



LEADERSHIP WITH PASSION

2022 Sustainability Report of LU-VE Group

Consolidated non-financial statement pursuant to Italian Legislative Decree no. 254/2016



To Iginio Liberali THE GARDENER OF DREAMS

Iginio Liberali, chairman and founder of the LU-VE Group died in December 2022.
The “Gardener of dreams”, as he liked to be known, has dreamt up many things and managed to achieve most of them.

He has left us with the values he always followed in his personal and professional life:
the humility to continue learning to keep growing
the passion for life and for his work
way of thinking, always positive and always looking to the future.



“Our best days have yet to be lived”
Nazim Hikmet

LEADERSHIP WITH PASSION

It is with considerable amount of emotion that for the first time we find ourselves drafting this letter with which we are sharing the **LU-VE Group's strategy for sustainable development**.

Up to last year, the task belonged to our founder and chairman Iginio Liberali who unfortunately left us at the end of 2022. He would do so with great humility, intelligence and the capacity to look to the future that were such a part of him: his most precious bequest.

Iginio Liberali was a man of exceptional professional and human qualities. He built the foundations for the success and growth of the LU-VE Group, which since 1986 has multiplied its turnover sixty times over and increased the Group's collaborators from under 200 to the over 4,000 that are currently working for us.

This document is dedicated to Iginio Liberali.

In 2022, the LU-VE Group achieved a series of exceptional results.

We posted the **highest turnover ever**, exceeding € 618 million (+25.7% compared to 2021).

Last September, we were admitted onto the Euronext STAR segment of the Milan Stock Exchange, culminating a process that began with the listing on the AIM market (2015) and continued with the transition to the main MTA market (2017).

During what are hard times, featuring high inflation and the rise in the cost of living, we have stood beside **our collaborators, by putting up € 3 million**. We have wanted to give them and their families true support, a sign acknowledging the women and men without whom it would not have been possible to become what we are today.

The year 2022 was also a year that introduced a range of changes in terms of governance and sustainability strategy.

To address the new challenges, we have set up the **Sustainability Steering Committee**, that will see the regular participation of the CEO, COO, CFO, Investor Relations and Sustainability Officer. This is where the strategic lines will be plotted and the progress of our performance will be evaluated, with the involvement of other directors and Group managers with expertise on the specific issues covered by sustainability.

For the first time the LU-VE group has prepared the **2023-2025 Sustainability Plan**, which was approved by the Board of Directors in February 2023. In line with our strategic priorities to contribute to sustainable development, we have outlined a three-year plan of action based on four macro-objectives: **climate neutrality, positive impact products, high engagement of collaborators and the integration of sustainability in our industrial plan**.

Climate changes are generating and will continue to generate, at a global level, increasingly negative effects on the economy, the environment and the lives of every one of us (increased poverty, migrations, water and food scarcity, reduction of biodiversity). What's more, the current context sees two trends coming to the fore: the increasing demand for air conditioning and refrigeration and the concomitant need to reduce energy consumption and climate-altering emissions.

The LU -VE Group has responded **by promoting advanced technological solutions with reduced environmental impact**. We can contribute to reducing (direct and indirect) greenhouse gases, by finding ways to mitigate our environmental impacts and build increasingly effective products that are compatible with the environment in terms of energy consumption, optimised performance and the use of natural refrigeration fluids.

Ever since its foundation the LU-VE Group has paid attention to ESG issues that have now taken centre stage. For some time now we have been preparing ourselves to respond to the new challenges posed by sustainability in general, by climate change, by our desire to be close to our stakeholders and shareholders and the need to equip ourselves with new systems of governance, while also involving our customers and suppliers in this process. We know that it is essential to find new ways to promote sustainability at a global level: **this is our challenge as market leaders**.

We are proud of our path towards an **"evolved, improved, balanced and self-aware world"**.

We are **thankful to all the women and men of the LU-VE Group** who have contributed to our growth and development. We are convinced that **"our best days are still ahead of us"**

Matteo Liberali Chairman and CEO

Michele Faggioli COO

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OUR VISION

We have enclosed our vision in the four pillars and have indicated the material topics we pursue so that this vi-

sion can take shape in the real world.

Our vision is aligned with some of the Sustainable Development Goals (SDGs) as defined at global level by the

IDEAS AND PASSION FOR A COOLER WORLD

- Strategies for growth and long-term value creation
- Research, development and innovation
- Products with reduced environmental impact
- Customer orientation

**Innovative
products**

**Sustainable
development**

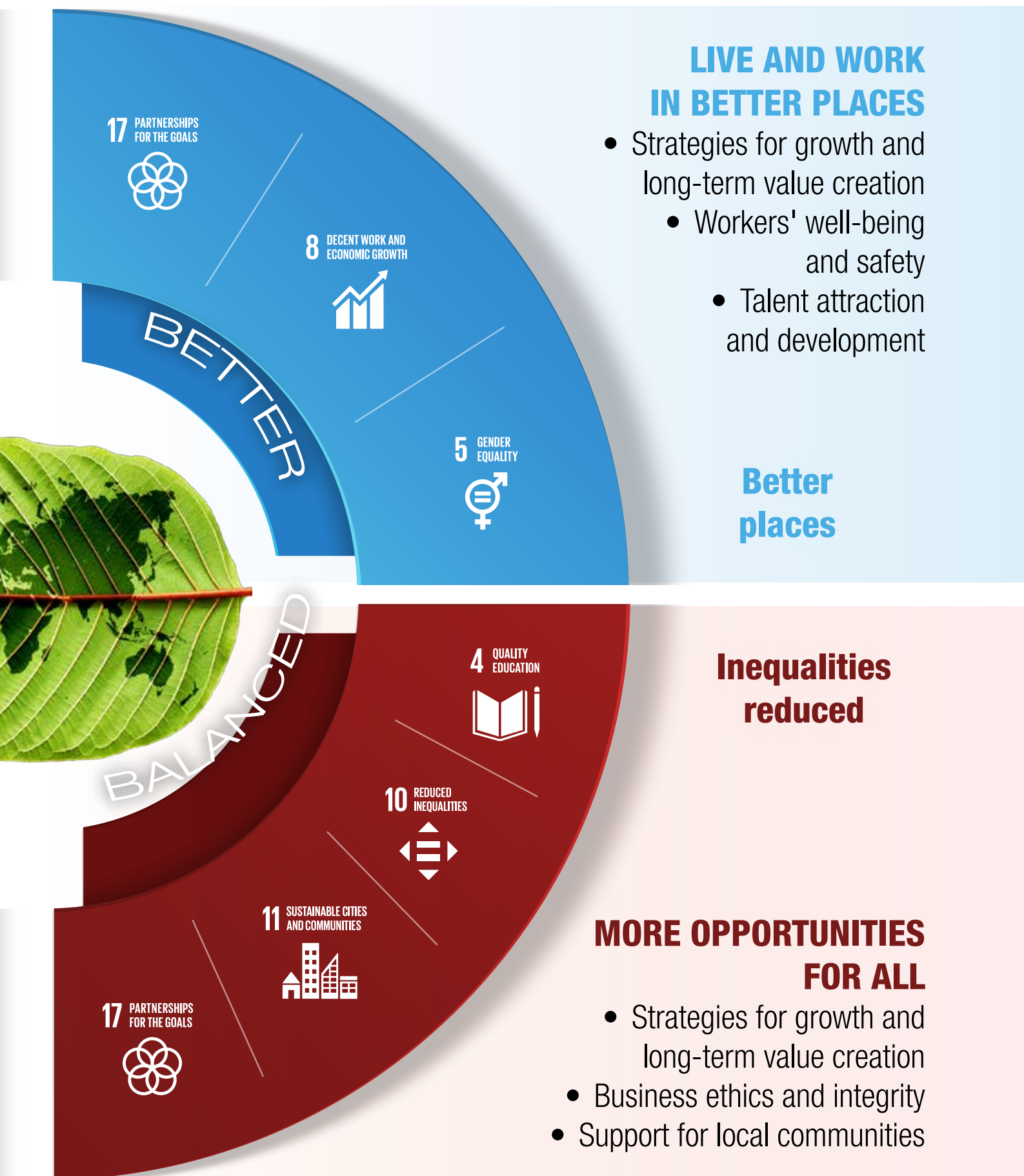
STEWARDSHIP FOR A BETTER FUTURE

- Strategies for growth and long-term value creation
- Climate change
- Resource and waste management
- Responsible supply chain
- Food safety and waste



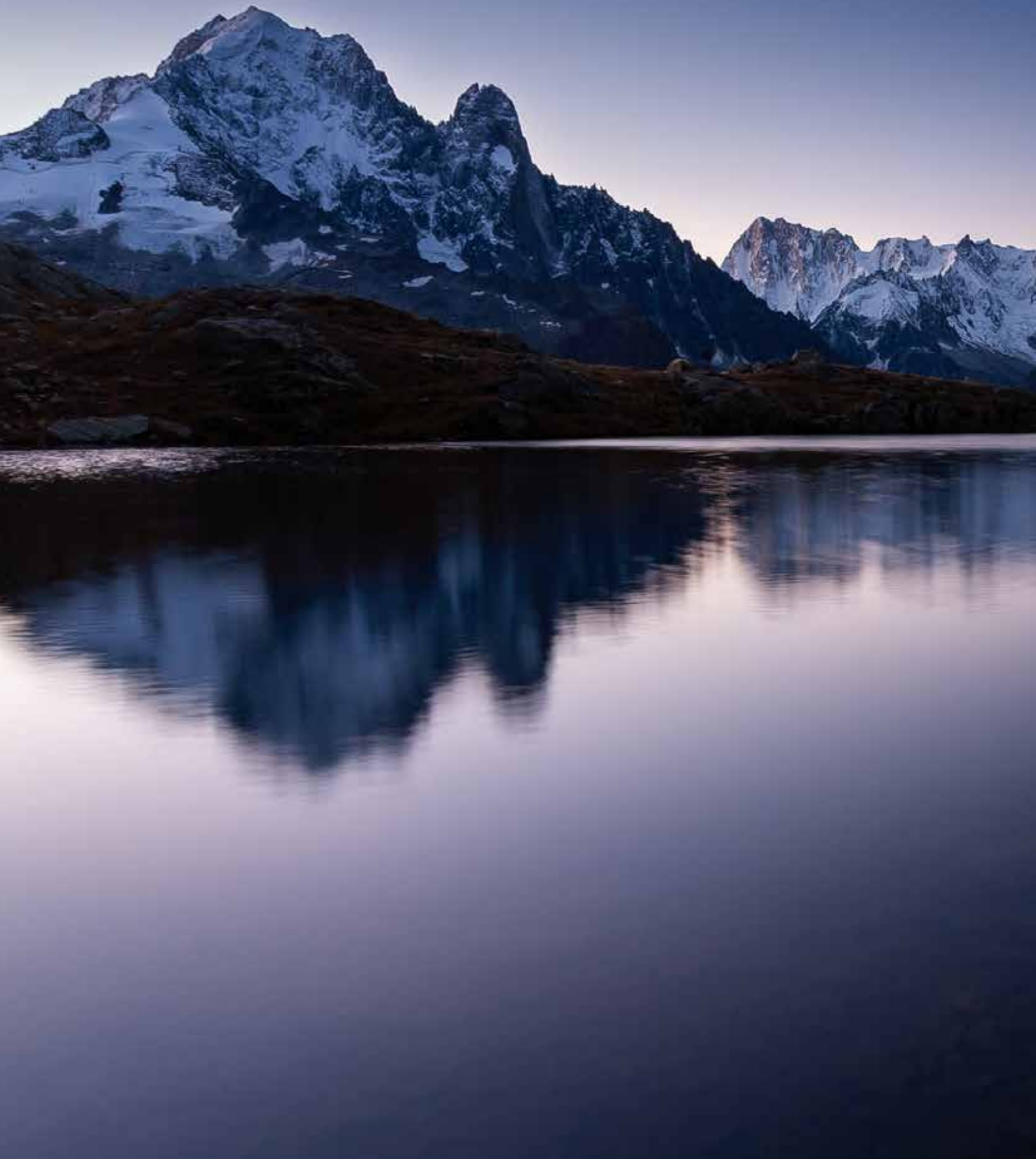
¹ The 2030 Agenda is the action programme underwritten in 2015 by the governments of the 193 member countries of the United Nations (UN) that supports organisations in implementing actions aimed at sustainable development. It defines 17 Sustainable Development Goals - SDGs - divided into 169 sub-goals or targets to be achieved by 2030.

