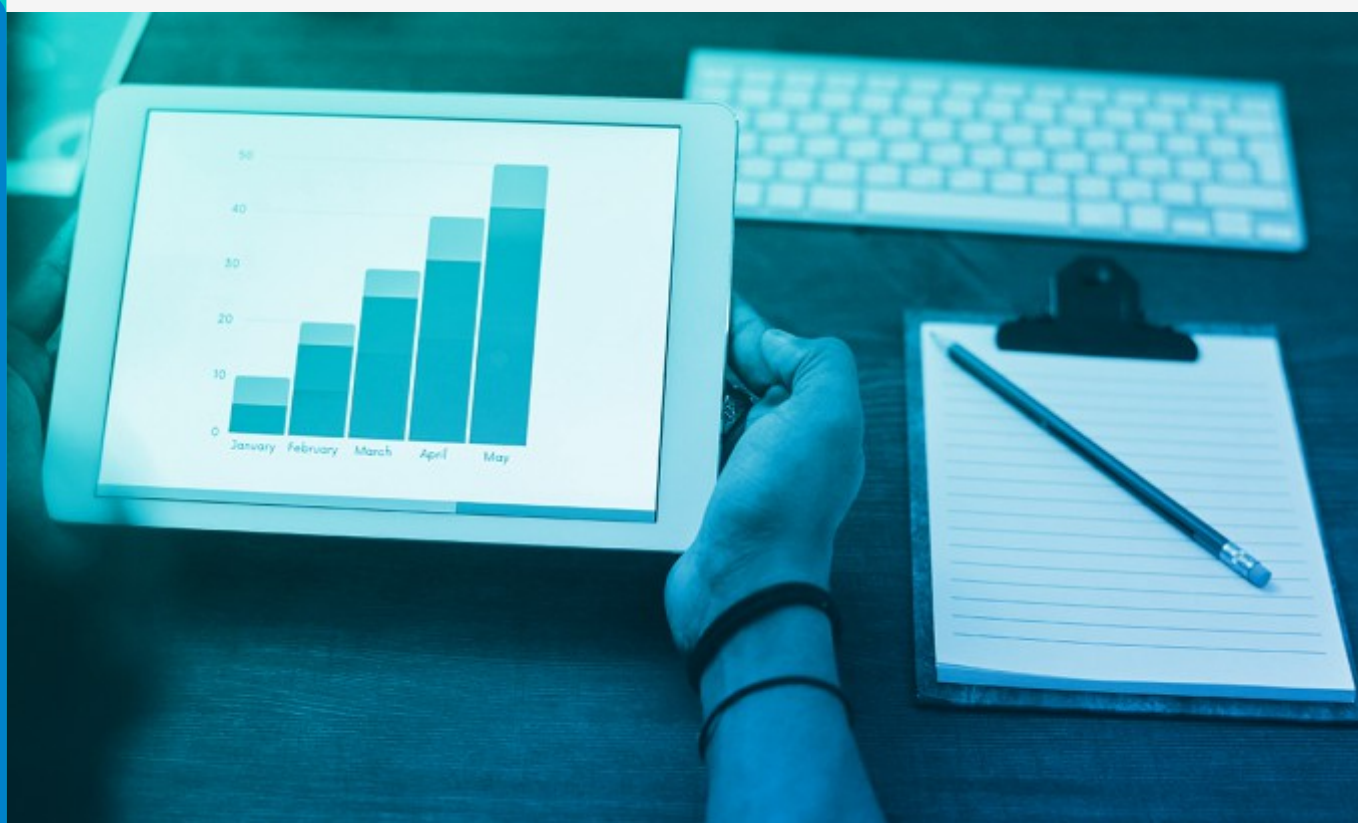
## REPORTING PRACTICES

**GRI 2-3** This Sustainability Report for 2023 has been prepared in accordance with GRI standards (General Disclosures 2021), in which we report on responsible government, correct and ethical business practices, environmental impact, product and service development, as well as the total economic impact and creation of added value to society. We also monitor our contribution to the achievement of the UN Global Goals for Sustainable Development in 2030 in the areas where we have the greatest impact. Additionally, we use other recognized reporting frameworks, such as the principles of the UN Global Compact.

This report contains the achieved performance in the period from January 1 to December 31, 2023. The Institute's reports have been published once a year since 2008, and include the results of the previous calendar year.

**GRI 2-4** The previous report was published in June 2023, and the next is planned for April 2025.

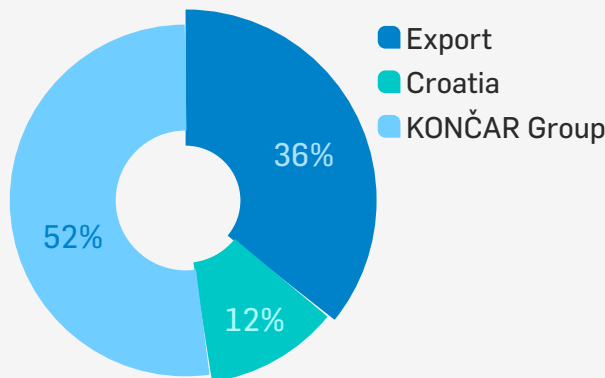
The Institute's Managing Board is responsible for approving and revising the published data, including material topics of the organisation in the Sustainability Report. Contact person for Sustainability Report and its content: Irena Šinko, Expert Assistant for CSR and Communication, [isinko@koncar-institut.hr](mailto:isinko@koncar-institut.hr).



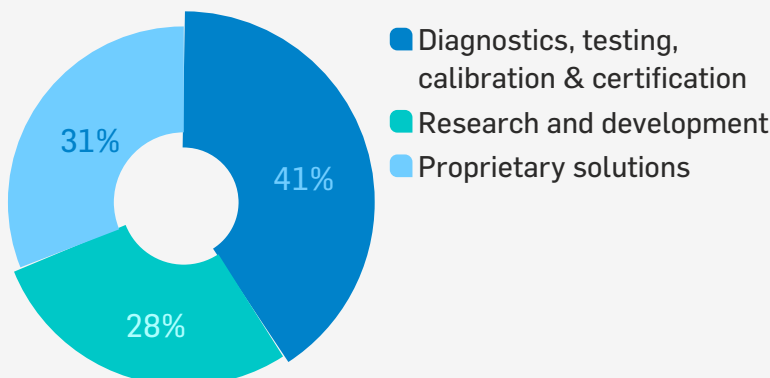
# BUSINESS ACTIVITIES

**GRI 2-6** The main activities of the Institute are research, development and testing in the fields of natural, technical and technological sciences, with orientation towards applied research, testing and support to development projects of the Group. Besides supporting the Group in power industry and transport, the Institute offers its proprietary solutions and services in the global market.

## Sales per markets 2023



## Sales per key business activities 2023



## RESEARCH AND DEVELOPMENT

The Institute follows trends and invests in research in order to be the leader in application of the most advanced technologies to the production program of companies of the KONČAR Group and to improve its proprietary solutions for the global market



## PROPRIETARY SOLUTIONS

Monitoring systems for transformers, rotating machines, switchgear, and control systems for traction vehicles and power converters.

Proprietary HW/SW platforms based on long-life components (including SIL 4 solutions)



## DIAGNOSTICS, TESTING, CALIBRATION AND CERTIFICATION

Compliance and diagnostic tests of the equipment installed in power plants and substations, and supervision of their construction are also important activities that ensure our employees a wide range of competences and direct contact with customers

The most important customers on the world market are the global companies from Germany, the Republic of Korea, Turkey, Sweden, Slovenia, Switzerland and Italy.

Most important partners in R&D field are companies from KONČAR Group. Most important markets for diagnostics, testing and certification are the Croatian and EU ones. Major companies in the power systems, telecommunications and transport areas are the Institute's long-time partners on the Croatian market.

## Research and development

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE



Applied and development research is directed towards acquisition of new knowledge that helps to solve current requirements on power equipment:

### Reduction of energy consumption

losses

### Increased dynamics

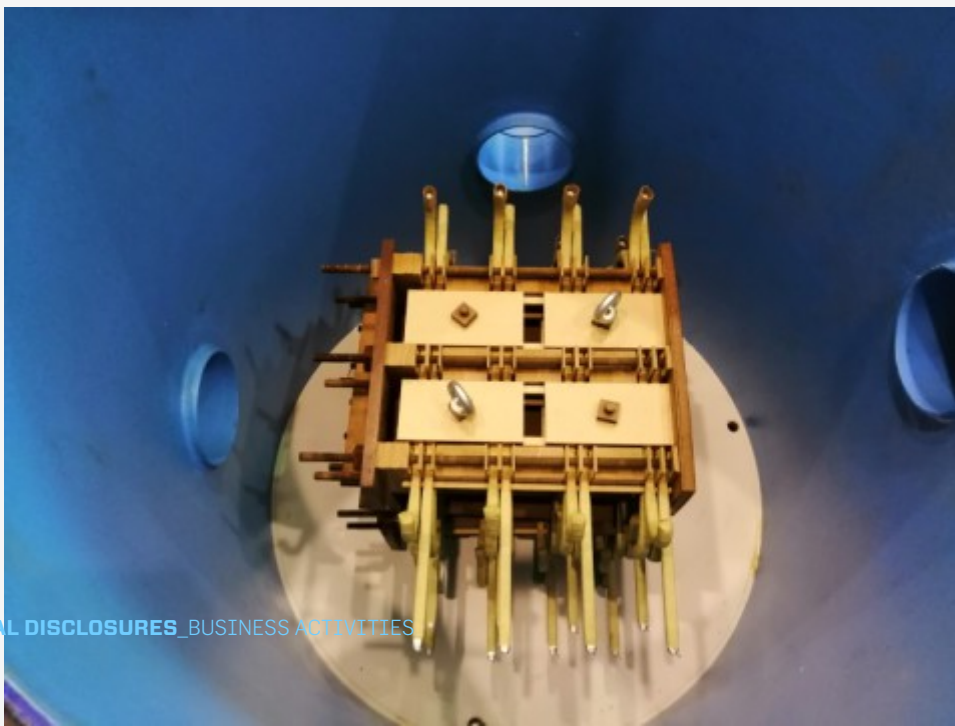
frequent starts, variable speeds...

### Equipment condition monitoring

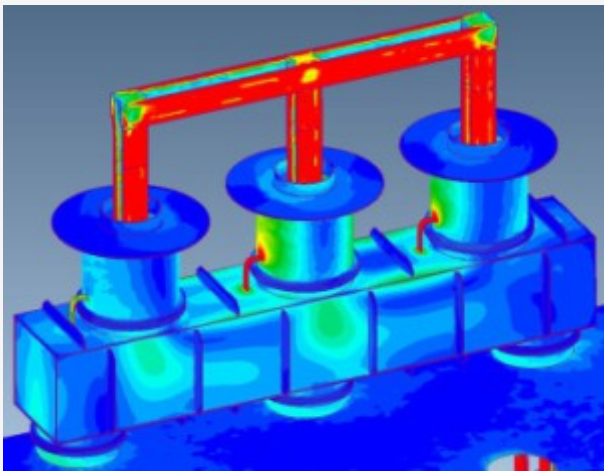
sensors and monitoring

### Controllability of equipment

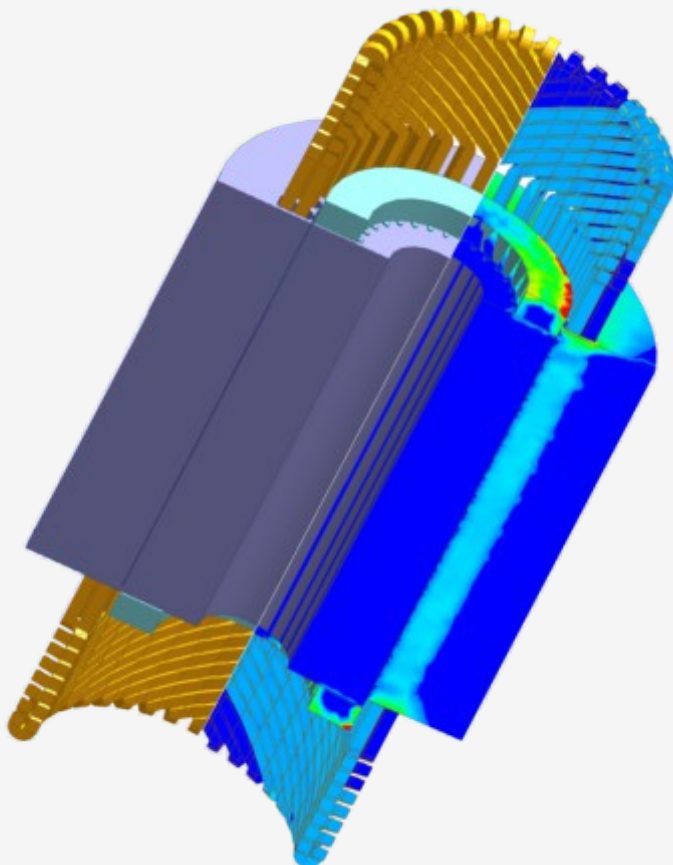
measurement of process variables



- Research of voltage conditions in the isolation system of power transformers including those for high voltage direct current (HVDC)
- Research of new environmentally friendly insulation materials
- Advanced materials, multiphysics analyses and simulations
- Hydrogen technologies
- Analysis of power and instrument transformers failures



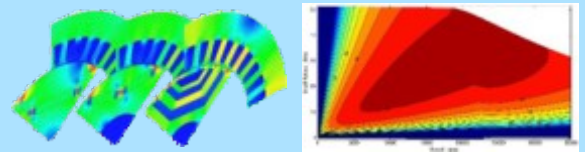
Development of high speed rotating machine for microturbine systems



Improvements and development of standard and special electric machines is conducted by means of modern calculation methods, precise geometry model simulations, physical model manufacturing and prototype testing

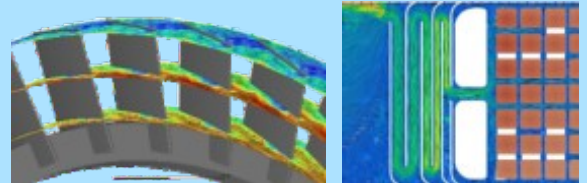
### Electromagnetism

- Machine loss disposition calculations
- Specific purpose analyses
- Optimization of active machine parts



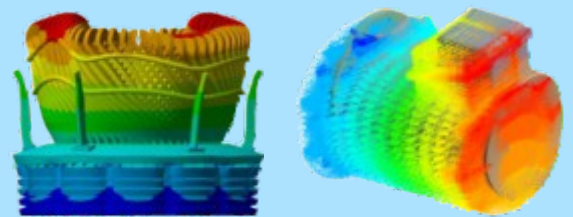
### Heath transfer

- Machine temperature distribution analyses
- Computation of fluid dynamics (CFD)
- Optimisation of cooling



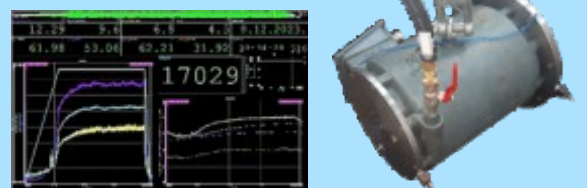
### Mechanics

- Varying load vibration calculation
- Determination of material fatigue
- Stress analyses



### Physical models

- Determination of precise characteristics
- Concept verification
- Prototype manufacturing



The Institute leads four strategic research projects conducted under the KONČAR 2020+ Integrated Strategy, which defines the main directions of development of the KONČAR Concern and openness to new technologies and business models:

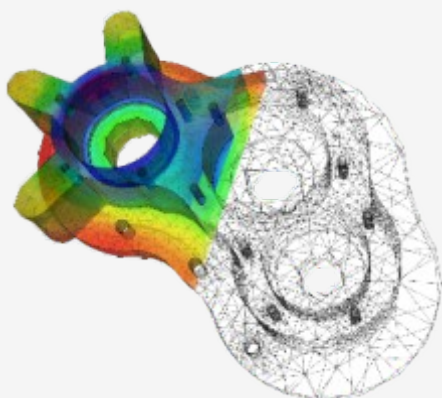


## Embedded computer systems in the power engineering and transport

The strategic goal of the project is to apply advanced digital technologies and establish the strategic area of Embedded Computer Systems (ECS) in the power engineering and transport. Planned research will result in competencies and know-how required for the digitalization of KONČAR's manufactory program and the development of a common ECS platform.

## Laboratory for electric drives and advanced networks

The strategic goal of the project is to set up a laboratory for advanced networks with *Power Hardware-in the loop* (P-HIL) real-time testing environment and build a laboratory for testing electrical motor drives for battery and hybrid trains. The laboratory will also serve as the basis on which to build testing capabilities for the power industry and transport products (converters, batteries, charging stations, motors, and system components for the production and utilization of hydrogen).



## Advanced materials and coupled analyses and simulations

The strategic goal of the project is to set up a platform for testing the existing and for researching and applying new materials, as well as a platform to build and apply numeric models for the optimization of product design. The plan is to build a complementary knowledge base for the Group, provide a support environment for multi-disciplinary teams of experts, and increase KONČAR's visibility in expert and science fields.




## Advanced microgrids in the power engineering and transport

The strategic goal of the project is to build competencies and know-how to support other companies within KONČAR using renewable energy, especially hydrogen technology combined with solar and wind energy, in the power engineering and railway vehicle industries. Another objective is to build a laboratory model of a micro-grid, which will enable research of physical phenomena and requirements for micro-grid components and solutions.



We are specialized in embedded control solutions according to the functional safety requirements for railways and machines, and adaptable modular solutions for application in numerous areas of human activity.



The **KONTRAC SafeHMI platform** has acquired considerable references within level crossing and signalling systems, based on SIL (Safety Integrity Level) HW/SW components.

## Systems with Functional Safety requirements



Systems with functional safety requirements ensure the highest level of protection of people's lives and safety of assets in work processes with a high potential risk.



The Safety Vest System (SVS) is a safety system for large-scale flexible warehouses that enables safe and efficient collaboration of humans and Automated Guided Vehicles (AGVs) with heterogeneous skillsets – in the same area and at the same time.

The SVS provides a safety-related stop function for AGVs and logistics vehicles in an industrial work environment.

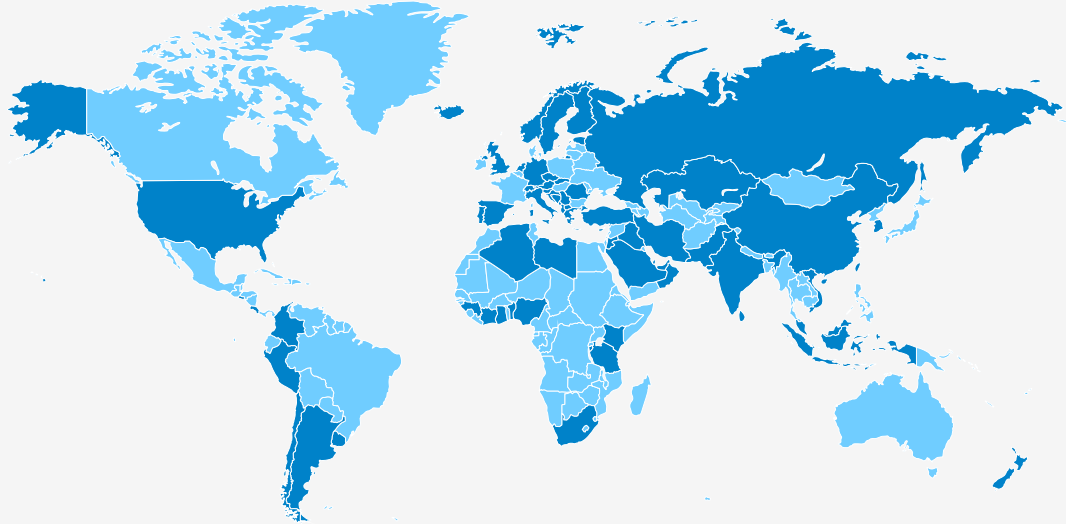
**We protect investments in property and primary equipment**

We ensure better management of capital assets, safe and reliable risk management

# Proprietary monitoring and control systems



Primary power equipment monitoring systems enable better management of vital components and risk management, thus contributing to a better quality of life for everyone



**780**

On-Line Condition Monitoring System (OLCMS) delivered

**64**

countries worldwide

**19**

years of digitalization of EES

## Transformer monitoring system – TMS

Končar TMS enables on-line monitoring and diagnostics of all vital parts of power transformers and reactors. It detects incipient faults, so that user can prevent failure by timely intervention.

The delivery of the TMS monitoring systems for Vasilikos CCGT6 project in Cyprus, New Zealand and the new customer on the demanding Korean market confirms the great export potential of the transformer monitoring system with KonFID platform.



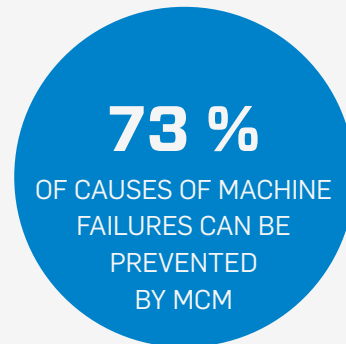


## Systems for machine condition monitoring and fault detection – MCM

To ensure reliable operation of the Rotating electrical machines we have developed various condition monitoring systems, whose main function is early detection of possible defects and prevention of major material and financial losses.

Features of monitoring systems:

- On-line systems
- Applicable to all kinds of primary equipment
- Modular and upgradable systems
- Long-term data storage and important events tracking (trends, waveform, alarms ...)
- Local and remote data access



## Partial discharge measuring and monitoring system iPDCore



By detecting and monitoring partial discharge, as the earliest signs of power equipment failure, the iPDCore system enables predictive maintenance of equipment and avoidance of catastrophic events. The system is intended for measuring all types of power equipment: transformers, cables, generators, and motors.

## Electromagnetic field monitoring system – MEP

11 SUSTAINABLE CITIES AND COMMUNITIES



Electromagnetic field monitoring system provides local communities with information about actual radiation values, thereby contributing to their safety.

MEP is a system for continuous monitoring of electromagnetic fields radiation at all frequencies. It enables local communities insight in monitoring results, i.e. in the actual radiation values. In this way all the interested can compare actual radiation values with the levels defined in the Regulations for Protection against Electromagnetic Fields.

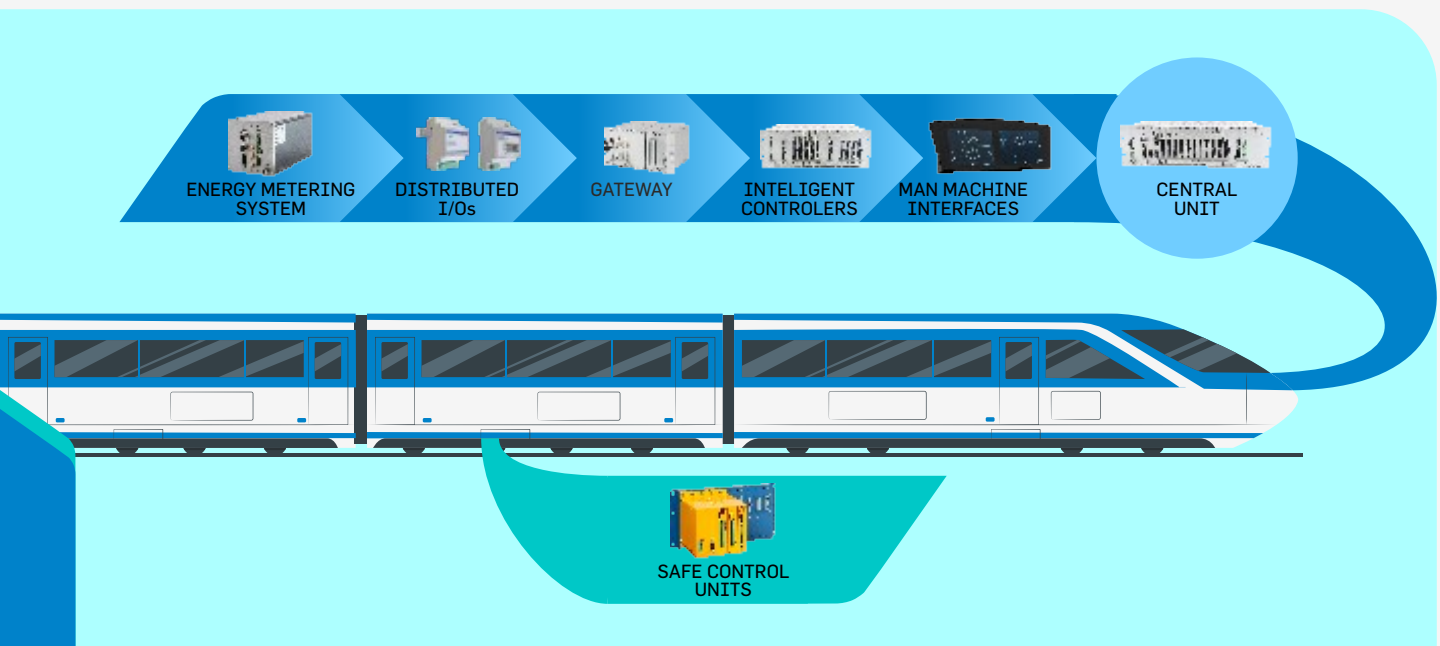
## Train control and management system – TCMS



We reduce the risks of premature obsolescence and product rejection through our own hardware and software platforms, helping to reduce emissions and accumulate unnecessary electronic waste.

After successful development of embedded control systems for locomotives and trams, the Institute has developed and delivered train control and management systems for new Croatian electric and diesel trains.

The platform comprises numerous hardware and software components which enable configuration of different control systems for various purposes and of various levels of complexity.



We are committed to the use of renewable sources and energy-efficient solutions. The Institute's contribution is related to water, sun and wind. We help modernize, monitor and diagnose vital equipment in hydro power plants, wind power plants and photovoltaic plants.

We provide expert assistance in the construction of photovoltaic power plants and develop reliable vital components.

Development of proprietary solutions for control electronics and software for power converters.

Photovoltaic power plant Vis was put into operation with a large contribution from the Institute, which participated in the development and delivery of KonSol power converters, as well as control electronics for the battery energy storage.



## Electric Multiple Unit – new generation of embedded computing systems

The Institute delivered train control systems for 21 Electric Multiple Units (EMU) purchased by HŽ Putnički prijevoz. Most of the equipment for this series of trains is based on the newly developed KonECS hardware and software platform that enables the configuration of industrial embedded computing systems (ECS) for various applications.



The equipment for the control system of battery-powered and hybrid electric trains was delivered as part of the "Use of green technologies in rail passenger transport" project. It is based on the KonECS hardware and software platform developed at Institute.

# Diagnostics, calibration, testing and certification



We help manufacturers to have their products tested so that they can be marketed.

## LABORATORY CENTER ACCREDITED UNDER EN ISO/IEC 17025

The unique accreditation according to the requirements of the HRN EN ISO/IEC 17025:2017 standard confirms the Laboratory Center's independence and competence in providing laboratory and field product testing services, using modern test and measurement equipment, meeting the requirements of this international standard and the needs of service users.

LC consists of nine laboratories accredited for about 750 test methods according to the requirements of international standards and technical specifications. Laboratory services are based on experts' competences, quality, speed and the so-called "one-stop testing" approach.



**HRN EN ISO/IEC 17025:2017** accredited according to a single standard

**9** modern equipped laboratories

**≈750** accredited test methods

**11** testing areas

### Laboratory testing services in the following areas:

- High-voltage and low-voltage power equipment, cables and conductors included
- Material properties
- Environmental impact
- Electromagnetic compatibility
- Electrical safety
- Radio equipment
- Sources of electromagnetic fields
- Low-voltage electrical installations and lightning protection systems
- Acoustics (noise)
- Testing the physical-chemical properties of materials
- Calibration of measuring and test equipment

### Checking the condition of power equipment and systems

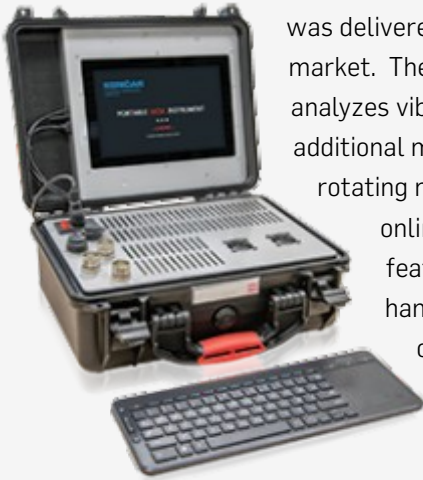
- Diagnostics of power and instrument transformers
- Diagnostics of switchgears in HV plants
- Diagnostics of rotating machines
- Acoustic diagnosis
- Energy efficiency
- Quality of electricity
- Measurements of NF and HF fields
- Non-destructive testing (NDT)

## Laboratory Center becomes a DEWA & TRANSCO approved testing laboratory

In 2023, the Laboratory Center was authorized by DEWA (Dubai Electricity & Water Authority) and TRANSCO (Abu Dhabi Transmission & Despatch Company) by placing it on the list of laboratories approved for power equipment testing, further strengthening its position in the highly demanding UAE market. This is a confirmation and acknowledgment to LC that it can compete with renowned world laboratories with its knowledge, competences and testing capabilities. These approvals are proof of LC's expertise and opening up opportunities to expand business activities.

## Portable instrument for air gap and vibration measurement

The first portable instrument for measurement of vibration and air gap for rotating machines was delivered to the Central American market. The instrument measures and analyzes vibrations and air gap when additional measurements are required or the rotating machine is not equipped with an online monitoring system. Basic features are modularity, easy handling and adaptability to all needs of users in maintenance and safe and efficient operation of rotating machines.



## LAVESP Laboratory

The construction and start of operation of the LAVESP Laboratory is an important step forward for LC and the expansion of testing possibilities in the field of high-voltage testing. LAVESP's first contracted job was dielectric testing of a HV power cable for a foreign customer. The testing of the composite insulator 160kN-T/S/J (Wet power frequency voltage withstand test) is particularly noteworthy due to the highest test voltage of 850 kV.



770 turbo / hidro generators

7.100 motors

42

years of experience in testing

4.230 power transformers

40.500 instrument transformers



## NOTIFIED BODY AND PRODUCT CERTIFICATION BODY (SCERT) ACCREDITED UNDER EN ISO/IEC 17065



We assist manufacturers in assessing compliance of their products with regulations to determine their safety and reliability for the user and the environment.

KONČAR – Electrical Engineering Institute, as a Notified Body (NB), assists manufacturers in conformity assessment and certification of their products in accordance with European standards and directives, before CE marking and placing on EU market.

In addition to conformity assessment as a Notified Body, the Institute assesses product conformity as an authorized/accredited Certification Body (SCERT) for products and processes in the areas of LV and HV equipment, corrosion or IP/IK protection, ecological design, energy labelling, welding procedures for metal materials, and signalling and traffic regulation equipment. It is also equipped for assessment of product conformity to climatic conditions and noise and vibrations.



Accredited certification schemes of Institute enable conformity assessments and certification of products intended for markets other than EU that are made in accordance with ISO and IEC standards or manufacturer specifications.

KONČAR – Institute is a Notified Body NB 2494 of the European Commission for the following regulations:

- electromagnetic compatibility (Directive 2014/30/EU)
- noise emission in the environment by equipment for use outdoors (Directive 2000/14/EC)
- radio equipment (Directive 2014/53/EU)
- welding procedures of pressure equipment (Directive 2014/68/EC).