United Nations and understood as a priority for development by the end of 2030.¹



“The future has an ancient heart”

Carlo Levi - (writer, painter and doctor)





ABOUT LU-VE GROUP

ABOUT LU-VE GROUP



20 facilities

in 9 countries



8 brands

of the Group



4 social impacts

generated by Group solutions



”

Companies are first and foremost women, men and ideas

People with extensive experience, young people endowed with creativity and enthusiasm, specialists of the highest academic level, united by a passion for their work and a vision of an advanced, better, balanced and conscious world.”

Iginio Liberali, LU-VE Group Founder

1.1 A great Group



VENTILATED PRODUCTS



GLASS DOORS



COILS



SOFTWARE



DIGITAL SIGNAGE



HEADQUARTER

 UBOLDO (VA) - ITALY

20 PRODUCTION FACILITIES

ITALY

ALONTE (VICENZA)

FLUMIGNANO DI TALMASSONS (UDINE) ³

MEL (BELLUNO)

LIMANA (BELLUNO)

TRAVACÒ SICCOMARIO (PAVIA)

UBOLDO (VARESE) ²

VILLA SANTINA (UDINE)

CHINA

TIANMEN (HUBEI)

FINLAND

VANTAA (UUSIMAA)

INDIA

BHIWADI (RAJASTHAN)

SAROLE (PUNE DIST., MAHARASTRA)

POLAND

GLIWICE (SLESIA) ³

CZECH REPUBLIC

NOVOSEDLY (MORAVIA MERIDIONALE)

RUSSIA

LIPETSK

SWEDEN

ASARUM (KARLSHAMN)

USA

JACKSONVILLE (TEXAS) ³



34 SALES OFFICES

- 🌿 AUSTRIA - VIENNA
- 🌿 BELGIUM - UCCLE ⁴
- 🌿 CHINA - TIANMEN, CHANGSHU
- 🌿 SOUTH KOREA - SEUL
- 🌿 DENMARK - AARHUS ⁴
- 🌿 UNITED ARAB EMIRATES - DUBAI
- 🌿 FINLAND - VANTAA
- 🌿 FRANCE - LIONE
- 🌿 GERMANY - STOCCARDA, BAD SEGEBERG
- 🌿 INDIA - NEW DELHI, BHIWADI, SAROLE
- 🌿 ITALY - ALONTE, FLUMIGNANO DI TALMASSONS, LIMANA, TRAVACÒ
SICCOMARIO, UBOLDO, VILLA SANTINA
- 🌿 NORWAY - DRAMMEN ⁴
- 🌿 NETHERLANDS - BREDA
- 🌿 POLAND - VARSAVIA, GLIWICE
- 🌿 UNITED KINGDOM - LONDON, FAREHAM
- 🌿 CZECH REPUBLIC - NOVOSEDLY
- 🌿 RUSSIA - MOSCA, LIPETSK
- 🌿 SPAIN - MADRID
- 🌿 SWEDEN - ASARUM
- 🌿 THAILAND - BANGKOK ⁴
- 🌿 USA - JACKSONVILLE (TX)
- 🌿 VIETNAM - HCM CITY ⁴

² Con riferimento alle società LU-VE Exchangers e LU-VE Digital. LU-VE Digital è una software house destinata al settore dell'Information and Communication Technologies, allo sviluppo dei software di calcolo dei prodotti e alla digitalizzazione

³ Two plants

⁴ Representative offices

1.2 A growing concern

THE LU-VE GROUP ON THE STAR SEGMENT OF BORSA ITALIANA

On 21 September 2022, the LU-VE Group was officially admitted to listing on the Euronext STAR Milan segment of the Milan Stock Exchange.

This is the next step along a path that began with the Group's listing on the AIM market (July 2015), followed by its inclusion on the MTA (June 2017).

The STAR listing is another milestone in the growth process that has seen the Group increase its employees from a little over 1,500, of which 600 in Italy, with turnover of around €212 million (in December 2014) to the current 4,058, of which 1,200 in Italy, and turnover of over €600 million.



During 2022, the LU-VE Group undertook a number of strategic transactions to strengthen its production capacity, increase its backup production lines to ensure its

clients a higher level of flexibility and service, as well as to expand to promising market niches where previously it was not present.

GROWTH

"With this transaction, the Company aims to expand its production base, making the activity at the Mel plant compliant and consistent with the Group's core business, by installing heat exchanger production lines. I wish to thank all the parties that have contributed to achieving this objective, starting with the special administrator Maurizio Castro. We are also proud of having been able to contribute to saving jobs in the area, which otherwise would have been lost. I welcome our new colleagues who as of tomorrow will become part of the LU-VE family"

Michele Faggioli, LU-VE Group COO



ACQUISITION OF AN EQUITY INVESTMENT IN REFRION SRL

The Group has acquired Refrion S.r.l. and its subsidiaries, with registered office in Flumignano di Talmasson (Udine, Italy). Refrion is an Italian company specialized in the production and marketing of air heat exchangers, with adiabatic technology, which allow for reductions in energy consumption, water and noise emissions.

Starting in September, work began on expansion works for the main production site in line with the business plan that constituted an integral part of the contractual agreements between the parties. The works are expected to be completed by the end of the second quarter of 2023.

ACQUISITION OF THE BUSINESS UNIT OF ITALIA WANBAO ACC (WACC)

The Group has acquired a business unit from Italia Wanbao ACC under extraordinary administration, located in Mel (Belluno, Italy), with an overall investment of approximately € 6 million euro over a three-year time frame, that included purchase of the building for an overall value of € 70,000.

An industrial conversion has been set in motion and the first production lines started up in September 2022. Besides the conversion of the industrial activity, the LU-VE Group has handled the training of the former Wanbao ACC personnel transferred with the business unit, guaranteeing the job security of the employees in the area: at 31/12/2022 73 employees had joined the Group workforce. By June 2024 a total of 150 employees will

be taken on by the Group (30 workers every half-year with the last 20 hirings expected to take place during the first half of 2024).

Thanks to this new plant, the LU-VE Group has expanded its production of static heat exchangers for refrigerated counters, air conditioning units, chillers and heat pumps, already manufactured at the Group's Limana (Belluno, Italy) plant, the headquarters of the SEST S.p.A. subsidiary, as well as other Group plants.

STRATEGIC AGREEMENT WITH SYSTEMAIR AB

The Group has reached a strategic agreement with Systemair AB (a Swedish company listed on the Stockholm stock exchange), that on the one hand has involved the transfer to Systemair of the entire shareholding in Tecnaïr LV S.p.A. and, on the other, has led to the definition of a global long-term agreement by which the Group will supply Systemair with heat exchangers and related products and will continue to develop cross-selling for precision air conditioning units.

The Group will continue to focus on "outdoor" air conditioning systems for state-of-the-art data centres, a fast-growing sector in which the Group has achieved excellent results in recent years thanks to decisive technological developments.

A NEW PLANT IN THE US

A resolution has been passed to build the second lot of the production warehouse in the United States which will be completed in Spring 2024 in Jacksonville, Texas; the first lot was completed in 2021.



OUR ECOSYSTEM: PRODUCTS, APPLICATIONS, IMPACTS

Heat exchangers

Air cooled
equipment

Close control
air conditioners

**Commercial
and industrial
refrigeration**



Air Conditioning



Process cooling
for industrial and power
generation applications



Other applications



LU-VE group commitment

Glass doors



FOOD SAFETY

Today, some three billion people lack safe and healthy food. The development of sustainable and technologically advanced cold chains is essential for the processing, storage, preservation, distribution and, ultimately, the increased availability of safe food for ever larger segments of the population.

A proper cold chain ensures safe and properly stored food and reduces food waste.

53%*



CLIMATE WELL-BEING

The demand for air conditioning is growing internationally due to population growth, urbanisation rates and the demand for a better quality of life, especially in the warmer areas of the world.

Indoor climate comfort in buildings is an important element of people's health and well-being and quality of life

21%*



ENERGY EFFICIENCY

On average, air conditioning and cooling accounts for around 15% of electricity demand globally, with peaks of up to 50%. Mitigating the resulting environmental impacts involves improving energy efficiency standards by 50% by 2030.

Maximising the energy efficiency of factories, buildings and systems is crucial for protecting the planet, reducing environmental impact and improving businesses' competitiveness.

20%*



DIGITAL TRANSFORMATION

The international digitalisation process also touches on cloud computing. This strong impetus implies an increasing focus on the energy consumption of data centres, which currently account for 1% of the world total in terms of environmental sustainability.

Operational and efficient data centres are a prerequisite for a country's digital transformation

6%*



* respect Group's total turnover in 2022

HEAT EXCHANGERS



53%

HEAT EXCHANGERS FOR REFRIGERATION, AIR CONDITIONING, MOBILE AND DOMESTIC APPLICATIONS

Air cooled heat exchangers are components in which heat is transmitted between two fluids to remove heat from or transfer it to a specific environment. This type of exchanger is applied in more complex machinery made by third parties.