## Product conformity assessment

Well-equipped laboratories and a wide range of accreditations, authorizations and notifications of the Institute enable numerous and diverse services:

- Type testing of products in our test laboratories
- Verification of test reports issued by other laboratories
- Expert supervision of tests in external laboratories
- Assessment of completeness of technical documentation
- Conformity assessment of technical documentation
- Assessment of product design
- Type examination of products for certification purposes
- Certification
- Auditing compliance with the type of product



## Certification (SCERT) and Inspection Bodies

Product Certification Body – SCERT is an independent unit within the Institute that impartially certifies products.

Inspection Body impartially inspects and calibrates power and measuring equipment used in testing electrical installations.



The Institute's Laboratory Center and Certification Service (SCERT) are accredited by the Croatian Accreditation Agency and designated by the European Commission as a notified body for important EU Directives. They are also known globally for their adaptability, expertise and one-stop testing operations. Thanks to all that, LC and SCERT have been included in the list of the world's leading laboratories, i.e. the CBTL (Certification Body Testing Laboratories) scheme, as well as the list of DEWA (Dubai Electricity & Water Authority) and TRANSCO (Abu Dhabi Transmission and Despatch Company) approved laboratories.

## Supply chain

Business activities of the Institute are based on a wide scope of suppliers and business partners mostly from electrical industry, but also from numerous other fields. Code of Business Ethics is the basis on which the Institute develops its relations with suppliers, business partners and all the stakeholders. Partners in the supply chain, apart from required quality, should also observe the best of human rights and working conditions, occupational health and safety, and environmental and ethical concerns.

Because of very stringent requirements on products and services, the purchasing processes in the Institute are mostly based on agreements and contractual arrangements oriented towards quality, competitive prices, respect and integrity. Choice of suppliers is based on their professionalism and competence, and the purchasing process and choice of suppliers are implemented in an objective and transparent way.

Providers of outsourced services are selected according to their technical capabilities and competences (references, cooperation so far). If necessary, periodic audits of suppliers are carried out to check their

competencies and ensure the continuous quality of their services.

Suppliers are evaluated and approved by the laboratories. At least once a year, suppliers are re-evaluated on the basis of the same criteria and quality of their deliveries to ensure quality of the tests.

When evaluating suppliers, numeric and statistical methods can be used (e.g. grading from 1 to 5 for each criterion). This kind of assessment is recommended if there is a problem and if the supplier should improve the service or the product. In that case, the supplier is informed about the grade and need to improve.

A supplier is removed from the list if does not meet the criteria to such an extent that it may jeopardize the quality of the work for which the service or product is intended, in particular if it could jeopardize the quality of the test or calibration or affect the customer's satisfaction.

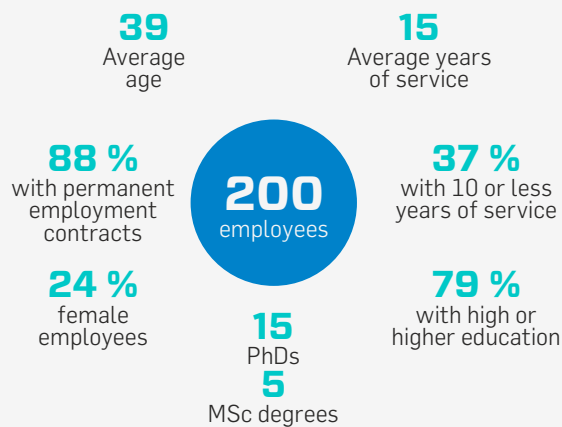


### Suppliers are selected according to the following criteria:

- technical and functional characteristics and capabilities
- proofs of quality assurance (certificates, test reports ...), instructions
- delivery time and mode of transport
- reaction speed and cooperativeness
- price and payment terms.

# WORKERS

## Employee structure



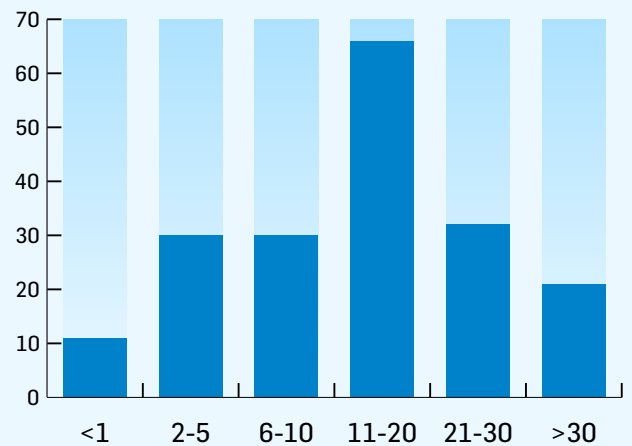
**GRI 2-7** At the end of 2023, the Institute had 200 employees, i.e. 10 associates more than at the end of 2022. Among them, 79% have high or higher education, and perform tasks in the field of technical professions (89%), in which electrical engineering is the most represented.

According to the type of employment contract, at the end of 2023, 88% of employees had a permanent contract, 6% had a temporary contract, 4% were trainees, and 2% had a contract with special rights, obligations and fees. Also, 97% of employees worked full-time.

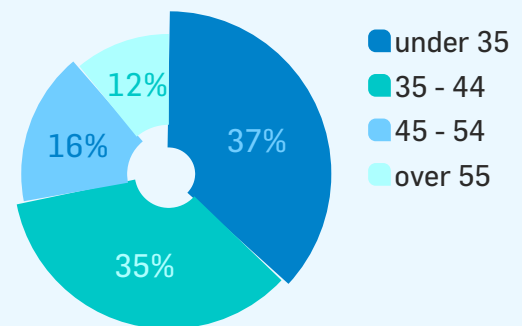
## Workers who are not employees

The Institute hires few workers who are not full-time employees. These are mostly students hired for occasional work, people hired through service and authorship agreements for individual projects, and seldomly for occasional cleaning and maintenance services.

## Employees by years of service



## Employees per age



## Employment contracts

	Male	Female	Total
Permanent	136	41	177
Temporary	9	4	13
Trainees	6	1	7
With special rights, obligations and fees	2	1	3
<b>Total</b>	<b>153</b>	<b>47</b>	<b>200</b>
<b>From which</b>			
Full-time employees	153	42	195
Part-time employees	-	5	5

# GOVERNANCE

## GRI 2-9/21 Governance structure and composition

KONČAR – Electrical Engineering Institute is a research, development, and services limited liability company fully owned by KONČAR – Electrical Industry Inc. (Parent Company). Companies within the KONČAR Group are independent legal entities.

### Managing Board

The Managing Board of the company consists of one to up to three members. All Managing Board members are equal in position and status, while the Managing Board President coordinates the entire Board. The Managing Board is appointed and dismissed by the Assembly. The Assembly also decides on the number of Board members and their term, which cannot be longer than 4 years.

The Managing Board manages the business of the company in accordance to laws, the Articles of Incorporation and the Rules of Procedure. The Board is mandated to protect the company interest, which includes the interest of company members, its employees and public interest.

For some decisions previous agreement of the Assembly is required, as described in the Articles of Incorporation.

### Assembly

The company Assembly consists of the only company member. The Assembly decides on financial reports, appointment and dismissal of Board members, and other issues pursuant to the Companies Act and the Articles of Incorporation.

The Assembly meets at least once a year and promptly upon determination that the company is operating with a loss.

## Organizational structure

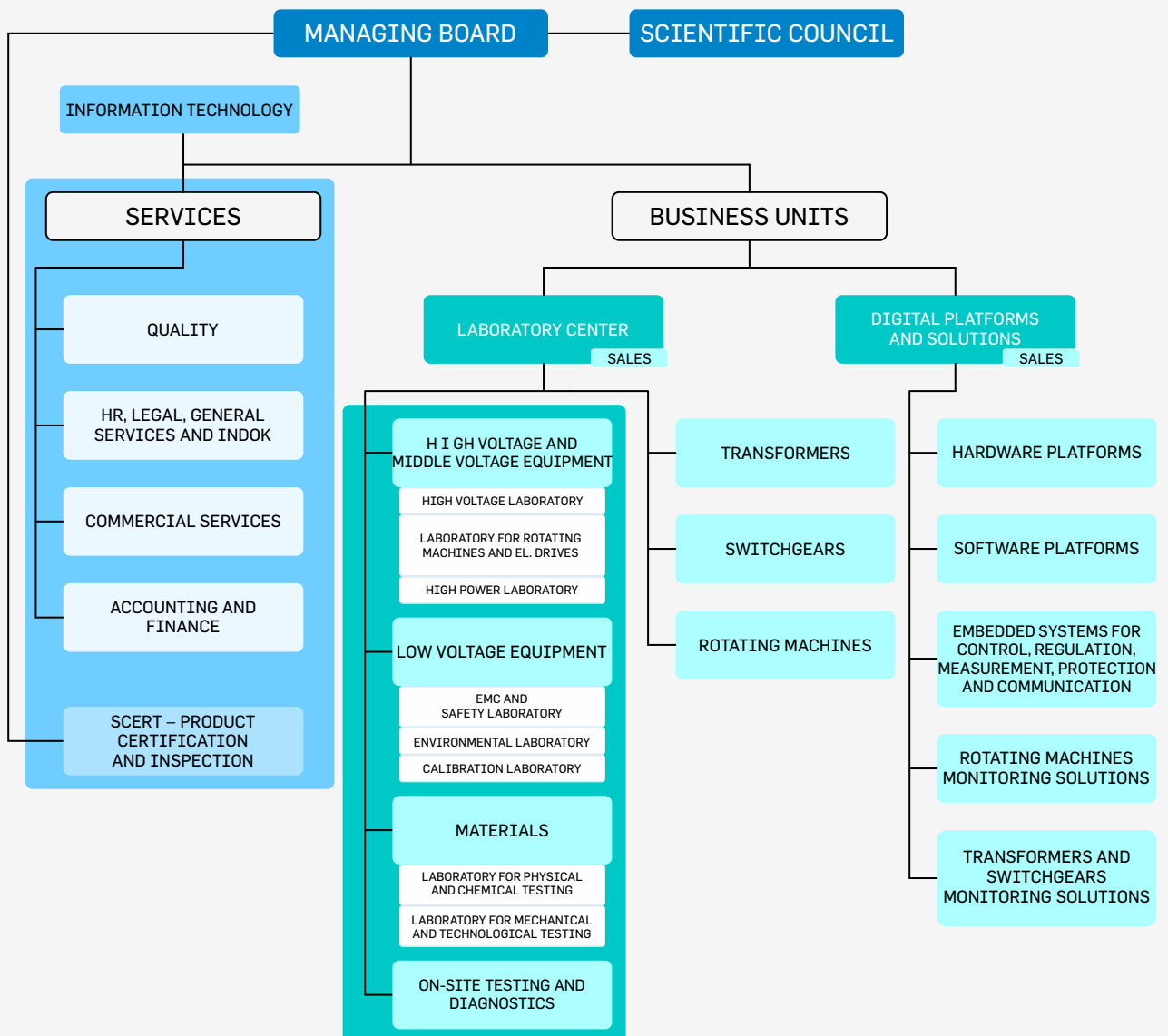
The basic organizational structure of the Institute is set down by the Managing Board and approved by the Assembly.

From 1<sup>st</sup> January 2023, the Institute operates according to the new organizational structure which enables an efficient way of adapting to market requirements and investing its own resources in new technologies and applied research for the purpose of developing new solutions and services. The results of this approach are the trust of employees and customers and the creation of competitive products whose features and quality meet customers' needs.

Business units act as profit centers, whose effectiveness is measured by newly created value and is the basis for rewarding employees, while the success of individuals or teams is rewarded by personal stimulation or one-time monetary reward, depending on the contribution to the operation of the Institute or creation of conditions for future successful business operations. Business activities of the Institute are carried out in business units with the support of joint services, so that rewarding the services is related to the joint success of two profit centers.

Within the Institute there is the independent, accredited Certification and Inspection Body. The work of Product Certification Service – SCERT is supervised by representatives of government bodies and consumer associations. Certification Service – SCERT is accredited under EN ISO/IEC 17065:2012 Conformity assessment – Requirements for bodies certifying products, processes and services, and the Inspection Service for Power and Measurement Equipment under EN ISO/IEC 17020:2012.

## Organisational chart



# STRATEGY, POLICIES AND PRACTICES

## Policy of governance and social responsibility

**GRI 2-22** The policy of governance and social responsibility expresses the unambiguous orientation of the Managing Board to the application of a management system based on the principles of sustainable development and social responsibility and the permanent improvement of the system.

## Strategy of Sustainable Development of the Institute

- To permanently increase productivity with intensive investments in research and development of new products and services, lifelong education of employees and construction of new and modernization of existing laboratories
- To operate on the principles of sustainable development and social responsibility while developing and nurturing partnerships with all stakeholders
- To develop cooperation with the academic community
- To be an accredited scientific organization with an independent status in the KONČAR Group
- To be, according to market principles, a key support in the development of the Group's other companies

## Principles of corporate governance, standards, and norms of behavior

Within its sphere of influence, the Institute supports and implements all the measures and obligations prescribed by law and international standards for the areas of business ethics, workers' rights, occupational health and safety and environmental protection.

**GRI 2-23** As a part of KONČAR Group, the Institute supports the principles of corporate management adopted by the Management and Supervisory Boards of KONČAR – Electrical Industry on 22 December 2020 concerning:

- Socially responsible management,
- Defining a procedure of corporate management based on recognizable adopted international standards, and
- Supervision of business activities

to establish high standards of corporate management and business transparency as the basis for protection of shareholders, investors and other stakeholders, and for care for workers, sustainable development and environmental protection.

## Code of business ethics

The Institute is a signatory of the CODE OF BUSINESS ETHICS of the Croatian Chamber of Economy.

In our business practice, we follow the highest ethical standards, and build our reputation on expertise, trust and reliability. All employees are encouraged to follow the Code in their work and everyday activities, and the Code covers rules and procedures, guidelines for decision making and examples of potential ethical dilemmas related to business activities.

## Precautionary Principle or approach

Through commitment to sustainable development strategy, the Institute is guided in its business processes by Precautionary Principle in accordance with Act on Environmental Protection and its actual capabilities. Precautionary Principle means that in case when scientific and objective evaluation indicates that there is a possible environmental or health risk, measures for its prevention are implemented although the damage is not fully certain.

## Integrated management system

**GRI 2-24** The market competence of the Institute and its recognizability in social community are based on the Integrated Management System which covers quality management system (ISO 9001), environmental management system (ISO 14001), occupational health and safety management system (ISO 45001), system for management of testing and calibration laboratories (EN ISO/IEC 17025), and system for management of certification bodies (EN ISO/IEC 17065).

Integrated management system enables the Institute to apply principles of corporate social responsibility with balanced relation to customers, employees, owners, suppliers and social community. It defines roles and responsibilities, organization and processes that are important for achievement of high level of quality of our products and services. Through such processes the Institute communicates with customers and other stakeholders, realizes products, achieves goals, learns, and makes continual improvements.

- **ISO 9001**  
Quality management system (QMS) – focused on processes to meet stakeholder expectations and ensure permanent improvement



- **ISO 14001**  
Environmental management system (EMS) – focused on environmentally friendly activities and products with a view to improving positive environmental impact



- **ISO 45001**  
Occupational health and safety management system (OHSMS) – health and safety at work ensures a safe and healthy work environment for creating reliable and efficient technical solutions



- **ISO/IEC 17025**  
Competence of testing and calibration laboratories  
General requirements for the qualification of test and calibration laboratories carrying out tests or calibrations. The results obtained are shown in test reports or calibration certificates.



- **ISO/IEC 17065 / ISO/IEC 17020**  
Competence of certification and inspection bodies  
General requirements for the training, impartiality and consistency of the body carrying out the certification of the product.  
General requirements for the competence of the body conducting the inspection and for impartiality and consistency in the conduct of inspection work



- **Nuclear safety requirements** for product and service providers classified as Safety Related (SR)

**GRI 2-26** Pursuant to the Law on the Protection of Reporters of Irregularities, the Institute's management adopted the final text of the Ordinance on the Procedure for Internal Reporting of Irregularities and the Appointment of a Confidential Person which regulates the procedure and method for appointing the reporter, the procedure and method for appointing a confidential person, the protection of the reporter of irregularities and the preservation of the received data and other important issues for reporting and protection of the reporter of irregularities.

**GRI 2-27** The Institute has no recorded cases of irregularities.

### **GRI 2-28 Membership associations**

- Croatian Academy of Engineering (HATZ)
- Croatian Business Council for Sustainable Development (HR PSOR)
- Croatian Chamber of Economy (HGK)
- Croatian Chamber of Electrical Engineers (HKIE)
- Croatian Chamber of Mechanical Engineers (HKIS)
- Croatian Exporters Association (HIZ)
- Croatian Hydrogen Association (CROH2)
- Croatian Laboratories (CROLAB)
- Croatian National Committee of the International Council on Large Electric Systems (HRO CIGRÉ)
- Croatian Standards Institute (HZN)
- European Committee for Electrotechnical Standardization (CENELEC)
- International Conference on Electricity Distribution (CIRED)
- International Council on Large Electric Systems (CIGRÉ)

**The Institute is a member  
of Croatian Business Council  
for Sustainable Development since 2010.**



Hrvatski poslovni savjet za održivi razvoj  
*Croatian Business Council for Sustainable Development*



# STAKEHOLDER ENGAGEMENT

## GRI 2-29 Approach to stakeholder engagement

Internal procedures were established for recognition of particular stakeholders with which business units and services mostly interact in their everyday activities, stakeholders' requirements, frequency of interaction, way of communication, and relevance of stakeholders in regard to Institute's sustainable development.

The recognition process has three steps:



The procedure refers to the collection, storage and processing of stakeholder requirements related to their satisfaction and expectations as well as to the information provided in the previous report. The content of the report includes all the expectations, expectations and satisfaction ratings related to the topics of sustainable development, which were received from the involved stakeholders during the reporting period.

## Communication with stakeholders

Internal and external communication in the Institute is continuously improved and new channels of communication are included in order to expand marketing and sales activities and include all interested stakeholders. Some of the most important means of communication and stakeholder involvement in 2023 were:

## Fairs and conferences

In synergy with other companies of the KONČAR Group, the Institute participates in international and domestic specialized fairs and professional conferences. In 2023, the Group's companies participated in 7 fairs and 12 meetings, 470 m<sup>2</sup> of exhibition space was leased, and 530 representatives from 13 companies were involved. Out of the Institute there were 53 associates present, and 60 publications (scientific, expert or referral) were published in various publications.

## Official webpages

The Institute's webpages are constantly upgraded and harmonized with new requirements, offering information on business activities, organization of the Institute, solutions and services, references and a multitude of useful data related to electrical engineering, mechanical engineering, electronics and other technical sciences. The first page was published in 1996 at [www.koncar-institut.hr](http://www.koncar-institut.hr). At the end of 2023, the new KONČAR Group website was put into operation, which structurally connects all Group companies with content and modern design. In the next period, the development and implementation phase will continue, in which the companies will migrate to the new website.

## Social networks

In order to increase its virtual presence and enhance communication with stakeholders, the Institute uses LinkedIn, the world's largest business network, to publish business related information, information on new projects, products and services, as well as to announce its participation in trade fairs and conferences. The KONČAR – Electrical Engineering Institute LinkedIn page (<https://www.linkedin.com/company/koncar-electrical-engineering-institute-inc/>) has about 12,000 followers with about five new posts published every month. The Laboratory Center | KONČAR – Electrical Engineering Institute showcase page went live with information on services, business, and projects of the Laboratory Center (<https://www.linkedin.com/showcase/laboratory-center/>).

## Intranet

The Institute's intranet is the central information point for employees with instructions and forms necessary for everyday work, databases of professional knowledge and norms, ordinances and other acts. The platform also contains interesting business events, as well as events related to employees, the introduction of new employees and awards and provides an overview of published scientific and professional papers of associates. Information and file management, archiving and searching, joint teamwork and creation of knowledge databases are ensured by MS Office SharePoint Server – MOSS document management system.

## List of stakeholder groups

The nine key stakeholders of the Institute have been identified. Stakeholders, their needs and expectations, and the type and frequency of communication are presented in the following table.

GRI 2-30

## Collective bargaining agreements

At the end of 2023, more than 95 percent of employees in KONČAR were covered by the application of the KONČAR Collective Agreement. Employees who were not covered by the application of the Collective Agreement were provided with at least the same standard of rights guaranteed by the collective agreement, by the company's internal acts and decisions. In February 2023, a new Collective Agreement was signed, which is harmonized with the provisions of the Labor Law. The procedure for the peaceful resolution of individual labor disputes is prescribed by the Collective Agreement and the special Ordinance on conciliation in individual labor disputes.

Stakeholders	Stakeholder needs and expectations	Type and frequency of communication
<b>CUSTOMERS</b>	Quality of products and services Observing delivery times Customer relationship management and methods of complaint solving Responsible resource management Ethical principles Customer privacy	Regular meetings, workshops, consultations Professional training when necessary Solving and analysis of complaints, requests and suggestions, when necessary Annual customer satisfaction survey Fairs, conferences, gatherings Official website, e-mail (continuous) Annual visits to customers Annual Sustainability Report
<b>EMPLOYEES</b>	Salaries and allowances Good working environment Personal development, respect and rewarding Stable business Occupational health and safety Training and education Non-discrimination	Annual employee satisfaction survey Training and education, continuous Intranet, continuous E-mail, continuous Annual Sustainability report
<b>SHAREHOLDERS AND INVESTORS</b>	Corporate business strategy Value added Sustainable business	Annual general meeting Letters, e-mail, when necessary Annual Sustainable report
<b>SUPPLIERS AND PARTNERS</b>	Mutual benefits and long-term relations Management systems Ethical behavior	Participation at conferences Mutual annual audits Official webpage, continuous Annual Sustainability report
<b>LABOUR COUNCIL</b>	Participation in management Legal compliance Freedom of association and right to collective bargaining	Regular and extraordinary meetings Notice boards, continuous Annual Sustainability report
<b>BUSINESS AND PROFESSIONAL ASSOCIATIONS</b>	Financial support Strengthening competences	Membership, continuous Working groups, working bodies, continuous Participation at conferences Annual Sustainability report
<b>SCIENTIFIC COMMUNITY</b>	Applied R&D Transfer of knowledge Joint projects	Scientific and professional papers Seminars and workshops, when necessary Participation at conferences and gatherings Joint activities Annual Sustainability report
<b>PUBLIC ADMINISTRATION BODIES</b>	Paying taxes, contribution and charges Compliance with laws and regulations Reporting	Working groups, continuous Letters, e-mail, continuous Official webpage, continuous Annual Sustainability report
<b>LOCAL COMMUNITY</b>	Investments in local initiatives Protection and rational use of resources (economic, environmental and social)	Regular visits and joint activities Donations and sponsorships Official webpage, continuous Annual Sustainability report



# Topic Disclosures

We observe  
highest  
principles of  
professional  
ethics and good  
business  
practices

# MATERIAL AND NON-MATERIAL TOPICS

GRI 3

## GRI 3-1 Process to determine material topics

Stakeholder inquiries, data requests and suggestions are carefully recorded to focus attention on the most important sustainability issues. We also monitor the development of the requirements of the new GRI standards in determining material topics and adaptation to the principles of double materiality. In the reporting period, data obtained through the process of determining the most important material topics of sustainability are analysed in 5 steps:



The process of identifying actual and potential impacts on the economy, environment and people is part of regular activities and takes place through various mechanisms presented in the Institute's stakeholder map. The process of determining the most important material topics of sustainability includes the collection of data on topics related to sustainability, analysis of the importance of impacts, identification of priority topics and validation.

The Institute's report contains data obtained from multiple sources, including feedback from our key stakeholders, general market data and interviews with management, employees and relevant departments.

Different approaches are used to effectively understand the priorities and needs of our external and internal stakeholders (surveys, interviews, official and unofficial meetings, etc.). In order to ensure a reasonable and balanced representation of topics that show negative and positive impacts, each topic is considered separately according to its importance for the reporting period. The finally defined material topics are checked by the Management to ensure compliance with the Institute's business values and strategy.

As a result of the conducted analyses, the following topics have a significant impact on the Institute and are of great importance to the stakeholders and were included as material.

## GRI 3-2 List of material topics

### Economic

- Economic performance
- Indirect economic impact

### Environmental

- Energy
- Emissions
- Waste

### Social

- Employment
- Occupational health and safety
- Training and education
- Diversity and Equal Opportunity
- Communities

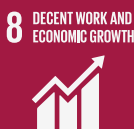
## Changes in reporting

There were no changes in material topics compared to the previous report. All inquiries and requests from stakeholders in the reporting period were already included in the content. Each year material topics shall be reviewed in terms of importance and harmonized with the requests and feedback received from the stakeholders involved. Each material topic has been accompanied by Disclosures 3-3 Management of material topics.

## Non-material topics

Based on the records of interests of stakeholders and the Institute, some topics were included in the Non-material topics category, because they did not have a significant impact on the economy, environment and people in the reporting period, but were part of previous reports. In order to respect the comparability of reporting and a completeness review of the Institute as a KONČAR Group, and for clarity of presentation, the content is presented as a separate category.

## GRI 201 Economic performance



Our solutions improve resource management, reduce plant maintenance costs, and extend the lifespan of primary equipment.

The Institute's economic growth is based on cutting-edge R & D services, competent and well-equipped laboratories, and competitive advanced IT-based solutions. It also plays an important role in the development of key electronic and energy components and communication equipment of KONČAR's production program.

The Institute participates in research, development, testing, supervision and expertise on a large number of KONČAR Group projects. In addition to providing support to KONČAR Group companies, the Institute's experts cooperate globally in the development of rotating machines and safety critical embedded computing systems for a foreign customer. The export potential for the global market are also transformer, bushing and machine monitoring systems and laboratory testing.

It is also investing in the reconstruction of the existing and construction of new laboratory infrastructure. The modernization of laboratory infrastructure is a prerequisite for improving the testing and the market position of the Institute. The strategy of providing laboratory services is based on competences, quality, speed and the so-called "one-stop testing" approach.

GRI 201-1 **Direct economic value generated and distributed**

Component	(mil. €)				
	2019	2020	2021	2022	2023
<b>Direct economic value generated</b>	<b>10.34</b>	<b>10.03</b>	<b>12.32</b>	<b>13.54</b>	<b>16.15</b>
Sales	9.24	9.54	11.98	13.18	15.95
Financial income	0.03	0.01	0.01	0.03	0.04
Asset income (rental and sales)	0.30	0.01	0.04	0.04	0.08
Income from co-financed projects	0.77	0.36	0.17	0.16	0.08
<b>Direct economic value distributed</b>	<b>9.22</b>	<b>9.33</b>	<b>10.56</b>	<b>11.30</b>	<b>13.05</b>
Suppliers of materials and services	3.06	3.25	4.31	4.44	4.39
Education & training	0.12	0.06	0.06	0.09	0.19
Services of academic community	0.30	0.13	0.05	0.04	0.05
Other costs	0.13	0.53	0.17	0.12	0.79
Salaries & allowances	3.36	3.33	3.76	4.46	4.92
Taxes, contributions, insurances	2.23	1.99	2.20	2.38	2.68
Donations	0.02	0.01	0.01	0.01	0.01
<b>Retained earnings</b>	<b>1.12</b>	<b>0.70</b>	<b>1.75</b>	<b>2.24</b>	<b>3.11</b>

In 2023, the income from diagnostic and on-site tests was higher than planned, and the income from the Laboratory Center's services has also increased. Laboratory HV equipment testing, transformer and bushing monitoring systems, rotating machine monitoring systems and development services for safety critical embedded computing systems were the most important export products and services. Revenue from sales amounted to €15.95 million in 2023, 41% from diagnostics, testing and certification, 31% from proprietary solutions, and 28% from research and development.

The following figure shows sales revenue for key business activities for the past five years.

The Institute operates exclusively with its own funds and is not exposed to interest rate, credit, and liquidity risks. Its short-term assets are 3.8 times higher than short-term liabilities, and in short-term assets 42% include financial assets and cash that, together with open liabilities, after the end of the business year, ensure stable operations of the Institute in the forthcoming period.



The Institute's Development Strategy defines how the Institute builds its long-term sustainable development in the areas of electrical engineering and transport, specifically on:

- premium research and development services;
- competent and well-equipped laboratories within the Laboratory Center;
- competitive advanced solutions, such as electrical equipment monitoring systems and rail management systems

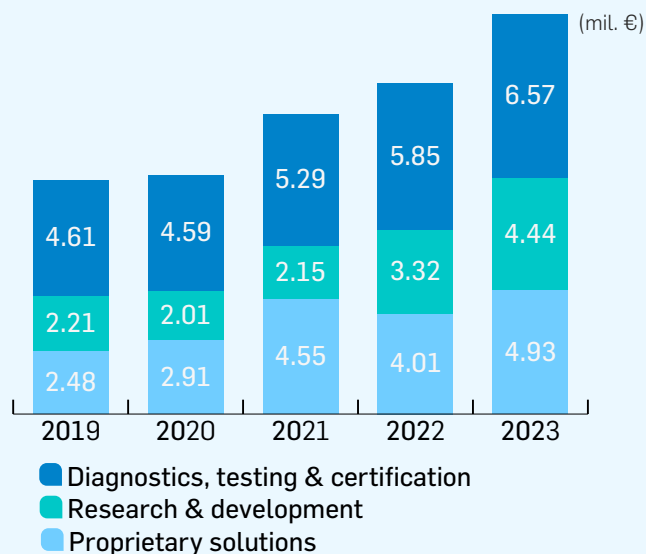
In addition to supporting the development led by the Group's companies, the Institute develops its own platforms of embedded computer systems and solutions for different users. These are regularly solutions that are suitable for IoT projects, i.e., digitalization processes such as: monitoring systems of primary equipment, control and visualization systems and various embedded computer systems. It is planned to further develop its own platforms of embedded computer systems, i.e., modernization of existing and development of new HW/SW platforms and horizontal connection with Group companies in order to expand the scope of these proprietary solutions.

It is planned to continue the investment in competencies within the Certification Services and the Services for Electrical and Measurement Equipment Inspection. These services, together with the Institute's certification for 4 EU directives (Notified Body 2494), further increase the Institute's visibility on the market for laboratory, diagnostic, certification and inspection services.

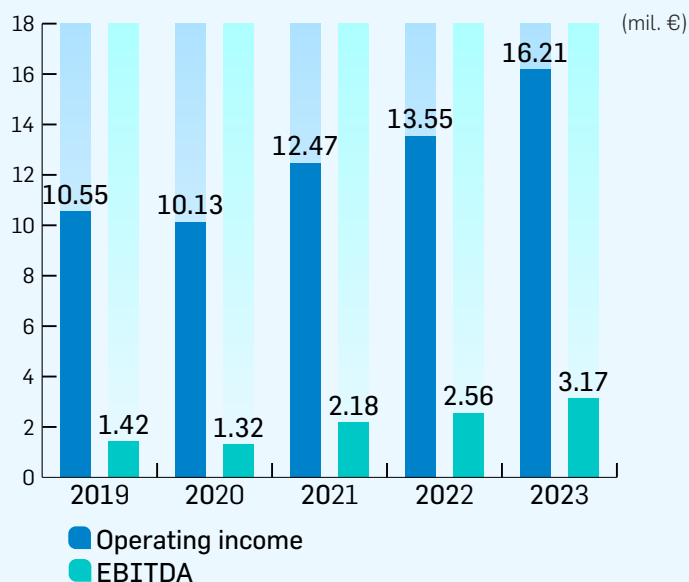
### Key business indicators

Productivity measured by value added per employee in 2023 was €49,829, which is a 3.9% increase compared to 2022. In 2023, operating income was €16.21 million, while EBITDA amounted to €3.17 mill. In the last 5 years, the average annual sales revenue growth was 14.8%.