CLOSE CONTROL AIR CONDITIONERS



4%

CLOSE CONTROL AIR-CONDITIONING FOR DATA CENTRES, OPERATING THEATRES, CLEAN ROOMS AND TELEPHONY

Close control air conditioning units are used in controlled atmosphere rooms such as operating theatres and clean rooms, and particularly delicate "technological" spaces such as data centres and server rooms. They guarantee strict control (with extremely tight tolerances) of temperature, humidity and air purity, and allow the remote signalling of any anomalies, malfunctions and alarms through specific electronic microprocessors.

AIR COOLED EQUIPMENT



40%

EVAPORATORS, AIR CONDENSERS, CO2 GAS COOLERS, DRY COOLERS, INDUSTRIAL APPLICATIONS

Air cooled equipment consists of heat exchangers of various sizes and shapes paired with fans - electric or electronic - designed and sized to optimise heat exchange and, at the same time, reduce electricity consumption, and minimise refrigerant fluid volumes and the noise levels generated. Air cooled equipment (evaporators and condensers) may be installed, depending on the type, both inside refrigerated rooms and outside rooms to be cooled and/or conditioned. Each product is made according to the specific needs of the application and customer.

GLASS DOORS



3%

GLASS DOORS AND CLOSING SYSTEMS FOR PROFESSIONAL, INDUSTRIAL AND DOMESTIC REFRIGERATION EQUIPMENT

Glass doors are installed in refrigerator aisles and displays, mainly in supermarkets or retail outlets, but also in other applications. They ensure temperature maintenance (negative or positive) inside the refrigerator sections and perfect visibility of the goods on display.

1.3 Enhanced sustainability governance

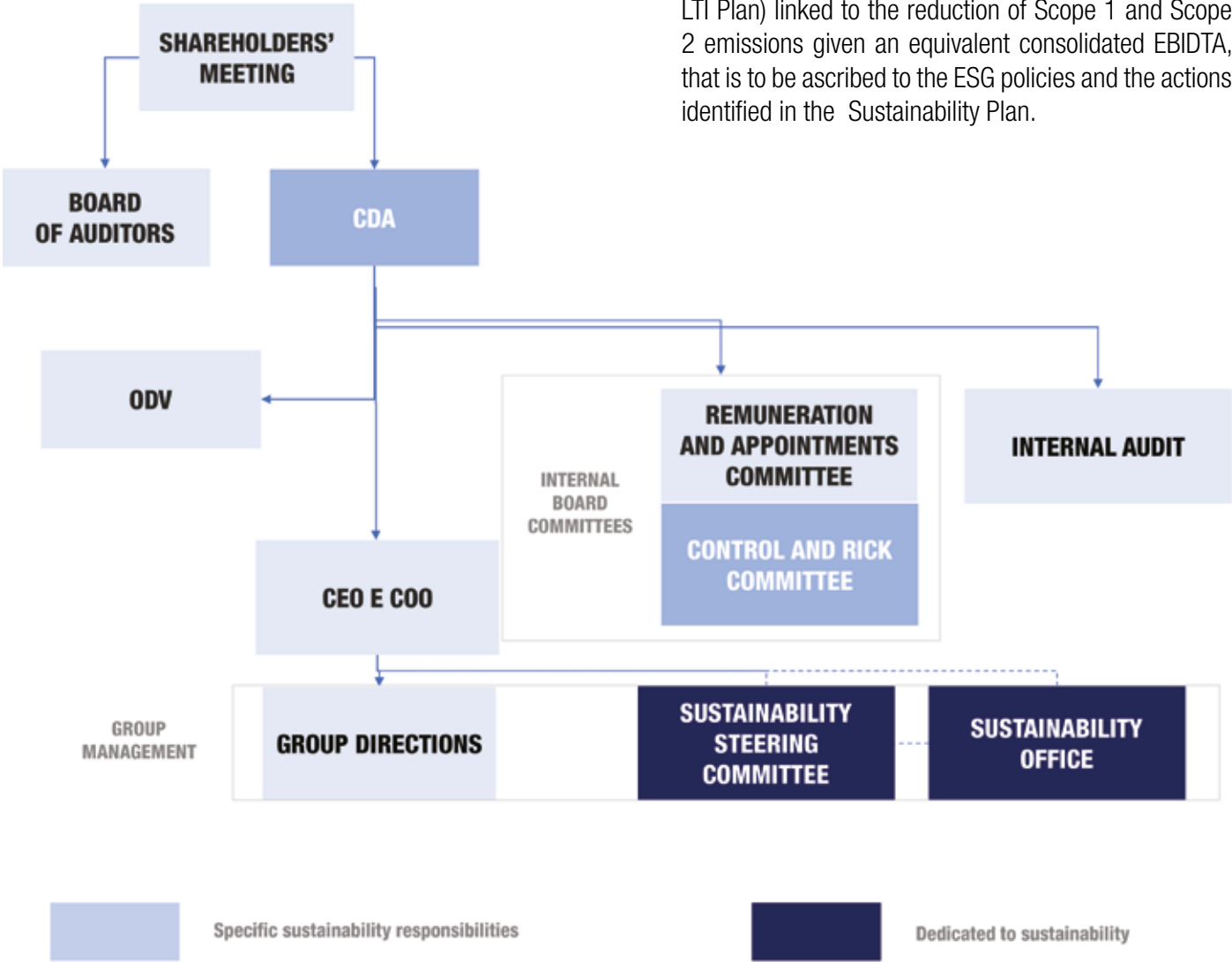
The governance of sustainability is integrated with the traditional governance model adopted by the Group and sets out to maximise the value created for shareholders and all stakeholders. The goal is to guarantee complete integrity and pursue the sustainability of its business.

In 2022 the Group strengthened its sustainability oversight by setting up a corporate **Sustainability Steering Committee**, with the participation of the CEO, the COO, Investor Relations and the Sustainability Office.

This Committee shares the progress of the Group's sustainability performance and discusses strategic lines of action, which are then submitted by the executive directors to the Board of Directors for appropriate assessments and resolutions.

This Steering Committee met four times during 2022 and also saw the participation of other Group Directors and managers responsible for the specific sustainability and business issues addressed. The corporate Sustainability Steering Committee has prepared the first **Sustainability Plan 2023-2025**, which was examined by the Control and Risks Committee and approved by the Board of Directors during February 2023.

With this perspective, in defining our Remuneration Policy, within the context of the MBOs and the new 2023-2025 LTI Plan we have confirmed the presence of parameters linked to accident prevention indices, already applied during the previous years, and a parameter has also been introduced (for both the MBOs and the new LTI Plan) linked to the reduction of Scope 1 and Scope 2 emissions given an equivalent consolidated EBITDA, that is to be ascribed to the ESG policies and the actions identified in the Sustainability Plan.





ROLES AND RESPONSIBILITIES

The **Board of Directors** is responsible for pursuing LU-VE Group's sustainable success. It provides strategic direction and evaluates the adequacy of the internal control and risk management system of LU-VE S.p.A. and the LU-VE Group. It is responsible for approving the non-financial statements. The COO is the contact for sustainability issues.

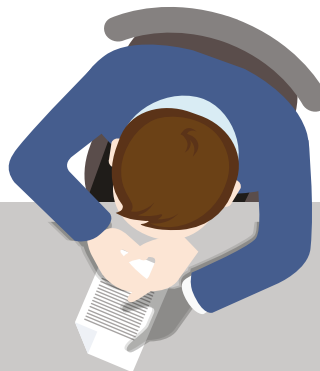
As at 31 December 2022, the Board of Directors was composed of 11 members, of which 4 were women. Four members have specific technical expertise on sustainability issues.

The **Control and Risk Committee** ensures that the periodic financial and non-financial information is able to suitably and correctly represent the business model, the company's strategies, the impact of its business

MATTEO LIBERALI
PRESIDENT AND DIRECTOR - CEO
EXECUTIVE MEMBER



PIERLUIGI FAGGIOLI
DEPUTY PRESIDENT
EXECUTIVE MEMBER



GUIDO GIUSEPPE CRESPI
INDEPENDENT DIRECTOR
NON-EXECUTIVE MEMBER



RAFFAELLA CAGLIANO
INDEPENDENT DIRECTOR
NON-EXECUTIVE MEMBER



MARCO VITALE
DIRECTOR
NON-EXECUTIVE MEMBER



Membri del Cda responsabili e/o con competenze in materia di sostenibilità

activities and the performance achieved, and lastly examines the content of periodic non-financial information which is relevant for the purposes of the internal control and risk management system.

The **Supervisory Board** was established and operates pursuant to Italian Legislative Decree 231/2001.

Internal Audit is responsible for ensuring that the in-

ternal control and risk management system is operational and adequate.

The **Sustainability Office**, in operation since 2021, reports directly to the COO, with the aim of ensuring detailed management of projects at international level.

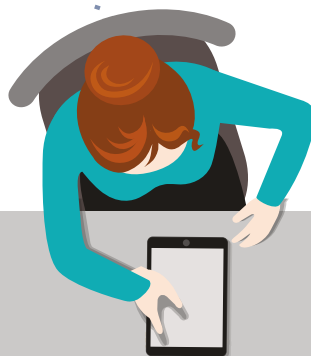
FABIO LIBERALI
DIRECTOR

NON-EXECUTIVE MEMBER



ROBERTA PIERANTONI
DIRECTOR

NON-EXECUTIVE MEMBER



LAURA OLIVA
DIRECTOR

NON-EXECUTIVE MEMBER



MICHELE FAGGIOLI
DIRECTOR - CCO

NON-EXECUTIVE MEMBER



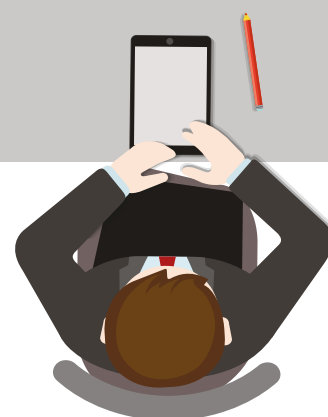
ANNA GERVASONI
INDEPENDENT DIRECTOR

NON-EXECUTIVE MEMBER



STEFANO PALEARI
INDEPENDENT DIRECTOR

NON-EXECUTIVE MEMBER



OUR GOVERNANCE TOOLS

In addition to the parent company LU-VE S.p.A., the subsidiary SEST S.p.A. also has an **Organisation, Management and Control Model** (pursuant to Italian Legislative Decree no. 231/2001) to prevent and combat the risk of commission of the offences laid out in the Decree, including the risk of offences perpetrated against individuals, environmental crimes and corruption offences.