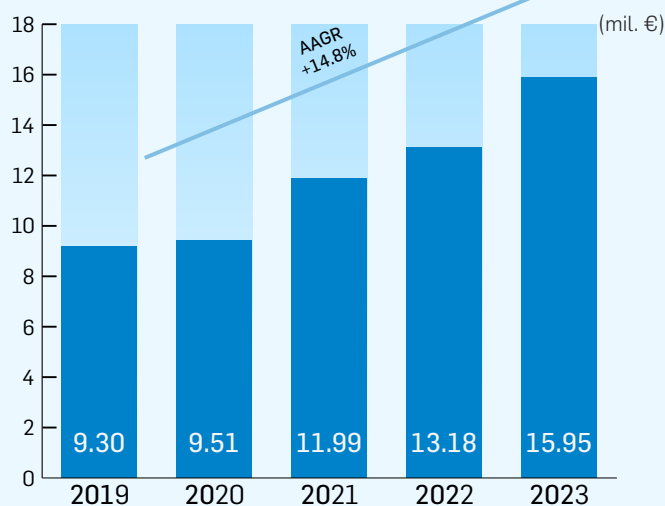
### Sales per business activities



### Operating income; EBITDA



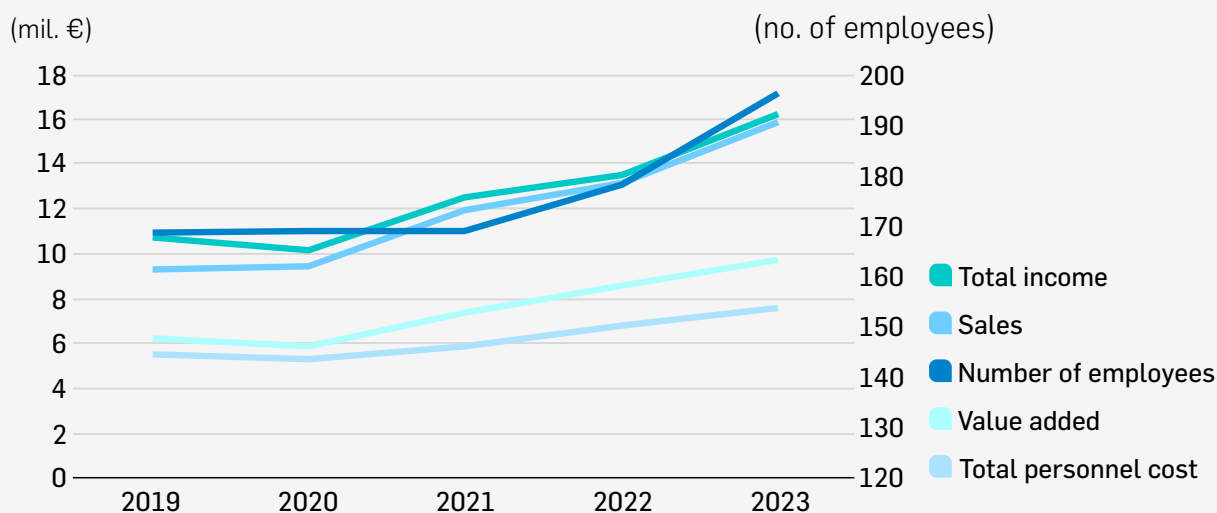
### Sales revenue; AAGR\*



\*Average Annual Growth Rate

## Trends in total income, sales, value added, total personnel cost, and number of employees

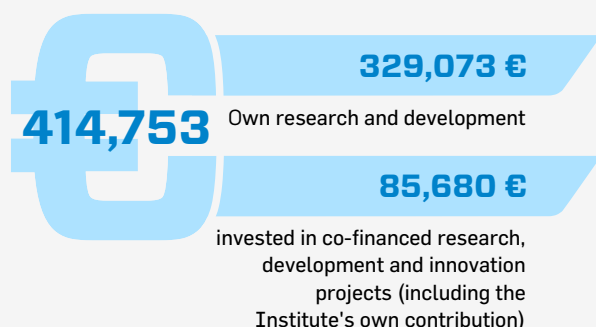
Trends in total income, sales, value added, total personnel cost, and number of employees in the last 5 years are shown below.



	(mil. €)				
	2019	2020	2021	2022	2023
Investments in equipment & refurbishments	0.57	0.55	2.87	4.35	4.56
Investment maintenance	0.08	0.07	0.19	0.19	0.39
Software license and maintenance	0.21	0.15	0.18	0.28	0.29
Investments in R & D	1.03	0.99	0.69	0.38	0.41
Education	0.12	0.06	0.05	0.09	0.18

### Investment in assets

In 2023, investments in non-current assets amounted to €4.56 mill., €0.49 mill. in the construction of the new LAVESP project lab, €0.09 mill. in modernization of the Laboratory for the Rotating Machines and Drives, €3.58 mill. in equipment, and €0.33 mill. in software and development. Investment maintenance of equipment and buildings amounted to €0.39 mill. Investments in education with total eligible costs (tuition fees, registration fees, professional literature and official trips related to training) amounted to €0.18. The license and maintenance cost of the software was €0.29 mill.



### Investments in R & D

Numerous R & D and innovation projects are underway, which are either co-financed from national or EU funds or financed solely with Institute's own funds.

In 2023, investments in research and development amounted €414,753.

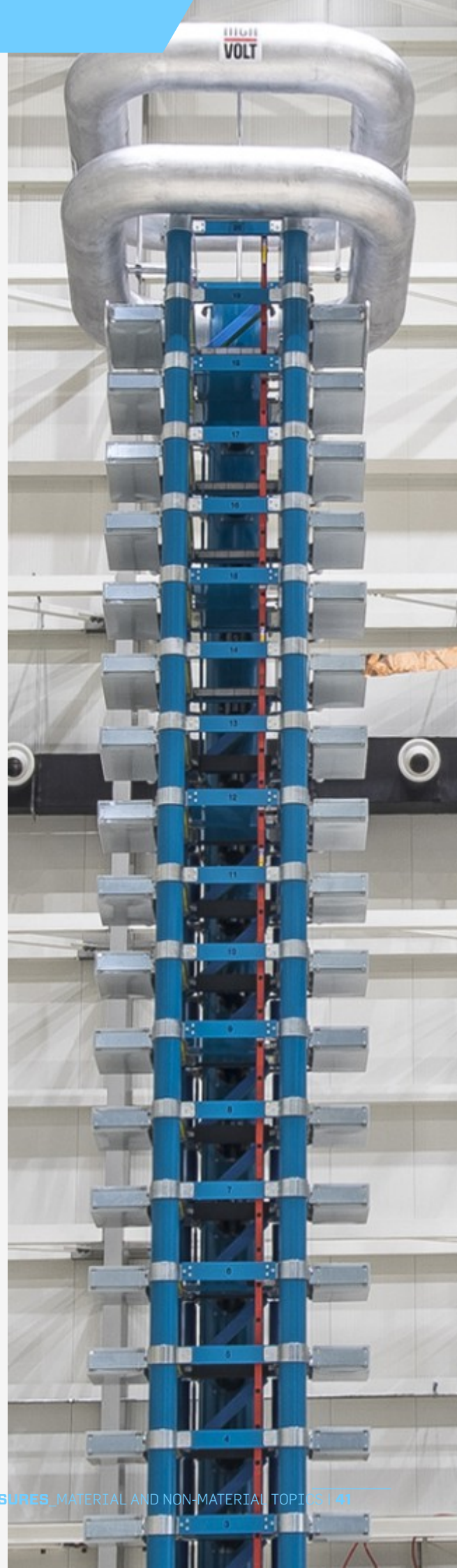
## Increase of laboratory capacities by our own investment

At the beginning of 2023, the new LAVESP laboratory obtained the permit to operate and testing activities were started. This was the Institute's largest and the most important investment since 1971, with a total investment of €8.53 million. The project applied to and was approved by the Ministry of Economy and Sustainable Development for an investment grant (under the Investment Incentive Act). The heart of the building is a HV laboratory, 30 x 35 m in floor size and 28 m in height, completely enclosed in a Faraday cage.

The new laboratory is a leap in the Institute's testing capabilities and market position.

## During 2023, the most significant realized investments (except the LAVESP laboratory) are:

- thermogravimetric analysis device
- high-performance liquid chromatography system with PDA detector
- laser particle counter
- FTIR spectrometer
- expanding the capabilities of EMC testing equipment
- impact generators
- DC test system
- AC test system
- power calibrator
- chamber for accelerated aging (multistress)
- chamber for climate testing
- test sensors
- measuring, test and power transformers for laboratory tests
- partial discharge testing system
- HIL system (simulator for real-time operation)
- PHIL system/converters
- voltage and frequency converter
- electrolysis equipment
- equipment for the transformation of hydrogen into electricity
- platforms, cranes and lifts for laboratories.



## Key impacts, risks, and opportunities

### Market risk

The Institute manages the economic effect of its business policy based on the diversification of market risk. Of the three core businesses, some always bring higher revenues than others due to market conditions and contracts. The Institute is constantly trying to develop new products and services in order to compensate one reduced activity with another.

### Interest rate, credit and liquidity risks

The Institute is funded exclusively by its own resources and is not exposed to interest rate, credit and liquidity risks.

### Currency risk

The company is exposed to currency risks, i.e. changes in foreign exchange rates when purchasing equipment and parts for its own products, but this risk is minimized by doing business with suppliers mainly in EUR, and avoiding currencies as CHF and USD.

### Technological-development risk

Personal development and improvement of employees are very important for the Institute, because business activities and development are based on the application of knowledge, i.e. on good knowledge of problems and ways of solving by applying new techniques and technologies. With additional training, active participation in international conferences and exhibitions employees gain specialist knowledge and make innovations that create a competitive edge and contribute to the success of developing new products and services.

### Personnel risk

The risk of key employees leaving the company and competencies retention were recognized as main priorities of the Institute in 2023. We have been working on preventing unwanted employee turnover and improving the organizational climate and employee satisfaction. Employees are given the opportunity for professional development, foreign language learning, IT training and education for quality systems, environmental protection and work safety. New competencies are gained through postgraduate doctoral and specialist studies, and creativity and leadership development are encouraged through management education programs.

GRI 201-2

## Climate change: financial implications, risks and opportunities

Climate change is the main topic of discussion in almost all international organizations, governments and large and small companies around the world. The Institute is not an exception and has been encouraging and implementing measures to reduce greenhouse gas emissions for many years. Through its policy of governance and social responsibility the Institute undertook to maintain high standards of environmental protection and health and safety in all business processes.

Although the Institute develops its business in the field of services with less significant consequences for the environment, employees of the Institute pay great attention to environmental protection in two ways. One is to launch a range of initiatives to mitigate climate change within the Institute, monitor the consumption of heat and electricity, as well as water in order to rationalize self-consumption while at the same time regulating the working environment and facilities. The second way is through new technical solutions of products with minimal environmental impact and suitability for recycling at the end of their

lifetime. Observing the whole product lifecycle is one of the important elements that gives the future product user-added value, the importance of which is increasing every day.

Most of the Institute's facilities were either reconstructed or they are currently undergoing reconstruction in accordance with the energy efficiency rules of buildings in order to reduce heating and cooling costs. Such access to natural resources significantly contributes to the reduction of costs related to the Institute's infrastructure, which is very large and demanding in terms of space and installations and without which the Institute could not perform very complex research and testing.

### GRI 201-3 Defined benefit plan obligations and other retirement plans

In the preparation of the annual financial statements for the year 2023, provisions for jubilee awards and severance payments amounting to €183,719 were made. The amount includes the estimated amount of regular employee benefits in accordance with the Collective Agreement. The present value of the provision is calculated on the basis of the number of employees, the amount of the pension, the length of service on the balance sheet date and the discount rate of 3.67%. The reserve amount fully covers the anticipated severance grants and rewards of employees who have been eligible for this in 2023.

The companies of the KONČAR Group regularly pay contributions for all workers in the system of generational solidarity at the rate of 20% for the 1<sup>st</sup> pension insurance pillar. For insured persons who are insured in both mandatory pillars, the contribution rate for the 1<sup>st</sup> pillar is 15%, and for the 2<sup>nd</sup> pension pillar the contribution of 5% is paid to personal accounts in mandatory pension funds.

Employees can elect to contribute to the voluntary 3<sup>rd</sup> pillar pension fund. If they elect one of the pension funds, the employer withholds the voluntary pension insurance from their gross salaries up to a maximum tax-free amount of 66.36 euros monthly or a total of €796.34 annually.

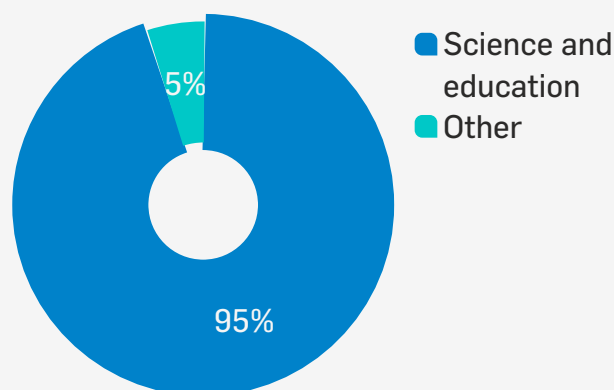
### GRI 201-4 Financial assistance received from government

In 2023, the Institute received the state aid in the amount of €127,412 through the reduction of the profit tax base (education and training grants) and the 100% reduction of profit tax pursuant to the Investment Incentive Act, i.e. the amount of €399,225. The Ministry of the Economy, Entrepreneurship and Crafts paid €98,945 for the co-financed R & D project 5G-Smart Sense.

### Donations and sponsorships

The Institute's long-term strategy is to promote partnerships with engineering faculties and to encourage development and exchange of knowledge in the field of natural sciences and electrical engineering. That is why in 2023 the Institute directed most of the funds (95%) to education and science, and 5% to other causes.

The Institute participates regularly in the curriculum, congresses and exhibitions, awards the best students from engineering faculties, and as a part of the KONČAR Group participates in joint humanitarian programs.



## GRI 203 Indirect economic impacts

Scientific-research organizations are involved in national and international projects to ensure co-financed funding and the ability to adopt state-of-the-art scientific methodologies and procedures, create innovations and evaluate their own results.

The Institute is an accredited scientific organization in the field of technical sciences, whose sole owner (shareholder) leaves the overall profit for its development. The tradition of applied research and development of products and technology at the Institute has been developed for 63 years and has played a major role in the production program of KONČAR Group. Examples are the development of key electronic components, power converters, communication equipment and solutions for low floor trams and electric and diesel trains. Knowledge acquired by participating in R & D projects and product creation has enabled the development of new business activities, further growth and acquisition of new competencies, creation of desirable jobs and innovation. Acquired references as added value keys are the ones that open the door to new business opportunities.

The importance of scientific and technological development for the overall economic development has been recognized through numerous researches that show that social benefit from investment is considerably higher than private benefit, which is one of the most important reasons for state incentives and financing of this activity.

Value-added products – innovations that ensure a sustainable development and a competitive economy – are produced through scientific and experimental research.

## GRI 203-2 Significant indirect economic impacts

9 INDUSTRY, INNOVATION  
AND INFRASTRUCTURE



The results of participation in national and international projects are the original solutions applicable in practice, whose aim is the exchange of knowledge and ultimately an innovative product competitive on the global market.

### New patent for the method and device increasing the reliability of signals displayed on the screen

Successful long-term cooperation between two companies from the KONČAR Group, i.e. Institute and Engineering, resulted in a new intellectual achievement of two authors, Mario Bilić and Davor Mraović. The European Patent Office granted a patent for their invention called: Method and device for



displaying safety unit signals with information regarding reliability of displayed signals. This is a new method and device to display safety unit signals, which increases the reliability of displayed signals. The invention offers a reliable solution for observed technical limitations on currently available functional safety systems. The graphic effect of a floating "light beam" signalizes any phase decoherence, i.e. desynchronization among redundant signal paths, thus ensuring perfect operation of hardware and software, or any processing unit and communication channel for redundant signal processing.

## Project funded by Croatian Science Foundation

The project "Capacitively graded oil-paper insulation behavior under very fast transients," financed by the Croatian Science Foundation, was completed in 2023. The aim of the project was to research and define the experimental setup appropriate for testing all types of transients for this kind of insulation. The knowledge gained on the behavior of the insulation under transients will contribute to the optimization of electrical equipment design and monitoring, thus increasing its safety and reducing the impact on the environment. The project also acquired a new 600 kV surge generator with a reference resistive voltage divider with an aim of reliably generating and measuring the impact of transients on HV insulation. The project started in 2018, and the value of the entire project was €118,973.30.

## Projects co-funded by European Regional Development Fund

The three-year research and development project called **Smart Sense – 5G Autonomous Drone System**, co-financed by the European Regional Development Fund, was completed in 2023.

The goal of the project was to solve the problem of border control and safety, early fire detection and air quality and electromagnetic non-ionizing radiation measuring in order to collect real-time data of an area by using the drone's autonomous flight.

The project was led by Smart Sense from Zagreb, with KONČAR – Electrical Engineering Institute and Montelektro from Sveta Nedelja as partners. The total value of the project was €3.65 mill., with €2.79 mill. co-financed from the ERDF

## GRI 205 Anti-corruption

Anti-corruption policy of the Institute is implemented by doing the entire business in accordance with laws, international regulations and rules of profession in an honest, fair and ethical way, with zero tolerance to bribery and corruption. The policy defines the reporting procedure, and every employee shall report any knowledge or doubt of bribery or any form of corruption inside or outside the Institute to the head of their business units or service. Employees can report their knowledge or observations either orally, by mail or by an anonymous note put in a special box.

GRI 205-3 No case of corruption has ever been noticed in the Institute.

Rational consumption of energy resources and the establishment of emission control systems in environmental constituents reduce the adverse effects to the smallest possible extent.

GRI 302 **Energy**

The Institute purchases electricity and heat from the KONČAR – Infrastructure and Services Ltd., a company within the KONČAR Group, which supplies KONČAR's locations with energy (electricity, gas, heat and compressed air), water (cold, warm, technological) and provides drainage systems.

Business activities of the Institute affect energy consumption. The consumption and its costs are monitored and measured, all major deviations are analysed, and risks assessed.



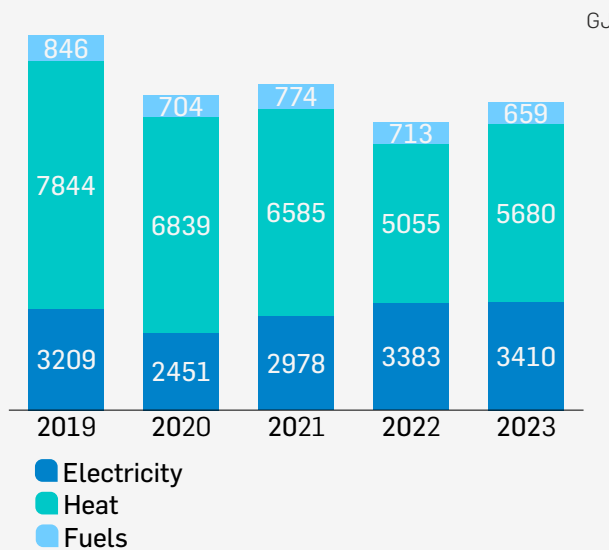
GRI 302-1 **Energy consumption within the organization**

In 2023, the consumption of heat and electricity, as well as fuel for official vehicles increased compared to the previous year. Higher consumption was expected, because the new LAVESP facility was put into operation, the number of employees increased, but also the volume of business activities.

GRI 305 **GHG Emissions**

Direct and indirect emissions include fuel consumption of company-owned vehicles, fuel consumption of privately-owned vehicles and fuel consumption of planes used for business purposes.

Since 2019, the Institute has been using green energy (ZelEn), which guarantees that the electricity needed in the business is produced from renewable energy sources, further contributing to the reduction of CO<sub>2</sub> emissions.





## Indirect energy consumption

	2019	2020	2021	2022	2023
Total indirect energy consumption (from non-renewable energy sources) in GJ – thermal energy for heating	7844	6839	6585	5055	5680
Total indirect energy consumption (from renewable energy sources) in GJ – purchased electricity	3209	2451	2978	3383	3410

Energy consumption in GJ

## GRI 305-1/2 Direct and indirect greenhouse gas emissions

Annual fuel consumption of vehicles and planes is directly dependent on business activities and increased number of travels and diagnostic tests on site (transport of measuring equipment and test engineers).

## CO<sub>2</sub> emissions by weight

	CO <sub>2</sub> emissions per activity in tonnes				
	Fuel CO <sub>2</sub> (t)*	Electricity CO <sub>2</sub> (t)*	Heat CO <sub>2</sub> (t)*	Flights CO <sub>2</sub> (t)*	Emissions total CO <sub>2</sub> (t)*
2019	62.0	205.7	587.0	24.5	879.2
2020	51.5	0**	511.8	13.2	576.5
2021	56.5	0**	492.8	8.7	558.1
2022	52.0	0**	378.3	33.0	463.3
2023	48.0	0**	425.0	35.6	508.7
Scope	Scope 1	Scope 2		Scope 3	

\*From the Manual for Energy Consultants, UNDP.

\*\* A contract was signed with HEP Opskrba on the purchase of electricity from renewable sources (ZelEn – Green energy) on 1.10.2019.

GRI 306 **Waste**

Since introduction of Environmental Management System (EMS) in 2002, waste has been disposed in the Institute in accordance with Croatian laws and regulations. EMS applies to all organizational units (business units and services), all working areas, all places of work and work resources, all workers and other persons who have access to or stay in the Institute's premises for any reason whatsoever.

In Laboratory for Physical and Chemical Testing the work with chemicals is under constant monitoring, and the prescribed environmental measurements and testing are carried out. All the employees in the Laboratory are technically competent for work with poisons, have completed courses in toxicology in accordance with the applicable legislation, so that there is full compliance with legal requirements. Safety data sheets for dangerous substances, instructions and other documentation are maintained and compliant with GHS and REACH directives.

Proper disposal and classification of waste is an ongoing task of all employees, and raising awareness of the importance of the environment and training on the culture of waste disposal in the Institute is carried out with all new employees.

GRI 306-2 **Waste by type and disposal method**

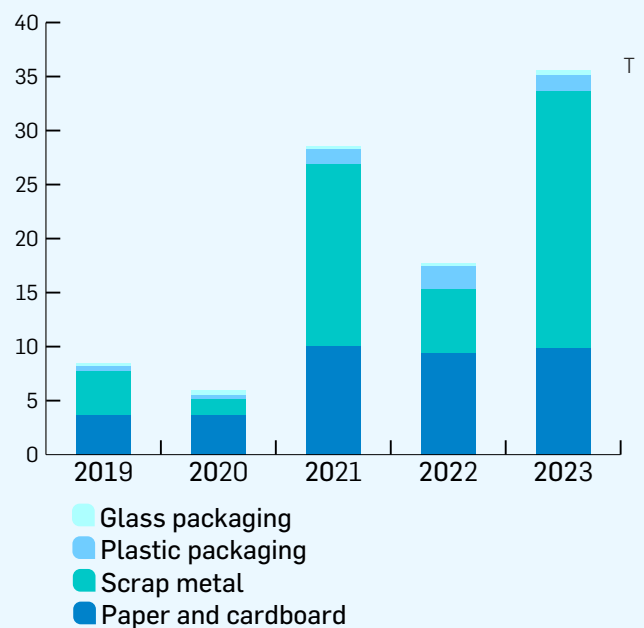
Our work processes generate waste that requires special disposal methods including recognition of hazardous waste, collecting, temporary storage, disposal by the authorized waste disposal contractors, keeping prescribed records and delivery of data about waste.

The effectiveness of the measures taken shall be checked on an annual basis and an internal audit shall be carried out to determine any deficiencies. The amount of municipal, mixed waste is monitored, measured and steps are taken to improve the collection and disposal system.

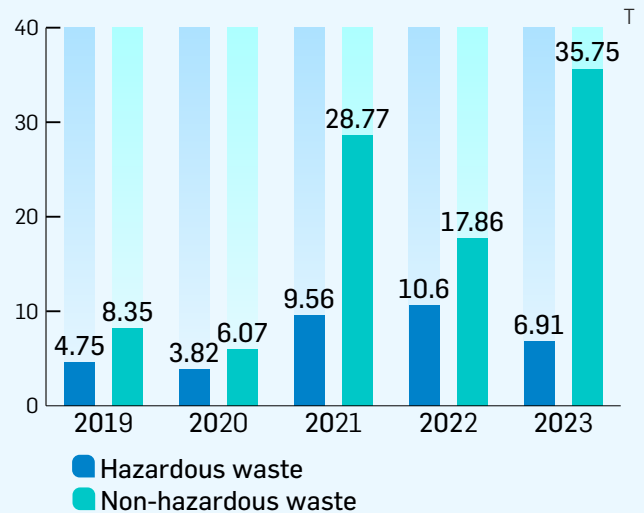
The quantity of waste metal and cardboard is directly influenced by business processes, i.e. by increase of purchases, deliveries and investments in the current year.



**Non-hazardous recyclable waste**



**Hazardous and non-hazardous waste**





Solving complex industrial challenges and participation in international and national projects encourages employment on challenging tasks and creates new desirable jobs.

The Institute mostly employs young and college-educated people, and by working on research and development tasks, together with experts from other KONČAR companies or in partnerships at national and international projects, they gain new knowledge and team work experience. Satisfied and motivated employees are the basis of our long-term business success, and well-educated and competent experts are our greatest asset.

Motivation of employees for scientific and professional development, personal advancement and their focus on the areas of interest of the Institute are a huge force for technical creativity and competition at the global level.

The Institute offers its employees the acquisition of expert knowledge, challenging jobs and fair working conditions. They include fair compensation for their work, additional benefits, and flexible work practices to meet individual employee needs. All employees are provided with continuous personal and professional development through education and training programs.

Challenging tasks, comfortable and air-conditioned workspace, modern equipped laboratories, decorated landscape, intranet and the availability of international databases of worldwide published papers are the main features of the business environment of today's employees of the Institute.

Job recruitment, selection and retention procedures are constantly being promoted and aligned with new challenges. External and internal communication and improvements in two-way inclusion process require additional attention in the coming period.

**We protect people and the community**

Our business activities reflect global needs and ambitions for solving complex technological challenges, protecting people and the community

## Number of employees 2014 to 2023

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
New employees hired	9	11	15	21	10	9	17	15	32	23
Employees who left the Institute	5	12	12	20	6	13	15	14	12	13
Total No. of employees on 31 December	168	167	170	171	173	167	169	170	190	200

## New employee hires and employee turnover

At the end of 2023, the Institute had 200 employees, i.e. 10 associate more than at the end of 2022.

During 2023, 23 new associates were hired and 13 left the Institute, of which 4 retired and 9 ended their employment by agreement. Over the past ten years, 123 employees have left the Institute, and 161 new employees have been hired.

## GRI 401-2 Benefits provided to full-time employees

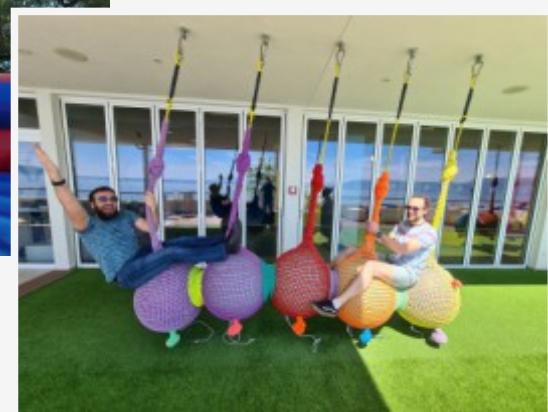
Additional benefits create a positive atmosphere that favors the climate of unity and cohesion in the Institute, despite differences in monthly wages that are related to the success of performance of each business unit or service:

- Educational and professional programs for improvement of knowledge and skills
- Paid business trips and participation in international conferences
- Christmas and Easter bonuses, holiday cash grants
- Jubilee financial rewards for 10, 15... years of service in the Institute
- Money reward for completion of graduate and postgraduate studies
- Financial aid in the case of sick leave exceeding 90 days
- Allowance in the case of death of immediate family member
- Allowance for each new-born baby
- Regular medical check-ups
- Leisure time recreation
- Mobile phone
- Croatian tourist card (CRO card).

There are special bonuses for each successfully completed job. Corporate loyalty is fostered and each employee who wishes to improve the knowledge in the areas that are of interest for the Institute will have paid expenses of such training or education.

## Annual employee meeting

In 2023, the first meeting of employees of the Institute was held, which was well received by all participants. The purpose of the meeting was better acquaintance, networking and socializing, and the results achieved exceeded all expectations. It was a good opportunity to exchange ideas and better mutual understanding in direct communication. In a more relaxed and creative environment, employees in teams and individually could try various skills and win prizes. Nice weather and pleasant temperatures inspired the braver ones to swim in the sea, and the others to go for a walk and lots of joint activities.





## Open Door Day

To the great joy of employees and their families, the Institute's Open Day was once again held, temporarily suspended due to the pandemic. The most numerous were children who visited laboratories, climatic, non-echoic and EMC chambers with their parents, grandparents and tried chemical experiments in the Chemical and Physical Laboratory. Interesting games and snacks with socializing for the end are a good recommendation for a new visit next year.



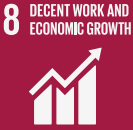
## MultiSport program

The Institute, in collaboration with the company Benefit Systems, has enabled its employees to use the MultiSport program with more than 50 different sports activities in more than 360 sport facilities.

The program encourages employees to live a healthy and active life and adopt daily physical activities. In order to provide its employees with a balance between business and private life, the Institute covers 50% of the monthly fee for the use of the Multisport program.

## GRI 401-3 Parental leave

All female employees have the right to maternity and parental leave, and male employees have the right to fraternal and parental leave in accordance with the decision of the Croatian Institute for Health Insurance (HZZO). During the reporting period, 4 women used the right to maternity leave, 4 men used the right to parental leave, and 6 men used their right to fraternal leave, of which 11 of them returned to work in 2023.



Healthy and secure working environment is recognized as our greatest responsibility and contribution to creating quality jobs.

## GRI 403-1/8

Occupational health and safety risk management is the overall process of identifying, assessing and monitoring the risks, and in accordance with them taking the necessary measures and controls for the purpose of eliminating risks, reducing risks and / or controlling them. Safety at work and occupational health care are essential elements of working conditions governed by applicable Croatian regulations and OHSMS procedures.

OHSMS is a part of the integrated management system defined by the ISO 45001 and represents a mechanism for occupational health and safety. The fundamental goal of the system is to ensure a healthy and safe working environment, i.e. to remove or reduce the risk of work injury and occupational illness for all employees of the Institute and other persons to whom the activities of the Institute may have an adverse effect.