The Organisation, Management and Control Model (pursuant to Italian Legislative Decree no. 231/2001) has involved the introduction of a whistleblowing system to be used by anyone wishing to report any illegal activities of which they have become aware. In line with the national legislative framework, the system makes it possible to anonymously report any form or type of offence falling within the list of offences, pursuant to Italian Legislative Decree 231/2001, to the company's Supervisory Board. In accordance with regulatory provisions in force in Poland, a similar whistleblowing system was adopted there in 2021. **No reports of illicit activities were received via the whistleblowing system in 2022.**

The 2022 internal audit plan, an integral part of the **"2020-2022 Internal Audit Plan"** reviewed following an updated risk assessment and approved by the Board of Directors in March 2022, has been completed. The new three-year audit plan for 2023-2025 will be submitted to the Board of Directors for approval in March 2023.

In the reporting period, the LU-VE Group **did not identify any cases of corruption or legal actions for anti-competitive, anti-trust or monopolistic conduct**. Furthermore, **no penalties were paid and no significant cases of non-compliance with laws and regulations occurred**, including those regarding the communication of product information.

Also note that during the three-year period 2020-2022 the LU-VE Group did not disburse any sum to directly or indirectly finance a party or political person.

SUSTAINABILITY RISKS AND CLIMATE RISKS

The **internal control and risk management system**, an integral part of the Governance model, is described in the "Guidelines on the Internal Control and Risk Management System of LU-VE S.p.A.", approved by the Board of Directors at the end of 2017 and revised, based on changes introduced by the Corporate Governance Code and changes in the Group's structure. The Group's risks are analysed on a yearly basis and the results are then described to the Board of Directors in the "CEO Report".

During the last quarter of 2021, the Parent Company launched a project designed to introduce an integrated Group Enterprise Risk Management system (ERM), i.e. a model that brings together the management and risk monitoring systems for specific areas into a single outlook, yet still guarantee the independent operation of the systems and the parties responsible for them, avoiding duplication and increasing efficiency and effectiveness, in order to:

- coordinate the overall ERM process, taking care to ensure correct consolidation and risk prioritisation;
- consolidate the risk management strategies identified by all corporate functions, identifying common guidelines;
- draft regular reports on the ERM model, for the CEO, Board of Directors and Control and Risk Committee, also with a view to supporting the Board of Directors in the definition of elements of the Risk Appetite levels.

This project, completed at Parent Company level, will be gradually expanded with priority assigned to subsidiaries of strategic relevance. As for non-financial risks, these were analysed for 2022, taking into consideration the main risks at a global level, the various phases of the value chain, the specific nature of the production processes and the countries where the Group operates. Non-financial risks were classified into different categories depending on the probability of occurrence and the potential impact. There were no significant deviations from the previous analysis. Most of the risks identified were assigned a low or negligible score, including for example consumer health and safety, and the recording of cases of non-compliance related to product labelling and marketing.

The Group identifies the possible inability to achieve strategic objectives due to changes in the external environment (also taking into account possible impacts on

the supply chain) and possible inadequate management of atmospheric emissions as moderate-level risks.

In 2022, therefore, a specific analysis of physical climate risks was carried out, based on the climate scenarios identified by the IPCC (Intergovernmental Panel on Climate Change).

The current global context is, in fact, facing increasingly intense effects of climate change. The risk relating to climate change has now been acknowledged as one of the main risks for the economic context of society.

The IPCC defines climate risks as potentially negative consequences for ecological systems and humans as a result of the potential impacts of the effects of climate change and the actions undertaken by man to counter these risks, to adapt to and mitigate them. These consequences can concern means of subsistence, health and well-being, as well as economic, social and cultural assets, investments and infrastructure. Furthermore, following creation of the reference framework of the Task Force on Climate-Related Financial Disclosures (TCFD) and the growing requests from regulatory authorities, the need to develop a better understanding of the risks and opportunities linked to climate have now been fully acknowledged.

The assessment of physical climate risks conducted by the LU-VE Group in 2022 with the support of a specialist external company has provided a global overview of the exposure to risk with reference to all the production facilities with consequently definition of suitable mitigation measures.

The physical climate risks were analysed taking into consideration the different future scenarios based on internationally recognised climate models based on greenhouse gas concentration pathways (Representative Concentration Pathways - RPC) developed by the Intergovernmental Panel on Climate Change (IPCC) with particular reference to the RCP 2.6 and RCP 4.5 scenarios. Considering the time frame, the simulations were performed with a horizon up to 2035.

More specifically, the analysis was developed by combining scientific data at asset and climate risk level, assessed according to the dimensions of i) probability of occurrence of the risk based on various climate models, ii) asset exposure and iii) vulnerability, i.e. expected losses if the event should occur.

The analysis showed that the risks that will have the

greatest influence on the Group are temperature variability, intense precipitation and precipitation variability. Vice versa, the exposure to certain other risks, e.g. drought and fire risk, are not expected to be material to the Group's operating assets. The analyses performed have strengthened awareness of the exposure to risk and on the basis of these results the Group has begun to assess the actions and investments required to appropriately contribute to climate change mitigation and adaptation.

In 2022, the LU-VE Group also updated its **climate risk transition analysis**. The various types of risk - market, technological, legal/policy and reputational - have been assessed based on their potential impact on the business and on the Group's capacity to manage them over time. For example, market risks were assessed by linking them to production and transportation cost increases due to specific market conditions and the introduction of a carbon tax, and the demand for products with lower emission impact was also taken into consideration given the more restrictive regulations and legislation, such as "F-Gas" Regulation.

Thanks to these analyses, the Group has raised its awareness of the degree of exposure to risk and of the need to identify the best ways to appropriately contribute to climate change mitigation and adaptation; the related impacts, in terms of investments, costs and other impacts on cash flow have been assessed and taken into consideration in the preparation process for the 2023-2026 Business Plan. Furthermore, with reference to the management of risks and opportunities, it should be noted that the significant sustainability issues - including the effects of climate change - have been identified and assessed as part of the consolidated corporate risk assessment system.



OUR POLICIES


















The commitments undertaken in the policies are integrated into the company's strategies and the operating procedures adopted by the LU-VE Group, also in relation to its business partners.

The policies also define the roles responsible for ensuring that the policy principles are complied with and shared by all the corporate functions of all the Companies. Their approval, depending on the document content, can be the direct responsibility of the Board of Directors or of the Head of the Corporate Function responsible for correct application of the policy in question.

Once a policy is approved, it is published and communicated using the company's information systems, as well as e-mails, newsletters and special meetings. Depending on the significance of the content and the wishes of those responsible, training sessions can be organised for employees with a view to sharing the guidelines on correct implementation of the policies in business practices.

When the field of application goes beyond LU-VE Group collaborators to include business partners, the company functions of reference are required to share the policies with the various stakeholders.



POLICY GUIDELINES	AREA	OBJECTIVES AND CONTENT	DISSEMINATION P (public)/ I (internal)	APPLICATION	COMMUNICATION
Environmental policy		Formalises the principles and actions to protect resources and mitigate environmental aspects. Defines a standardised approach to the management of environmental aspects at all LU-VE Group facilities, and to express the commitment to safeguarding resources through four fundamental dimensions: people, market, processes and products.	I	Employees, Company Representatives, Business Partners	- Shared via the company's information systems
Code of Ethics	  	Illustrates the behavioural principles that guide the Group's activities and support the commitment to protecting health and safety and the human rights of workers, as well as protection of the environment in all its components. Promotes respect and empowerment of people; integrity in the conduct of business; the rejection of corrupt practices or behaviour; and the respect for business ethics in terms of transparency, market fairness and fair competition. The commitment calls for the performance of <u>due diligence</u> .	P	Employees, Company Representatives, Business Partners	- Formal adoption by the Parent Company - Sharing with all Group companies - Publication on the company website - Hard copy distribution on the bulletin boards of Group companies
LU-VE Group HR Policy		Acknowledges that human capital is "the most important, strategic and fundamental resource for the Group's growth". Formalises the business values and officially outlines the Group's objectives and priority areas for ensuring a positive, stimulating and safe working environment. The commitment entails <u>respect for human rights</u> .	I	Employees, Company representatives	- Shared via the company's information systems
Travel Policy	 	Defines the guidelines to support employees in organising their business travel according to methods and procedures that promote economic and environmental sustainability.	I	Employees	- Shared via the company's information systems - Corporate communications
General Purchase Conditions	   	Shares with suppliers the main principles on which the Group's operations are based: ethics, integrity, limitation of environmental impact and its monitoring, creation of a healthy and safe working environment, adoption of international conventions on human rights, such as the International Organisation of Labour and the United Nations Convention on the rights of children. The commitment calls for the performance of <u>due diligence</u> .	P	Suppliers	- Document signing at the time of activation of the supply contract or as soon as possible
Supplier Form	   	Through the suppliers, promotes the protection of best working practices, <u>respect for human rights</u> along the entire supply chain and compliance with social and environmental regulations.	I	Suppliers	- Document signing at the time of activation of the supply contract or as soon as possible
Diversity Policy for members of the corporate bodies	 	Supports an appropriate level of diversity among members of the Corporate Bodies, with the aim of guaranteeing optimum composition and ensure the fairness of the Group's Bodies, adding variety to the discussion given the different skills of the various members, as well as enabling a greater understanding of the requirements and requests of stakeholders.	P	Corporate bodies	- Approval by the Board of Directors and publication on the company website
Policy for managing dialogue with investors and other stakeholders		Defines open, transparent and continuous forms of dialogue with Shareholders, other investors and all the main Stakeholders of the Company with a view to fostering the creation of long-term value for the entire Group. Helps to understand the business model, strategy, market positioning, the Group's financial results and the Company's governance.	P	Company representatives, Investors	- Approval by the Board of Directors and publication on the company website
GDPR Policy		Formalises the paperwork for compliance with Regulation (EU) 679/16 ("GDPR") containing provisions on personal data processing which came into force in May 2018. Raises awareness among corporate functions on the GDPR issues regarding the collection and processing of personal data of natural persons.	I	Employees	- Shared via the company's information systems - Corporate communications



























KEY  Environment  Human resources  Supply chain  Governance

ENVIRONMENTAL AND SOCIAL CERTIFICATIONS

The organisation models compliant with international ISO standards are designed to keep the impacts generated by activities under control and systematically promote sustainable improvements. At the end of 2022, the governance was renewed with the inclusion of two new Group managers in the Operations Department: the Cooling Systems Quality Manager and the Components

Quality Manager.

In 2022, the Bhiwadi plant (Rajasthan, India) obtained the renewal of the “IGBC Green Factory Building – Gold” certifications, issued by the Indian Green Building Council (IGBC), relative to waste management, efficient water usage, reduction of the use of fossil fuels, energy efficiency and conservation of natural resources.

PRODUCTION FACILITIES	ISO 9001	ISO 14001	ISO 45001	ISO 50001
<i>Goal</i>	<i>Organisation quality management</i>	<i>Environmental management</i>	<i>Occupational health and safety management</i>	<i>Energy management</i>
ITALY				
Alonte (Vicenza)				
Flumignano di Talmassons (Udine) * <i>Refrion Srl</i>				
Flumignano di Talmassons (Udine) * <i>R.M.S. Srl</i>				
Limana (Belluno)				
Travacò Siccomario (Pavia)				
Uboldo (Varese) ⁵				
CHINA - Tianmen (Hubei)				
FINLAND - Vantaa (Uusimaa)				
INDIA				
Bhiwadi (Rajasthan)				
Sarole (Pune Dist., Maharashtra)				
POLAND - Gliwice (Slesia) 2 facilities				
				
CZECH REPUBLIC - Novosedly (Southern Moravia)				
				
RUSSIA ⁶ - Lipetsk				
SWEDEN - Asarum (Karlshamn)				
USA - Jacksonville (Texas)				

⁵ The certifications indicated refer to LU-VE SpA in Uboldo

⁶ Owing to organisational changes in the certification agency due to political instability, the ISO 9001 certificate was suspended during 2022. Action will in any case be taken to guarantee restoration of the certification.

OUR STAKEHOLDERS

The LU-VE Group stakeholders are all those in a position to influence the Group's business, as well as those who have expectations of the Company. The mapping of the Group's stakeholders was carried out by top management when drafting the first sustainability report.

The stakeholders are regularly engaged on various issues to maximise the positive impacts of the business,

minimise negative impacts and, for specific categories, share the strategic lines of development.

For the purpose of listening and engagement effectiveness, the various tools are periodically assessed and customised on the basis of the linguistic and cultural diversity of the different stakeholders. The contact for stakeholder engagement and listening activities liaises with the central structures to ensure a thorough and common approach is adopted.

STAKEHOLDERS	OBJECTIVES OF STAKEHOLDER ENGAGEMENT	MAIN FEEDBACK AND ENGAGEMENT TOOLS
Employees	<ul style="list-style-type: none"> Respect for workers' rights Contribution to individual well-being Protection of occupational health and safety Development of skills and professionalism Monitoring of emission impacts of home-work travel 	<ul style="list-style-type: none"> Ideas mailbox Training meetings Company intranet Dedicated internal communications Ad hoc surveys International meetings on specific topics (e.g. HR meetings)
Customers	<ul style="list-style-type: none"> Assessment of customer satisfaction Improvement and development of services and solutions with low energy consumption Co-designing 	<ul style="list-style-type: none"> Customer satisfaction analysis Group Customer Care Service Website – Products section Social networks Customer Newsletter
Shareholders and Investors	<ul style="list-style-type: none"> Sharing of growth and sustainability drivers Profitability Reduction of investment-related 	<ul style="list-style-type: none"> Insider List One-to-one meetings Roadshows Dedicated communications Press releases Website –Investor relations section Investor Newsletter
Banks and other lenders	<ul style="list-style-type: none"> Support for the Group's growth and sustainable development 	<ul style="list-style-type: none"> Press releases Dedicated communications and meetings Official financial statement documentation
Suppliers	<ul style="list-style-type: none"> Compliance with contractual conditions Protection of workers and respect for human rights Assessment of supplier impact on CO₂ emissions 	<ul style="list-style-type: none"> Supplier selection, qualification and assessment questionnaires Dedicated meetings Dedicated communications
Regulatory bodies and other associations	<ul style="list-style-type: none"> Process and product certifications Improvement of the performance and impacts of processes and products 	<ul style="list-style-type: none"> Certification audits
Local communities	<ul style="list-style-type: none"> Development of projects of value to the community Transparency and sharing of information on business issues Sharing of abilities and skills 	<ul style="list-style-type: none"> Website Social networks Press releases
Trade associations	<ul style="list-style-type: none"> Updated and prompt information on scenarios and performance Joint promotion of key sustainability and business issues 	<ul style="list-style-type: none"> Discussion with representatives
Academic centres and universities	<ul style="list-style-type: none"> Enhancement of research activities Sharing of technical know-how 	<ul style="list-style-type: none"> Research partnerships Training sessions Workshops
Media	<ul style="list-style-type: none"> Transparent, clear and prompt disclosures 	<ul style="list-style-type: none"> Website Social networks Press releases and dedicated Newsletters



4k



5k



11

COMMUNICATIONS

SOCIAL MEDIA AND WEB COMMUNICATIONS

SOCIAL MEDIA

The LU-VE Group LinkedIn page is one of the Group's main communication channels. Over time it has recorded excellent qualitative and quantitative performances, thanks to its content: corporate and financial news, information on new products, technologies and applications, market news, events, interviews and webinars. A special section is also dedicated to personnel search. The page is in Italian and English, and occasionally in German, Spanish, Swedish, Russian, Finnish and Dutch.

At the end of 2022, there were more than 23,200 followers (up by 6,226 compared to the end of 2021), with over 53,500 visits to the home page (+1,219.8% compared to 2021) and almost 18,900 individual visitors (+1,230.4%).

The LU-VE Group also has active pages on Facebook (Italian and English) with 1,705 subscribers (+194 compared to the previous year) and on YouTube.

WEB SITE

The Group site www.luvegroup.com is subdivided into two sections dedicated to products and "investor relations".

In 2022 it had over 205,000 total visitors, with a monthly average of 16,000.

PRIZES AND AWARDS 2022



COMPANIES MOST ATTENTIVE TO CLIMATE IN 2022

LU-VE stood out among the top 100 Italian companies engaged in reducing CO₂ emissions between 2018 and 2020, according to the Corriere della Sera daily newspaper in collaboration with Statista GmbH (a German company specialising in market research and corporate data analysis). The criterion adopted for the rankings is primarily based on reducing the ratio between carbon dioxide emissions (both direct and indirect) and turnover.

SUSTAINABILITY LEADER 2022

“Sustainability Leader”: LU-VE was ranked among the 150 most sustainable Italian companies by Statista GmbH (a German company specialising in market research and corporate data analysis), in collaboration with “Il Sole 24 Ore”, Italy’s main financial daily. The LU-VE Group was selected as one of Italy’s most successful companies in integrating environmental, social and economic decisions into their corporate practices. The research took into consideration more than 1,500 reports on companies operating in Italy, focusing on three sustainability macro-areas: environmental, social and corporate governance.



GREEN STAR SUSTAINABILITY 2022

LU-VE took 4th place in the ranking reserved for the mechanical industry in the “Green Star Sustainability” prize awarded by ITQF (German Quality and Finance Institute) in collaboration with the Institute for Management and Economy Research (IMWF) in Hamburg and La Repubblica Affari&Finanza. The analysis was conducted on 300 Italian companies using the social listening approach which, thanks to sophisticated software and artificial intelligence, managed to collect more than a million online citations on the impact of companies based on 30 criteria, including environmental, economic and social, innovation and technology sustainability.



INDUSTRIA FELIX PRIZE 2022

LU-VE has been awarded the highest accolade for its financial statements, the “Industria Felix Prize” at the 3rd National Edition of “Italy competes”: “A company with a particularly distinguished record in terms of competitiveness, financial reliability and sustainability”. The award is organised by the “Industria Felix Magazine” in collaboration with Cerved group SpA, the Guido Carli Luiss University, A.C. Industria Felix, with the support of Confindustria (the Industrial Trade Association) and the patronage of SIMEST Spa.





EXPORT CHAMPIONS 2022

LU-VE has received the accolade for standing out among Italian companies with the highest export quotas during 2020, based on research by Statista GmbH in collaboration with “Il Sole 24 Ore”.



CHINA AWARDS 2022

“Silk Road” category: awarded by the Italy China Council Foundation (ICCF) and Class Editori, this award is dedicated to Italian concerns that stand out especially for the long and significant growth and development path over the years in the Chinese market.



COMPANY OF THE MONTH – APRIL 2022

The award to Zyklus/LU-VE Group (Jacksonville, Texas, USA), was awarded by JEDC – Jacksonville Economic Development Corporation to local companies that had contributed the most to the economic growth of the local community and surrounding areas.



CARDANO PRIZE





INTERNATIONAL CARDANO PRIZE

Iginio Liberali, founder of LU-VE Group was awarded the “International Gerolamo Cardano Prize 2022”, now in its 34th edition, for the *“entrepreneurial commitment that allowed him to set up a highly innovative company, constantly engaged in research and development activities and in which human capital and sustainability play a key role”*.

The prize named after Gerolamo Cardano (Italian doctor, mathematician, philosopher and academic) is awarded by the Pavia Rotary club – District 2050 and is awarded every year to those whose studies and activities have contributed strongly to Progress in Human and Experimental Scientists and in the Liberal and Applied Arts. The recognition is assigned with criteria alternating between Sciences and Arts in the name of a personality of the past who has honoured the culture of Pavia. In the recent past the award was bestowed on personalities such as Sergio Pininfarina, Philippe Daverio, Pupi Avati, Gianfranco Ravasi, Angelo Panebianco, Alberto Quadrio Curzio, Ilaria Capua and others.

PALMARÈS

2009

- Finalist in the 2009 Friend of the Environment Innovation Award - LU-VE SpA, awarded by Legambiente/Green Economy.
- 2009 “Etica&Impresa” Award - LU-VE SpA “Special Mention” Category “Occupational Health and Safety” (for the “Zero Risks-Zero Accidents” and “Zero Risks-Safely Together” programmes).

2010

- 2010 “Etica&Impresa” Award - LU-VE SpA “Equal Opportunities” Category (Positive actions planned and/or contracted aimed at implementing and disseminating the use of tools designed to protect and enhance gender, ethnic and social diversity).

2012

- Company to Watch 2012 Award - Databank Cerved.

2013

- Supplier Award Mark Gardner - Dean & Wood.

2014

- “IGBC Green Factory Building - Gold” 2014, Spirotech India.

2015

- China Awards 2015, “Top Investors in China” category.
- “From father to son” - Among the finalists of the 6th edition of the “From father to son 2015” Award.

2017

- Best social responsibility practices 2017” LU-VE SpA Awarded by the Lombardy Region and Unioncamere Lombardia.
- Finalists in the 15th edition of the Sodalitas Social Award, recognition for companies committed to achieving a sustainable future (growth, development and inclusion), awarded by Sodalitas Foundation.