The Institute has a contract with a medical specialist who regularly monitors the health status of workers through periodic and extraordinary medical examinations. Examinations are carried out during working hours, and the health institution in which the examinations are conducted is located directly next to the Institute's location.

Workers are involved in health and safety during risk assessments. All workers can initiate or suggest improvements, more practical solutions, eliminate omissions and irregularities in the implementation of workplace safety regulations or improve the management of occupational health and safety through communication channels: representatives at the Workers' Council and the Commissioner for Occupational Safety, either publicly (verbally or in writing) or anonymously (polls and mailbox).

In order to assess employees' awareness of prevention measures and to identify the risk of exposure to stress at the workplace, every two years the exposure of the Institute's employees to psychosocial risks in the work environment is examined through questionnaires. The examination is anonymous, and the results are published on the Institute's intranet.

### The following trainings have been carried out:

- safe work and starting fire extinguishing of all new employees
- operation of forklifts, crane lifts, self-propelled lift platform and scaffolding
- handling hazardous chemicals
- for authorized persons in the field of occupational safety.

GRI 403-9 **Work-related injuries**

Work injury information

	2019	2020	2021	2022	2023
Average number of employees	169	169	169	178	196
Number of fatal injuries	-	-	-	-	-
Number of group injuries	-	-	-	-	-
Number of severely injured at work	1	1	1	1	-
Number of light injuries at work	1	-	2	1	1
Total number of injuries	2	1	3	2	1
Number of lost working hours	1672	208	208	936	720

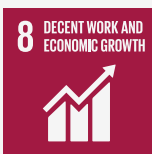
In 2023 1 light occupational injury occurred and was reported in accordance with regulations and OHSMS procedures. The injury occurred when transferring test samples from the car to the laboratory.

The rate of work-related injuries that were recorded in 2023 is 0.49 based on 200,000 hours worked.

GRI 403-10 **Work-related ill health**

None

GRI 404 **Training and education**



We encourage personal development and improvement of employees through professional education, foreign language learning, IT training and education for quality systems, environmental protection and occupational safety.

The focus of employees on scientific and professional training, as well as encouraging excellence and innovation in creating competitive advantages contribute to the success in the development of new products and services. The advantage over others is achieved through faster and more versatile learning, while the acquired knowledge and competences give us an advantage on the market.

Employees are given the opportunity of professional education, foreign language learning, IT training and education for quality systems, environmental protection and safety at work. New knowledge is gained through postgraduate doctoral and specialist studies as well as work on research development tasks in mixed teams of KONČAR Group companies, at seminars and through active participation in international congresses and exhibitions. Creativity and leadership development are encouraged through management education programs.

Internal processes are continually improved in the HRM system (the system of monitoring the staff of the KONČAR Group), and effects and costs are monitored through the procedures in the Annual Education Plan and the Program of Training and Education.

GRI 404-1

## Average annual number of training hours per employee

In 2023 75% of employees attended some form of training or education, and average lesson time was 82 hours per employee.

GRI 404-2

## Programs for upgrading employee skills and transition assistance programs

### Program for new employees and trainees

The program for new employees and trainees enables familiarization with the Institute's legal acts, management systems, health and safety protection, and the basic concepts of corporate social responsibility and the application of sustainability principles at the Institute.

### Acquisition of specialist knowledge and scientific vocation

In 2023, 8 associates attended postgraduate doctoral studies at three technical faculties of the University of Zagreb, and 1 participant studied at the postgraduate specialist study. Leadership and management skills were perfected by 2 associates in MBA Leadership programs. The Institute has 15 scientists enrolled in the Register of Scientists, 4 of them with the status of research associate and 2 senior research associate. Also, in 2023, employees attended foreign language courses.



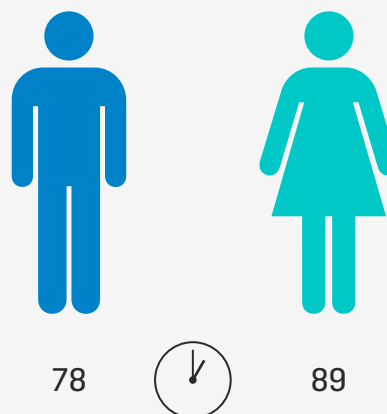
### Doctoral Thesis

Vedran Đurina, PhD successfully defended his doctoral thesis *Assessment of physic-chemical properties of insulating oils by molecular spectroscopy techniques with use of chemometric methods and artificial neural networks* at the Faculty of Chemical Engineering and Technology, University of Zagreb, and was thus awarded the degree of doctor of technical sciences, field materials. The committee evaluated his thesis *summa cum laude* for an excellent doctoral thesis with a significant improvement in methodology, nationally and internationally relevant discovery or theory. The results of the research presented in the thesis indicate the great possibilities of spectroscopic methods of assessment to supplement laboratory measurement methods, as well as better prediction of the basic physicochemical properties of insulating oils from molecular spectra that can be applied for non-destructive analysis of oils.

## Average hours of training and education in 2023

Category	Hours
Managing Board (Top management)	79
Heads of business units and services (Middle management)	171
Heads of laboratories and sections (Lower management)	187
Employees	68

### Per gender





## Center for Digital Technologies – KONČAR Digital Factory Lab

At the initiative of KONČAR - Electrical Industry, the Digital Factory Lab (DFL) was established for the purpose of building and strengthening strategic competences and organizational skills in the application of the Industry 4.0 paradigm with the use of advanced digital tools and technologies with the aim of developing and improving our own production.

In 2023, the Institute, as a DFL coordinator, organized 9 trainings with a total of 135 participants from 11 Group companies:

- Comparison of Ansys Maxwell and CST Studio in the field of numerical simulations
- Analyses of High-Frequency noise of demonstration electronic component to determine the EM compatibility
- Experiences of using Autodesk's collection of software tools for mechanical engineering
- CHT (Conjugate Heat Transfer) model of electric motors in Ansys Fluent
- Experiences of using Autodesk's PDM system Vault Professional
- System Engineering
- Experience in designing the cooling of large rotary machines
- Prosmart - digitized system for collecting data from production
- BIM (Building Information Modelling) for manufacturing companies

## Leadership education

In 2023, the cycle of training for KONČAR management, intended for the development of competences in the field of management, motivation and leadership of people, continued. Leadership education program includes 4 modules - Team development and team management, Change and conflict management, Self and time management, Effective communication and feedback skills and Integration of all topics from previous modules. Through leadership education workshops, so far 22 participants from the Institute have received an assessment of leadership competencies.

## KONČAR Academy

In 2023, the 24th cycle of KONČAR Academy was held, organized by KONČAR – Electrical Industry. The Academy includes training programs for employees according to the needs of companies. Programs in the field of standardized management systems included nine courses and five seminars on management systems and related tools and techniques. Based on the training needs, 7 associates of the Institute have completed 6 KONČAR Academy programs.

GRI 404-3

## Percentage of employees receiving regular performance and career development reviews

In 2023, workshops were held on the importance of feedback to employees and 22 participants from the Institute received an assessment of leadership competencies and received guidelines for improving communication with employees. Special attention was paid to performance evaluation, personal development of employees and effective communication.

## Annual interviews with employees

In 2023, the practice of structured employee interviews with a directly responsible manager was established. Annual interviews are an important segment of regular assessment of employee work with the aim of providing feedback on work performance, job conditions, providing assistance for more successful performance and setting goals for the next period. During 2023, a high percentage of employees received a regular assessment of performance and individual development.

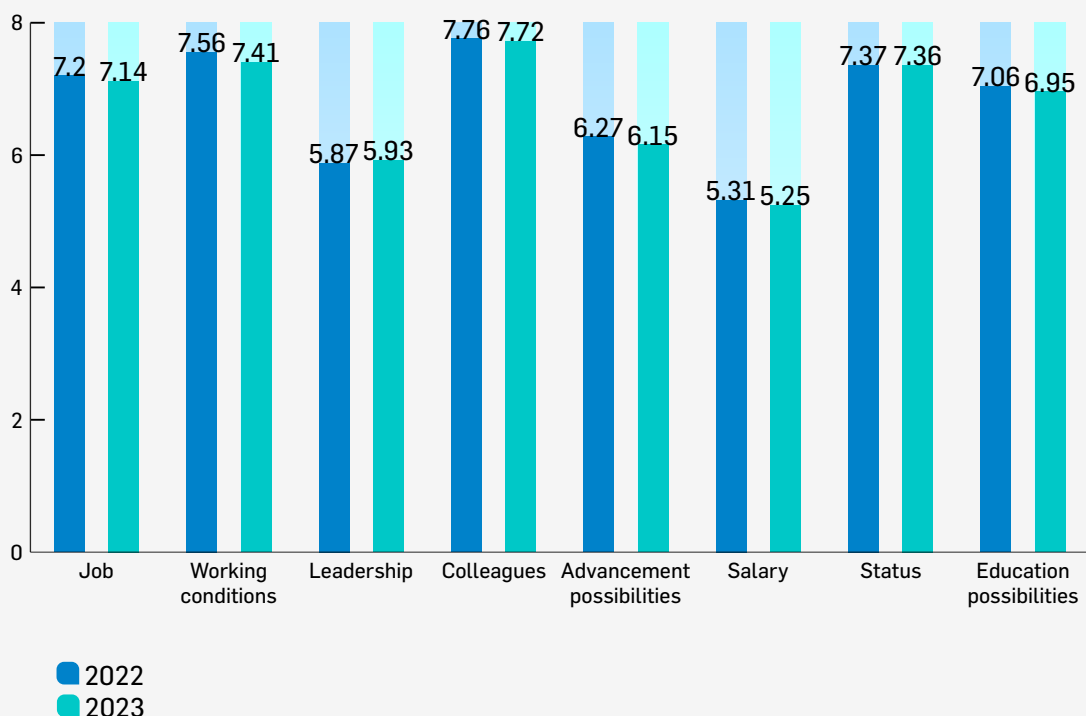
## Employee satisfaction and organization climate survey

Since 2011, once a year, the Institute conducts employee surveys in order to better understand the satisfaction and attitudes of employees towards certain aspects of employment and measure the organizational climate. The survey is conducted through an online platform, and satisfaction is measured by a questionnaire with a total of 24 claims grouped into 8 areas.

Employees expressed the greatest satisfaction with their associates, working conditions and status. They understand how they contribute to their team's goals through their work, have the right work-life balance, and can rely on the support of colleagues when they need it. They were least satisfied with their salary and recognitions, because they felt that their income was lower when compared to those of colleagues in other companies. Also, they are not satisfied with the way goals and strategies are transferred to employees and do not feel inspired by the purpose and mission of Institute.

The achieved results are published on the intranet, and serve as a basis for the development of action plans with the aim of improving in the relevant areas.

## Comparative table of tests for two consecutive years



## Diversity and Equal Opportunities

5

GENDER  
EQUALITY

By accepting and encouraging diversity and equal opportunities, we contribute to both organizational culture and the general goals of non-discrimination and gender equality.

Diversity management assumes systematic and planned focus of the Institute towards attracting and retaining employees of different profiles and competencies to achieve competitive advantage through an inclusive working environment and teamwork.

The diversity and non-discrimination policy of the Institute is directed towards better understanding of the impact of diversity among all stakeholders of the Institute, defining goals, roles and responsibilities and monitoring measurable impact indicators.

The Diversity and Non-Discrimination Policy in the Workplace is available to all the stakeholders on the Institute's website and intranet, while the Diversity and Non-Discrimination Action Plan is available on the Institute's intranet.

Action plan to promote diversity and non-discrimination 2022 – 2025 was developed in accordance with previous results and progress trends.

The Annual report for 2023 provides an assessment of progress made towards achieving measurable action plan targets in 5 key areas:

KEY AREAS	ASSESSMENT OF THE IMPLEMENTED MEASURES IN ACHIEVING THE TARGETS
Diversity management	Measures are continuously implemented and new methods of assessing the effectiveness of the set mechanisms of verification of measurable performance indicators are introduced.
Recruitment, selection and retention	The development of the Employment Manual has been completed, which describes the procedures and responsibilities in hiring new employees from the first day until the complete adjustment in the new business environment. Planned retention measures are implemented and monitored.
Working environment	Intensive work is being done to provide performance management tools and education and development programs. Other measures shall be continuously implemented and their effectiveness evaluated.
Communication and education	The Diversity and Non-Discrimination Policy and the Action Plan are available to all stakeholders. Intensive work is being done on new communication channels in order to promote the principles of the Policy and the application of our values in everyday practice.
Balance of private and business life	Measures are continuously implemented. New activities are being introduced to foster employee cohesion and strengthen ties with their families and community.

GRI 405-1

## Diversity of governance bodies and employees

The Institute's specific business stipulates that it employs men in the highest percentage. The share of women employees varies and is mostly between 23 and 25%, and in 2023 it was 24%. However, the share of women in the management structure of the Institute has been rising constantly, from 35% of women in the Managing Board and middle management (heads of business units and services) in 2014 to staggering 71% in 2023.

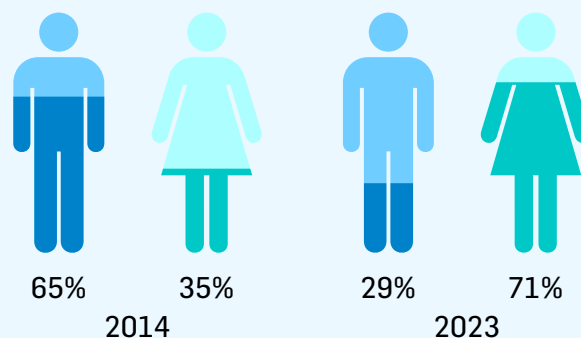
Preservation of expert and specialist knowledge is vital for the Institute, and knowledge transfer and mentoring have been given great attention. As a result of the systematic rejuvenation and the natural generation shift, the age structure of employees changed significantly. From the average 40 years of age of employees in 2014 it has decreased to 39 years in 2023. The average age of management has been decreasing steadily. The average age of the Management Board and middle management (heads of business units and services) decreased from 51 in 2014 to 44 in 2023.

GRI 406

## Non-discrimination

The Institute further strengthened the application of the principles of diversity and non-discrimination as fundamental values of modern society by signing the Charter on Diversity in 2017. With this voluntary initiative, it undertook to create a diversity and non-discrimination policy, an action plan with measurable indicators, and to report on its progress once a year.

## Comparison of percentages of female employees in the managing board and middle management in 2013 and 2022



## Percentage of female employees

Category	2014	2023
The Managing Board and middle management (heads of business units and services)	36 %	71 %
Lower management (heads of laboratories and sections)	10 %	7 %
Employees	24 %	24 %

## Average age

Category	2014	2023
The Managing Board and middle management (heads of business units and services)	51	44
Lower management (heads of laboratories and sections)	48	43
Employees	40	39

## Ratio of basic salary and remuneration

GRI 405-2

Category	M/F
Heads of business units and services (Middle management)	1,77
Heads of laboratories and sections (Lower management)	0,93
Employees	1,12



## Diversity Charter

By signing the Diversity Charter, the Institute has made public its commitment to effective diversity management, preventing discrimination and promoting equality and non-discrimination on working place. Promotion of these principles as a form of social responsibility and awareness of the need to prevent discrimination and promote diversity and equality is integrated in the business strategy of the Institute.

The Diversity Charter is a voluntary initiative launched in 16 EU countries and joined by the Institute to promote the principles of diversity and non-discrimination in the workplace. The Diversity Charter Croatia was developed as part of a joint project of the Croatian Business Council for Sustainable Development (HR PSOR) with partners from Slovenia and Romania.



**GRI 406-1** No incident of discrimination has ever noticed in the Institute.

## **GRI 407** Freedom of association and the right to collective bargaining

All employees have the freedom of association and the right to collective bargaining. Through the Workers' Council, employees have the opportunity to participate in decision-making on issues related to their economic and social rights and interests.