2009 - 2021

2018

- China Awards 2018, “Top Investors in China” category.
- IGBC Green Factory Building - Gold 2018 Spirotech India.
- Felix Industry Award 2018 “High Budget Honour” - Awarded by Cerved, LUISS, Confindustria Lombardia and ANSA.
- Supplier Quality Award 2018 - Ingersoll Rand.

2019

- “Best social responsibility practices 2019” LU-VE SpA Awarded by the Lombardy Region and Unioncamere Lombardia.
- China Awards 2019, “Top Investors in China” category.
- Sustainability Award 2019 Spirotech (Bhiwadi, India) - Global Supplier Award Programme of Trane Technologies.
- National Awards for Export Excellence - Spirotech awarded in the Large category, General Machinery sector. Award sponsored by the Engineering Export Promotion Council (EEPC).

2020

- Eccellenze d'Impresa 2020 - LU-VE SpA “Special Mention Internationalisation Category”, awarded by GEA, Harvard Business Review Italia and Arca Fondi SGR.
- Digital Stars Italia 2020 (Mechanical Industry category), awarded by ITQF (German Institute for Quality and Finance).
- China Awards 2020, “Silk Road” for growth and development in China.
- “Dynamic companies” Mediobanca - 55th edition of the study on “Leading Italian companies”.
- Top Job 2020 Best Employers - Companies where people work best in Italy (Mechanical Industry category), awarded by ITQF (German Institute for Quality and Finance) and La Repubblica Affari&Finanza.
- M&A Awards 2020: LU-VE among the Italian “champions” for the acquisition of Alfa Laval’s “Air” division.

2021

- China Awards 2021, “Silk Road” category for growth and development in China.
- Top Job 2021 - Companies where people work best in Italy (Mechanical industry category)
- “L'impresa oltre l'impresa 2021” Prize – Lombardy Region.
- Sustainability Leader 2021, among the top 150 sustainable companies in Italy.
- Virtuous company for sustainable energy – awarded by Repower
- Green Star Sustainability 2021.
- Bronze Medal EcoVadis 2021 - Annual Sustainability Assessment.
- “KNVVK & Young Cool Innovation Award 2021” – Awarded to “Igea” (air sanitisation system) as one of the best technologies/innovations in the field of refrigeration.
- “Gulfood Manufacturing Industry Excellence Awards Winner 2021” to “Igea”, air sanitisation system.
- Engineering Export Promotion Council (EEPC) Award – A Spirotech/LU-VE Group in Bhiwadi (India), promoted by the Indian Ministry of Commerce and Industry.

1.4 A new sustainability plan

During 2022, the Sustainability Steering Committee carried out analysis to certify the positioning of the LU-VE Group on environmental and social issues and defined a proposal for a series of actions to be carried out over the next three years, submitting them in February 2023 to examination by the Control and Risk Committee and the approval of the Board of Directors. It is the new LU-VE Group Sustainability Plan.

MATERIAL TOPICS AND IMPACTS

The material topics of LU-VE Group reflect the actual and potential, positive and negative impacts on the economy, the environment and people, including those affecting human rights, within the context of its activities and its business relations. The material topics are detailed below, ordered according to the number of associated impacts and their extent and an extract of the impact analysis.

The analysis conducted in 2022 led for each impact to

MATERIAL TOPICS	DESCRIPTION
Climate change	Actively contributing to climate change mitigation by closely monitoring the climate-altering gas emissions generated and identifying action plans to reduce them
Research, development and innovation	Promoting sector technological progress by investing in research concerning innovative solutions, also in collaboration with highly qualified partners linked to the world of universities and research
Customer orientation	Making our customers excited about our excellent products and services, that meet their needs and the quality requirements defined at Group level, as well as supporting them throughout the product life cycle
Workers' well-being and safety	Promoting the well-being of our people and providing them with a workplace where they can fulfil their potential and perform their tasks with passion and in safety
Products with reduced environmental impact	Designing and manufacturing products that minimise their overall environmental impact: solutions with reduced energy consumption, limited use of refrigerant charge, increased use of natural refrigerant fluids and reduced material
Business ethics and integrity	Managing relationships marked by transparency with all Group stakeholders, ensuring compliance with regulations in force in terms of combating active and passive corruption and guaranteeing institutional communications and honest, truthful promotions based on factual information
Food safety and waste	Ensuring a proper cold chain, enabling people in all countries to benefit from safe and properly stored food, while also reducing food waste
Talent attraction and development	Safeguarding and strengthening the know-how of our people through professional growth paths which make it possible to provide customers with a competent and professional service, while motivating personnel and promoting talent
Support for local communities	Supporting employees and their families and investing in the social and cultural development of local communities, as well as accelerating the journey towards an increasingly inclusive and meritocratic environment
Strategies for growth and long-term value creation	Promoting growth strategies geared towards long-term value creation by maximising the positive value generated in identified impact areas such as energy efficiency, food safety, climate well-being and digital transformation
Responsible supply chain	Promoting a responsible and sustainability-conscious supply chain and developing relationships of trust with partners
Resource and waste management	Minimising the environmental impact of our production processes, enacting energy efficiency policies, reducing water consumption, the use of materials and the generation of waste

LEGEND Evolved world Better world Balanced world Conscious world

the definition of kind of impact (positive/negative, actual/potential) and the associated material topic, the Group defined the impact scope, the actions taken to manage related impacts, negative in particular, and the policies put in place by the Group to manage the impacts⁷.

The quantitative analysis for each impact was conducted taking into consideration different criteria.

The significance of the negative impacts was established by taking into account the severity and the likelihood of the impact. The severity takes into consideration the scale of the impact, its scope and the irremediable character.

The significance of the positive impacts was instead

established by taking into consideration the scale of the impact, its scope and the likelihood of the impact.

The significance established for each impact has enabled the calculation of a significance score. A materiality threshold for the impacts was subsequently defined, grouped by material topic. The result of this grouping is detailed in the table below.

The sustainability impacts have been assessed by the Remuneration and Appointments Committee and by the Board of Directors; the in-depth analysis of these impacts will be assessed with the engagement of external stakeholders as part of the implementation of the Sustainability Plan.

Type	Description	Positive/negative	Actual/potential	Related material topic
ENVIRONMENTAL IMPACT				
Climate change	Industrial production generates an impact in terms of emissions resulting from the use of energy vectors.	N	A	Climate change
	Industrial production generates an impact in terms of Scope 3 GHG emissions resulting from uncontrolled resources or not directly owned by the organisation, but which take place within the context of its value chain.	N	A	
	The design and development of increasingly innovative solutions from an energy efficiency point of view results in a drop in GHG emissions generated by the refrigeration and air conditioning sector.	P	A	
Energy consumption	Industrial production and related activities generate an impact in terms of energy consumption.	N	A	
Water resources and waste	Industrial production and activities connected to it generate an impact in terms of water consumption and waste.	N	A	Resource and waste management
Compliance and respect for environmental regulations in the supply chain	The violation of regulations governing environmental aspects within the supply chain can be damaging to the environment.	N	P	Responsible supply chain

⁷ The in-depth assessment of these impacts in terms of the processes used to trace effectiveness of the actions and indicators used to assess their progress is described in the specific sections of the document.

Type	Description	Positive/negative	Actual/potential	Related material topic
IMPACTS ON PEOPLE				
Climate well-being	The development and commercial distribution of commercial and industrial air conditioning and cooling solutions is increasingly significant in a context where global temperatures are gradually rising.	P	P	Products with reduced environmental impact
Energy efficiency	The maximisation of energy efficiency in factories, buildings and systems is a key issue in a global scenario trending towards a gradual reduction in energy consumption.	P	P	
Digital transformation	The development and spread of data centres are fundamental elements in a country's digital transformation, exchange of digital knowledge and technological innovation.	P	P	Research, development and innovation
Innovation and customer orientation	The growth and progress in commercial and industrial refrigeration is promoted and supported by research and investments in technological innovation.	P	A	
Training	Training supports the personal and professional growth of our employees.	P	A	Talent attraction and development
Employment	Industrial growth and development enable a gradual increase in employment in different countries.	P	A	
Occupational well-being	The creation of healthy and stimulating working conditions for personnel offers them an opportunity to make their mark and grow both professionally and personally.	P	A	
Discrimination	Potential discrimination in the workplace related to factors of culture, gender, sexual orientation, region, etc.	N	P	Workers' well-being and safety
Health and safety	The activity involves a series of impacts in terms of occupational health and safety, mainly linked to accidents. It is the industry's responsibility to protect occupational health and safety.	N	P	
Value for the community	Local areas and communities benefit from the support and backing of industry.	P	A	Support for local communities
Compliance and respect for human rights in the supply chain	Potential violation of human rights regulations in the supply chain.	N	P	Responsible supply chain
Food safety	The development of solutions to ensure a correct cold chain for food preservation, with special reference to countries with a low level of food safety.	P	P	Food safety and waste

Type	Description	Positive/negative	Actual/potential	Related material topic
ECONOMIC IMPACTS				
Listening and customer satisfaction	Provision of services aimed at accompanying and listening to customers in the design, development and delivery phases.	P	A	Customer orientation
Product failure	Customer dissatisfaction with product defects due to errors and omissions during product development and control.	N	P	
Labelling	Possible dissatisfaction of the customer in case of range of products offered not in line with market needs or product characteristics communicated.	N	P	
Compliance and respect for regulations against unfair competition and corruption	Potential violation of regulations against unfair competition and corruption by the organisation.	N	P	Business ethics and integrity
Use of aggressive fiscal policies	Impacts on countries in which the Group operates that adopt more favourable tax regimes	N	P	Strategies for growth and long-term value creation
Value for stakeholders	The activity entails a range of economic impacts, generating value for stakeholders and business partners.	P	A	

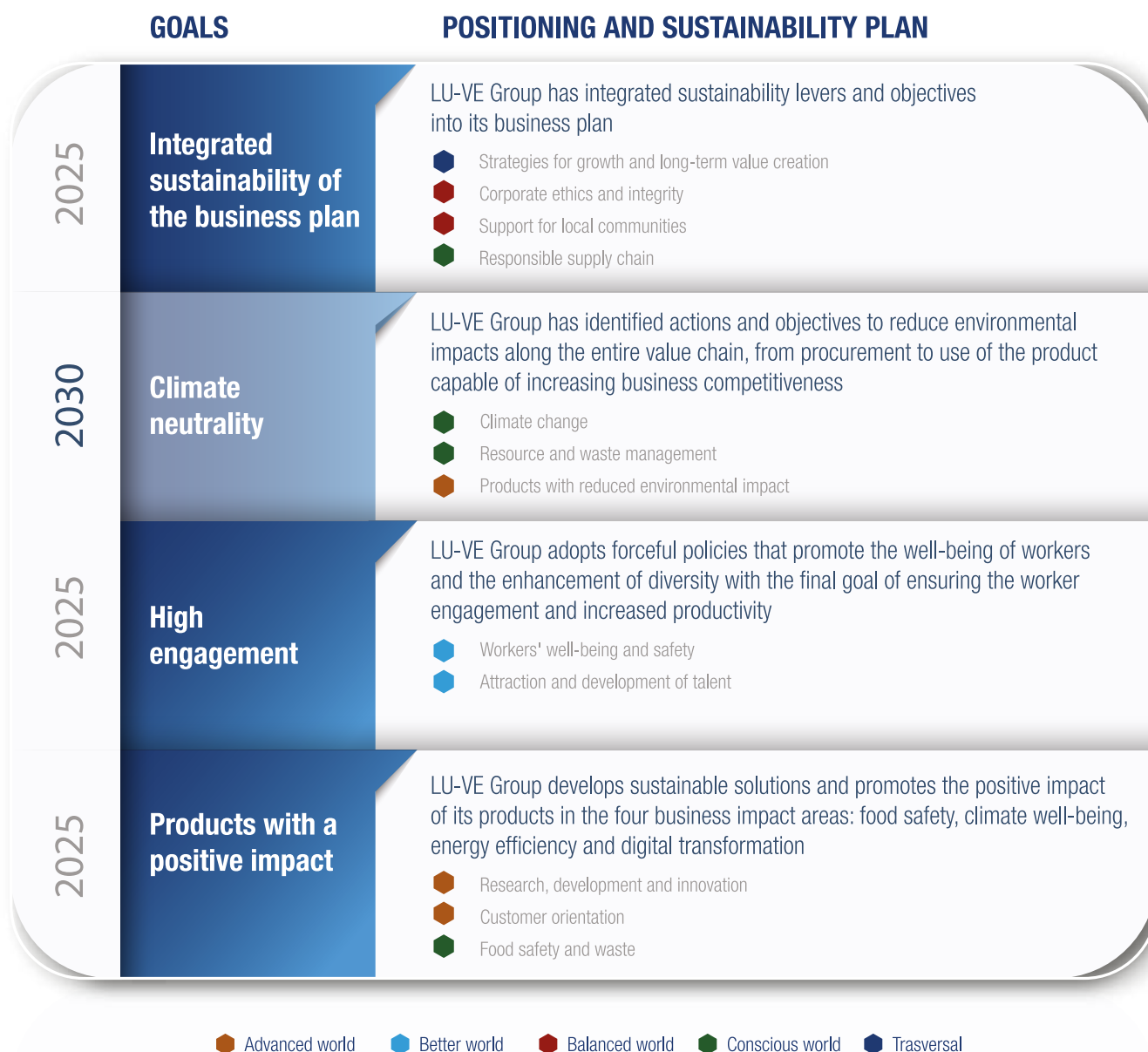


POSITIONING AND THE SUSTAINABILITY PLAN

The Sustainability Plan, assessed by the Control and Risk Committee and approved by the Board of Directors in February 2023, details the concrete actions to be pursued in line with the sustainability vision – aligned with some of the United Nations SDGs (Sustainable Development Goals) – and the desired positioning of the

LU-VE Group.

The vision, the desired positioning and the sustainability plan express the ambition and capacity of the LU-VE Group in managing its material topics, i.e. the topics expressing the Group's actual and potential impacts, positive and negative, regarding environmental, social and governance aspects.



The Sustainability Plan 2023-2025 is divided into numerous actions mainly targeting climate crisis mitigation and adaptation, including the reduction of direct and indirect emissions and the analysis of the environmental impact of products. also with reference to the

environmental impact analysis of products. As regards the social dimension, the Plan also defines a series of actions that support a widespread culture of sustainability both inside and outside the Group and support the satisfaction and engagement of its employees.

THE EUROPEAN TAXONOMY FOR ENVIRONMENTALLY SUSTAINABLE ACTIVITIES

The Taxonomy – **Regulation (EU) 2020/852 – EU Taxonomy Regulation** of the European Commission (hereinafter called “the Regulation”) – has established a unified classification system for the definition of economic activities that can be considered environmentally sustainable. This Taxonomy intends to promote the implementation of the European Green Deal and make it easier for investments to be directed towards environmentally sustainable economic activities.

According to the Regulation, in order to be considered “environmentally sustainable”, an economic activity must::

- Substantially contribute to the achievement of at least one of the six environmental objectives defined

in Article 9 of the Regulation: **climate change mitigation and adaptation**, sustainable use and protection of water and marine resources, transition to a circular economy, prevention and reduction of pollution, protection and restoration of biodiversity and ecosystems;

- Do No Significant Harm (**DNSH**) to any of the above environmental objectives;
- **Respect minimum social guarantees**, recognising the importance of international rights and standards;
- **Meet the technical screening criteria**⁸ defined in the regulation for each type of activity. Identified on a scientific basis and specific to each of the objectives, these criteria describe the conditions to be met in order to make a substantial contribution to achieving the objectives.



⁸ Currently, the criteria for the technical screening of the first two objectives of the regulation have been defined by Delegated Regulation (EU) 2021/2139 of 4 June 2021: Climate Change Mitigation and Climate Change Adaptation.

THE LU-VE GROUP ACTIVITIES DEEMED TAXONOMY-ELIGIBLE AND TAXONOMY-ALIGNED

With reference to the European Taxonomy for environmentally sustainable activities, introduced with Regulation (EU) 2020/852, in 2022 the LU-VE Group took a closer look at the impacts of the Group's business in the creation of sustainable value at global level and identified its quota of "eligible activities" and "aligned activities" compliant with the criteria of the Taxonomy.

The analysis of the activities was carried out in line with regulatory requirements while also taking into consideration the clarifying interpretations supplied by the European Commission in the form of Q&A in December 2021 and in February and December 2022. It should

be noted that in carrying out the analysis and preparation activities of the disclosures relating to the Taxonomy, top management adopted an overall prudential approach based on its understanding and interpretation, at the current state of knowledge, of the applicable regulatory requirements.

In particular, with respect to the lists of economic activities contained in Annexes 1 and 2 of Delegated Regulation (EU) 2021/2139, the following economic activities were classified as eligible with respect to the "Climate Change Mitigation" objective.

ECONOMIC ACTIVITIES OF LU-VE GROUP	ENVIRONMENTALLY SUSTAINABLE ACTIVITIES OF EUROPEAN TAXONOMY
<i>Heat exchangers with high energy efficiency</i>	3.5) Manufacture of energy efficiency equipment for buildings
<i>Products using CO₂ as a refrigerant fluid</i>	3.6) Manufacture of other low carbon technologies
<i>Products using other natural refrigerant fluids (hydrocarbons, ammonia, glycol water)</i>	3.6) Manufacture of other low carbon technologies
<i>Dedicated solutions for renewable energy production plants</i>	4.17) Cogeneration of heat/cool and power from solar energy
<i>Transport by motorbikes, cars and light commercial vehicles</i>	6.5) Transport by motorbikes, passenger cars and commercial vehicles
<i>Installation of renewable energy technologies</i>	7.6) Installation, maintenance and repair of renewable energy technologies
<i>R&D team and laboratory</i>	9.2) Close to market research, development and innovation

The tables below provide details of the turnover, CAPEX and OPEX KPIs, i.e. the percentage generated by eligible and aligned activities in accordance with indications in Annex 2 to the Regulation.

During 2022, the LU-VE Group undertook a series of actions to meet the technical screening criteria required to be able to consider its economic activities not only eligible but also aligned with the requirements set by the Taxonomy. These criteria, among other things, prescribe the presence of a third-party carbon footprint certificate in accordance with international ISO standards.

Specifically, in 2022 the LU-VE Group conducted a **Life Cycle Assessment study** on a specific range of air cooled products, which accounted for 1.4% of its turnover for the year in question. The carbon footprint was calculated for the entire life cycle (from raw material procurement, to manufacture of the solution, its use and end of life cycle management) and has been certified by a third party in accordance with ISO 14067. The results of this analysis have shown how a product using natural refrigerant fluid and a high efficiency motor, which accounted for 0.7% of its turnover for the year in question, throughout its entire life cycle, generates over 30% less climate altering emissions compared to an equivalent using traditional fluids and a low efficiency motor.

Over the coming years the Group expects a gradual extension of the product certifications and/or environmental declarations, in line with the Taxonomy criteria. This activity will require systematisation of the analysis process and will gradually be performed on various Group product ranges whose impact on turnover is considerable.

ably fragmented.

During 2022, the Group also further studied the criteria linked to the management of chemical substances (relative to the “Do No Significant Harm” – DNSH criterion) and began a series of assessments to establish how to manage and trace – on a voluntary and proactive basis – specific substances whose traceability is not required at regulatory level.

At the time of writing of this NFS, the Group concluded that not all the technical screening criteria required by the Regulation are currently met and that, consequently, the activities identified as “eligible” cannot be considered “aligned”.

The KPIs for the financial year 2022 were then determined, based on the indications in Annex 1 to the EU Delegated Regulation 2021/2178. Refer to the methodological note for further information on the calculation methodology.

It should be noted that the methods for determining and quantifying the indicators could change over the next few periods in relation to the expected publication of the technical reference regulations for the additional environmental objectives defined in Article 9 of the Regulation, as well as further developments in the interpretation of the regulations, which could therefore lead to substantial changes in the assessments and the process of calculating the KPIs for the next reporting year. Therefore, LU-VE Group reserves the possibility to update and modify, even substantially, the indicator calculation process and method in order to ensure their correct alignment with European legislation.