## **GRI 408** Child Labor

### UN Global Compact principles

As a member of the KONČAR Group, the Institute participates in the United Nations Global Compact initiative for corporate social responsibility.

As one of the signers of the UN Global Compact, KONČAR has been actively supporting and promoting the UN GC 10 principles since 2007. This Sustainability Report also communicates the Institute's progress for UN GC and its activities related to the advancement of human rights, employment, corporate governance, environmental protection and fair business practices.



By exchanging knowledge and partnership, both scientific community and the Institute acquire new competencies, creating new opportunities for development and value added in the wider community.

The collaboration of the Institute and the scientific community has been fostered for many years through various activities and is constantly improving. Encouraging science and economy cooperation directs the scientific community to address scientific research topics that could bring benefits to the economy. It also demonstrates how the scientific community can contribute to the development of society not only through education but also through applied research for the sake of innovation.

Joint activities of the Institute and the scientific community:

- Partnership on joint scientific research projects
- Participation in the curriculum
- Mentoring, membership in professional commissions, boards, jury
- Education (graduate, postgraduate and specialist)
- Awarding the best students to three technical faculties
- Professional student and student practice, professional visits
- Exchange of knowledge from which scientific papers, conferences, expert meetings emerge.

The Institute invests in activities contributing to the sustainable development of the scientific community:

- Applied scientific research
- Innovations
- Inclusion of the scientific community in the development of the economy.

Connecting the economy with the scientific community is also strongly encouraged by the EU with a view of to transferring new technologies and knowledge from faculties to industry, aiming at improving the existing and developing new high technology products and services.

The Institute gains new knowledge by linking with the scientific community, encourages the publication of professional and scientific papers, exchanges the existing knowledge of scientists and new knowledge gained through research on concrete technical problems.

	2019	2020	2021	2022	2023
Co-financed projects with scientific community	3	4	4	2	2
Published papers	41	17	24	14	60
Attendants of postgraduate doctoral studies	6	6	6	8	8
Defended PhD theses	3	0	0	1	1
Members of the Institute teaching at faculties	10	10	10	11	10

The impact of collaboration between the scientific community and the Institute can be seen in several aspects: material benefits in the final results of successfully implemented projects with industrial application, exchange of knowledge and education, and expert and scientific papers.

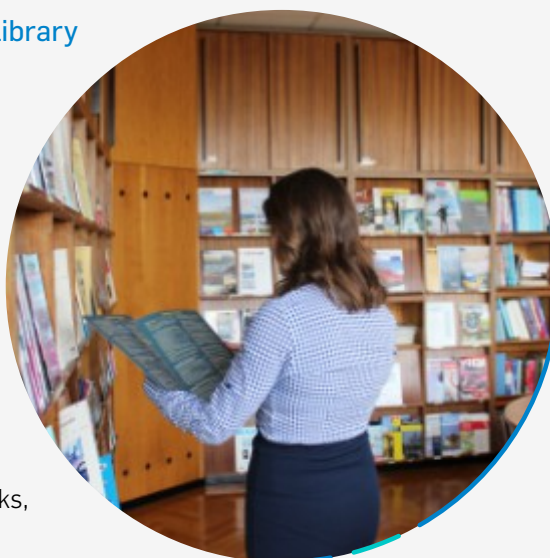
By joint work on research and development projects, the Institute and the scientific community jointly take the risk regarding project results, commit themselves to deadlines for implementation of the results, and take mutual responsibility for the development of the economy and society.

## GRI 413-1 Operations with local community engagement, impact assessments and development programs

### Information-documentation service (INDOK) and library

INDOK and the library share resources with the local and international community and provide access to information. They have a key role in ensuring access to information, supporting research and development, as well as in safeguarding and protecting professional knowledge.

INDOK has more than 20,000 printed professional books and more than 800 scientific and professional journals in the fields of electrical engineering, electronics, energy, transport and natural sciences. Users can access databases of scientific and professional e-books, e-proceedings, e-papers, PhD, MSc and BSc theses.



### Supporting technical sciences is the Institute's long-term strategy

The Institute strengthens partnerships with the scientific community, develops and provides professional and financial assistance in organizing scientific conferences or symposia that enable the exchange of experiences and contribute to the development of science, and every year rewards the best students at technical faculties. Institute has also been a supporting member of the Croatian Academy of Engineering (HATZ) since 2003.

### Rewards for the best students

With its long-term strategy, the Institute has opted for the promotion of technical sciences and for a number of decades has been rewarding the best students, at certain technical faculties of the University of Zagreb. In 2023 the Institute rewarded the "Vjera Marjanović-Krajovan" award to the best student of the Faculty of Chemical Engineering and Technology at a ceremonial session of the Faculty Council.



## DIRA 2023 – 14th Graduate Workshop at the Faculty of Electrical Engineering and Computing

The 14th graduate workshop (DIRA) of the Department of Electronic Systems and Information Processing (ZESOI) at the Faculty of Electrical Engineering and Computing was held. For many years, the Institute has been actively participating in the economic council and rewards one of the best ranked graduate theses presented at the workshop. DIRA is an annual gathering that brings together graduates, teachers and the Economic Council ZESOI consisting of representatives of prominent businessmen.



## Job Fair 2023 organized by the Faculty of Electrical Engineering and Computing

At the meeting of employers and students of Technology Faculties Job Fair, KONČAR companies traditionally participate in connecting technological experts and students through professional lectures and workshops and presenting the way of using technological knowledge. Along with other societies of the Group, the Institute joined with a lecture by Josip Babić, PhD called The Brain of the Train, where he presented a platform approach to the development of embedded computer systems and the application of hardware and software platforms on concrete examples.



## First Career Day of the Zagreb University of Applied Sciences - TVZ

In 2023, for the first time, the Career Day of the TVZ was held with the aim of connecting students and employers so that students can directly get a detailed insight into the necessary knowledge and skills on the market and help in finding a future job. The event partner KONČAR presented



the possibilities of practice and further training of the Group's companies and current technological trends and employment opportunities at the exhibition area.

### Practical training

In 2023 9 students successfully completed practical training. Under the guidance of expert mentors, they had the opportunity to acquire practical knowledge and skills. Mandatory training gives them the opportunity to take part in solving concrete every-day problems, and their teachers get feedback on knowledge and skills which the contemporary market expects from future engineers, what in turn enables better adaptation of the curriculum to current needs of industry and technology trends.

### Visits of pupils and students

In 2023. The Institute hosted numerous groups of pupils and students from Croatia and the surrounding countries. Among others, pupils of the Zagreb School of Electrical Engineering, students of the Faculty of Economics and Tourism Dr. Mijo Mirković from Pula, Faculty of Electrical Engineering and Computing of the University of Zagreb, Zagreb University of Applied Sciences, Faculty of Electrical Engineering from Tuzla, Technical University of Vienna and many others. In the laboratories of the Institute, they could get acquainted with tests and modern testing laboratories. Practical knowledge and familiarization with concrete solutions are the most important segments of successful education, especially in the field of technology.



### Visit of specialist students from Vienna

The participants of the international specialist study *Renewable Energy Systems* within the Technical University of Vienna (TU Wien) visited the Institute's laboratories as part of their study visit to KONČAR. The Polytechnic of Applied Sciences (TU Wien) is Austria's largest research and educational institution in the field of technology and natural sciences, where the Academy of Lifelong Learning operates, a central place at the University for postgraduate training.



### Visit of entrepreneurs from Thuringia

As part of their visit to the KONČAR Group, entrepreneurs from the German province of Thuringia visited the Institute's laboratories and got acquainted with the testing possibilities of the Laboratory Center.



### Participants of the meeting of the Study Committee C2 (Drive and Management of EES) – HRO CIGRE

As part of the 59th working meeting of the Study Committee C2 (Drive and Management of EES) of the Croatian Branch of the International Council for Large Electric Systems (HRO CIGRE), the participants had the opportunity to visit the newly equipped LAVESP of the Laboratory Center.

### Končar's first corporate quiz

Associates of the Institute with the Šanksonijeri team are the winners of the first KONČAR quiz held in 2023. More than 300 employees from 11 companies participated, and the questions were mostly related to general knowledge, but also knowledge of Končar's business. More than 70 teams applied, and the winning team from the Institute was composed of: Siniša Majer, Neda Gregov, Davor Himmelreich, Filip Hleb and Ana Krnjak.



### Social recognitions and awards

#### HRIO Award – Croatian Sustainability Index

The Institute is the winner of the HRIO – Croatian Sustainability Index award in the category of medium-sized enterprises, for the best result in the application of the principles of sustainability and socially responsible practice. The HRIO Sustainability Index was made according to the methodology that evaluates the application of business practices, higher than the legally prescribed obligations of the company, and at the same time integrates the principles of sustainable development into the environmental and social impact management system.



The Institute is a multiple winner of the HRIO Award in the category of medium-sized enterprises, also in the category responsible community relations and the category of human rights. Also is a winner of the European CSR Award 2013.

GRI standards are a globally accepted tool for sustainability and sustainable development reporting, and they are periodically revised to enable companies to communicate most appropriately the impacts of their economic, environmental, social and governance performance.

Set of modular GRI standard were created with a view to improving global comparability and quality of information, what ensures higher transparency and responsibility of the company.

## GRI content index

Statement of use	KONČAR – Electrical Engineering Institute Ltd has reported in accordance with the GRI Standards for the period 1.1.2023 – 31.12.2023
GRI 1 used	GRI 1 Foundation 2021
Applicable GRI Sector Standard(s)	-

No.	Disclosure	Location	Omission	SDG	UN GC Principle
<b>GRI 2 General Disclosures 2021</b>					
THE ORGANIZATION AND ITS REPORTING PRACTICES					
2-1	Organizational details	6-9			
2-2	Entities included in the organization's sustainability reporting	-	Not applicable		
2-3	Reporting period, frequency and contact point	10			
2-4	Restatements of information	10			
2-5	External assurance	-	Not implemented		
ACTIVITIES AND WORKERS					
2-6	Activities, value chain and other business relationships	11-24		8, 9, 11, 7	1, 9
2-7	Employees	25			
2-8	Workers who are not employees	25			
GOVERNANCE					
2-9	Governance structure and composition	26			
2-10	Nomination and selection of the highest governance body	26			
2-11	Chair of the highest governance body	26			
2-12	Role of the highest governance body in overseeing the management of impacts	26			
2-13	Delegation of responsibility for managing impacts	26			
2-14	Role of the highest governance body in sustainability reporting	7			
2-15	Conflicts of interest	-	Regulations on preventing conflicts of interest are defined in the Constitution of the Managing Board		
2-16	Communication of critical concerns	26			
2-17	Collective knowledge of the highest governance body	54			
2-18	Evaluation of the performance of the highest governance body		Defined by the Constitution of the Managing Board		
2-19	Remuneration policies	-	Data is confidential		
2-20	Process to determine remuneration	-	Data is confidential		
2-21	Annual total compensation ratio	-	Data is confidential		
STRATEGY, POLICIES AND PRACTICES					
2-22	Statement on sustainable development strategy	1,2,28		4, 9	
2-23	Policy commitments	28		7	7, 10
2-24	Embedding policy commitments	29			
2-25	Processes to remediate negative impacts	30			
2-26	Mechanisms for seeking advice and raising concerns	30			
2-27	Compliance with laws and regulations	30			
2-28	Membership associations	30			
STAKEHOLDER ENGAGEMENT					
2-29	Approach to stakeholder engagement	31			
2-30	Collective bargaining agreements	32		5	3
<b>GRI 3: Material Topics 2021</b>					
3-1	Process to determine material topics	36			
3-2	List of material topics	37			
3-3	Management of material topics	37,44,46-48,50,52,53,57,60			

No.	Disclosure	Location	Omission	SDG	UN GC Principle
GRI 201 Economic performance 2016					
201-1	Direct economic value generated and distributed	38		8	
201-2	Financial implications and other risks and opportunities due to climate change	42		9	9
201-3	Defined benefit plan obligations and other retirement plans	43		8	1
201-4	Financial assistance received from government	43			
GRI 203 Indirect economic impacts 2016					
203-1	Infrastructure investments and services supported	44			
203-2	Significant indirect economic impacts	44		9	9
GRI 302 Energy 2016					
302-1	Energy consumption within the organization	46		7, 12	7, 8
GRI 305 Emission 2016					
305-1	Direct (Scope 1) GHG emissions	47			
305-2	Energy indirect (Scope 2) GHG emissions	47		12	8
GRI 306 Waste 2020					
306-1	Waste generation and significant waste-related impacts	48		12	8
306-2	Management of significant waste-related impacts	48			
GRI 401 Employment 2016					
401-1	New employee hires and employee turnover	49		8	
401-2	Benefits provided to full-time employees that are not provided to temporary or parttime employees	50		5	1, 6
401-3	Parental leave	51			1
GRI 403 Occupational health and safety 2018					
403-1	Occupational health and safety management system	52			
403-2	Hazard identification, risk assessment, and incident investigation	52		12	
403-3	Occupational health services	52			
403-4	Worker participation, consultation, and communication on occupational health and safety	52			
403-5	Worker training on occupational health and safety	52			
403-6	Promotion of worker health	52			
403-7	Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	52			
403-8	Workers covered by an occupational health and safety management system	52			
403-9	Work-related injuries	53			
403-10	Work-related ill health	53			
GRI 404 Training and education 2016					
404-1	Average hours of training per year per employee	54			
404-2	Programs for upgrading employee skills and transition assistance programs	54		4, 8	1, 9
404-3	Percentage of employees receiving regular performance and career development reviews	55			
GRI 405 Diversity and equal opportunity 2016					
405-1	Diversity of governance bodies and employees	58		5, 8	6
405-2	Ratio of basic salary and remuneration of women to men	58			
GRI 413 Local Communities 2016					
413-1	Operations with local community engagement, impact assessments, and development programs	61		4, 11	9
<b>Non-material Topics</b>					
GRI 205 Anti-corruption 2016					
205-2	Communication and training about anti-corruption policies and procedures	45			10, 2
205-3	Confirmed incidents of corruption and actions taken	45			
GRI 206 Anti-competitive Behavior 2016					
206-1	Legal actions for anti-competitive behavior, anti-trust, and monopoly practices	61			
GRI 406 Non-discrimination 2016					
406-1	Incidents of discrimination and corrective actions taken	59			6
GRI 407 Freedom of Association and Collective Bargaining 2016					
407-1	Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk	59			3
GRI 408 Child Labor 2016					
408-1	Operations and suppliers at significant risk for incidents of child labor	59			4, 5

# KONČAR Group

## PARENT COMPANY

- KONČAR – ELECTRICAL INDUSTRY

## BUSINESS SEGMENTS

- POWER GENERATION
- POWER TRANSMISSION AND DISTRIBUTION
- RAIL SOLUTIONS AND INFRASTRUCTURE
- DIGITAL SOLUTIONS AND PLATFORMS

## COMPANIES

- SWITCHGEAR
- DALEKOVOD\*
- DIGITAL
- DISTRIBUTION AND SPECIAL TRANSFORMERS
- ELECTRIC VEHICLES
- ELECTRONICS AND INFORMATICS
- GENERATORS AND MOTORS
- ELECTRICAL ENGINEERING INSTITUTE
- ENGINEERING CO.
- MOTORS AND ELECTRICAL SYSTEMS
- METAL STRUCTURES
- INSTRUMENT TRANSFORMERS
- RENEWABLE SOURCES

\*from 1 April 2022

## AFFILIATED COMPANY

- POWER TRANSFORMERS

## JOINT SERVICE CENTER

- INFRASTRUCTURE AND SERVICES

**KONČAR**  
ELECTRICAL ENGINEERING  
INSTITUTE

📍 Fallerovo šetalište 22  
10000 Zagreb, Croatia

☎ +385 1 3667 315

✉ info@koncar-institut.hr

🌐 www.koncar-institut.hr