Proportion of **turnover** from products or services associated with Taxonomy-aligned economic activities – disclosure covering year 2022

				Substantial contribution criteria							DNSH Criteria "Do Not Significant Harm"											
	CODE/S	ABSOLUTE TURNOVER	PROPORTION OF TURNOVER	CLIMATE CHANGE MITIGATION	CLIMATE CHANGE ADAPTATION	WATER AND MARINE RESOURCES	CIRCULAR ECONOMY	POLLUTION	BIODIVERSITY AND ECOSYSTEMS	CLIMATE CHANGE MITIGATION	CLIMATE CHANGE ADAPTATION	WATER AND MARINE RESOURCES	CIRCULAR ECONOMY	POLLUTION	BIODIVERSITY AND ECOSYSTEMS	MINIMUM SAFEGUARDS	TAXONOMY ALIGNED PROPORTION OF TURNOVER, YEAR N	TAXONOMY ALIGNED PROPORTION OF TURNOVER, YEAR N - 1	CATEGORY (ENABLING ACTIVITY)	CATEGORY (TRANSITIONAL ACTIVITY)		
ECONOMIC ACTIVITIES		currency k euro	%	%	%	%	%	%	%	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Percentage	Percentage	E	T		
A. TAXONOMY-ELIGIBLE ACTIVITIES																						
A.1 Environmentally sustainable activities (Taxonomy-aligned)																						
Turnover of environmentally sustainable activities (Taxonomy-aligned) (A.1)		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0%	0%	-	-		
A.2 Taxonomy-eligible but not environmentally sustainable activities (not Taxonomy-aligned activities)																						
Manufacture of other low carbon technologies	3.6	290,728	48.1%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Manufacture of energy efficiency equipment for buildings	3.5	14,098	2.3%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Cogeneration of heat/cool and power from solar energy	4.17	1,716	0.3%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Turnover of Taxonomy-eligible but not environmentally sustainable activities (not Taxonomy-aligned activities) (A.2)		306,542	50.7%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Total (A.1 + A.2)		306,542	50.7%																			
B. TAXONOMY-NON-ELIGIBLE ACTIVITIES																						
Turnover of Taxonomy-non-eligible activities (B)		298,458	49.3%																			
Total (A+B)		605,000	100%																			

Proportion of **CapEx** from products or services associated with Taxonomy-aligned economic activities – disclosure covering year 2022

				Substantial contribution criteria					DNSH Criteria "Do Not Significant Harm"													
	CODES	ABSOLUTE TURNOVER	PROPORTION OF TURNOVER	CLIMATE CHANGE MITIGATION	CLIMATE CHANGE ADAPTATION	WATER AND MARINE RESOURCES	CIRCULAR ECONOMY	POLLUTION	BIODIVERSITY AND ECOSYSTEMS	CLIMATE CHANGE MITIGATION	CLIMATE CHANGE ADAPTATION	WATER AND MARINE RESOURCES	CIRCULAR ECONOMY	POLLUTION	BIODIVERSITY AND ECOSYSTEMS	MINIMUM SAFEGUARDS	TAXONOMY ALIGNED PROPORTION OF CAPEX, YEAR N	TAXONOMY ALIGNED PROPORTION OF CAPEX, YEAR N - 1	CATEGORY (ENABLING ACTIVITY)	CATEGORY (TRANSITIONAL ACTIVITY)		
ECONOMIC ACTIVITIES		currency k euro	%	%	%	%	%	%	%	V/N	V/N	V/N	V/N	V/N	V/N	V/N	Percentage	Percentage	E	T		
A. TAXONOMY-ELIGIBLE ACTIVITIES																						
A.1 Environmentally sustainable activities (Taxonomy-aligned)																						
CapEx of environmentally sustainable activities (Taxonomy-aligned) (A.1)		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0%	0%	-	-		
A.2 Taxonomy-eligible but not environmentally sustainable activities (not Taxonomy-aligned activities)																						
Manufacture of other low carbon technologies	3.6	13,398	33.1%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Manufacture of energy efficiency equipment for buildings	3.5	631	1.6%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Transport by motorbikes, passenger cars and commercial vehicles	6.5	873	2.2%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Close to market research, development and innovation	9.2	147	0.4%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Cogeneration of heat/cool and power from solar energy	4.17	50	0.1%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
CapEx of Taxonomy-eligible but not environmentally sustainable activities (not Taxonomy-aligned activities) (A.2)		15,098	37.3%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Total (A.1 + A.2)		15,098	37.3%																			
B. TAXONOMY-NON-ELIGIBLE ACTIVITIES																						
CapEx of Taxonomy-non-eligible activities (B)		25,418	62.7%																			
Total (A+B)		40,516	100%																			

Proportion of **OpEx** from products or services associated with Taxonomy-aligned economic activities – disclosure covering year 2022

			Substantial contribution criteria										DNSH Criteria "Do Not Significant Harm"							
	CODES	ABSOLUTE TURNOVER	PROPORTION OF TURNOVER	CLIMATE CHANGE MITIGATION	CLIMATE CHANGE ADAPTATION	WATER AND MARINE RESOURCES	CIRCULAR ECONOMY	POLLUTION	BIODIVERSITY AND ECOSYSTEMS	CLIMATE CHANGE MITIGATION	CLIMATE CHANGE ADAPTATION	WATER AND MARINE RESOURCES	CIRCULAR ECONOMY	POLLUTION	BIODIVERSITY AND ECOSYSTEMS	MINIMUM SAFEGUARDS	TAXONOMY ALIGNED PROPORTION OF OPEX, YEAR N	TAXONOMY ALIGNED PROPORTION OF OPEX, YEAR N - 1	CATEGORY (ENABLING ACTIVITY)	CATEGORY (TRANSITIONAL ACTIVITY)
ECONOMIC ACTIVITIES		currency k. euro	%	%	%	%	%	%	%	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Percentage	Percentage	E	T
A. TAXONOMY-ELIGIBLE ACTIVITIES																				
A.1 Environmentally sustainable activities (Taxonomy-aligned)																				
OpEx of environmentally sustainable activities (Taxonomy-aligned) (A.1)		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0%	0%	-	-
A.2 Taxonomy-eligible but not environmentally sustainable activities (not Taxonomy-aligned activities)																				
Manufacture of other low carbon technologies	3.6	4,154	49.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Manufacture of energy efficiency equipment for buildings	3.5	196	2.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Close to market research, development and innovation	9.2	46	0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Installation, maintenance and repair of renewable energy technologies	7.6	16	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
OpEx of Taxonomy-eligible but not environmentally sustainable activities (not Taxonomy-aligned activities) (A.2)		4,411	52.1%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total (A.1 + A.2)		4,411	52.1%																	
B. TAXONOMY-NON-ELIGIBLE ACTIVITIES																				
OpEx of Taxonomy-non-eligible activities (B)		4,051	47.9%																	
Total (A+B)		8,462	100%																	

In particular, it should be noted that for the item turnover, the Group had already begun to assess the share of turnover relating to equipment using natural refrigerants (equal to 52.7% in 2021) as part of the financing required in previous years. Keeping the calculation criteria

in line with those applied in the past, the percentage of exchangers with natural refrigerants in 2022 would have been equal to 54.8%.

THE VALUE GENERATED AND DISTRIBUTED

Looking at the economic distribution of the value generated by the LU-VE Group during 2022, the economic

value generated by the Group is equal to €650 million. This value is increased by 19% compared to 2021.

DIRECT ECONOMIC VALUE GENERATED AND DISTRIBUTED (IN THOUSANDS OF €)			
	2020	2021	2022
Economic value generated	403,623	545,684	650,615
Revenues and operating income	401,457	492,008	618,612
Financial income	2,165	1,746	2,080
Change in inventories	0	51,930	20,450
Economic value distributed	363,682	496,882	592,604
Operating costs	257,491	374,699	437,903
Value distributed to employees	91,684	106,683	125,552
Value distributed to capital providers	2,418	2,252	9,188
Value distributed to public administration	5,208	6,718	11,630
Value distributed to shareholders	6,521	6,466	8,222
Value distributed to the community	360	63	110
Economic value retained	39,941	48,802	58,011

For better representation, at 31 December 2022 the item "Fair value change of derivatives" as a non-monetary component, was reported under "Economic value retained", rather than between financial income/value

distributed to capital providers. The figures for previous years have therefore been reclassified in line with 2022.



TAX STRATEGY

In line with the principles outlined in its Code of Ethics, the LU-VE Group acts according to values of honesty, lawfulness and fairness when managing tax matters. The Group constantly monitors compliance with applicable tax legislation, acting responsibly in the jurisdictions in which it operates, in accordance with the principle by which the contribution resulting from taxes paid is a key channel for contributing to the economic and social development of countries and communities.

The Group's Administration and Finance department is responsible for managing tax matters. The Group has not defined a formal tax strategy or policy at Group level, and individual companies operate in compliance with local tax regulations. Local Finance Managers are responsible for tax compliance, which is overseen by the Group's Administration and Finance department.

Tax risks are analysed and handled in accordance with

the overall Enterprise Risk Management business model. Corporate whistleblowing channels may also be used to report any critical issues relating to unethical or illegal conduct and to the organisation's integrity in tax matters.

To date, the Group has not received any requests from its stakeholders with regard to tax issues. Should any such requests be received, they will be dealt with by the company departments in charge of tax compliance.

Relations with tax authorities are based on principles of fairness and compliance with the different regulations applied in the countries where the Group operates. It should be noted that the Group does not carry out tax advocacy activities.

Reporting by tax jurisdiction in the 2022 period is shown below⁹.

⁹ The economic/financial data reported are audited by an auditing firm. Regarding any differences between the income tax accrued on profits and the tax due (GRI 207-4-b-x), please refer to the Notes to the Consolidated Financial Statements of LU-VE Group as at 31 December 2022.



COUNTRY	COMPANY	P/C ¹⁰	REVENUES - THIRD PARTIES	REVENUES - GROUP	NUMBER OF EMPLOYEES	PROPERTY, PLANT AND EQUIPMENT	PRE-TAX PROFIT (LOSS)	INCOME TAXES PAID	INCOME TAXES ACCRUED
			€/000	€/000	N	€/000	€/000	€/000	€/000
Italy	LU-VE S.p.A.	P							
	SEST S.p.A.	P							
	THERMO GLASS DOOR S.p.A.	P							
	MANIFOLD S.r.l.	P							
	LUVEDIGITAL S.r.l.	P							
	AIR HEX ALONTE S.r.l.	P							
	Refrion S.r.l.	P							
	RMS S.r.l.	P							
TOTAL Italy			201,612	55,284	1,283	76,353	24,678	441	5
Austria	LU-VE Austria GmbH	C	0	371	2	13	43	-	12
Finland	FINCOIL LU-VE OY	P	41,189	1,941	133	4,820	2,035	9	399
France	LU-VE France S.a.r.l.	C	18,215	265	9	291	460	200	115
Germany	LU-VE Deutschland GmbH	C							
	Refrion Deutschland GmbH	C							
TOTALE Germany			4,380	559	15	114	(259)	-	-
Netherlands	LU-VE Netherlands B.V.	C	4,193	1,226	13	269	370	-	73
Poland	SEST LU-VE POLSKA Sp.z.o.o	P	112,508	23,139	944	50,677	21,372	58	1,831
United Kingdom	LU-VE UK LTD	C	-	-	1	-	(1)	-	-
Chez Rep.	HEAT TRANSFER SYSTEMS (HTS) s.r.o	P	70,220	1,892	452	13,464	8,727	1,344	1,574
Spagna	LU-VE IBERICA S.L.	C	14,430	55	11	337	822	134	206
Sweden	LU-VE Sweden AB	P	19,721	288	56	1,942	918	74	266
China	LU-VE HEAT EXCHANGERS (TIANMEN) Co. Ltd	P	16,255	636	67	2,190	2,265	448	603
South Korea	LU-VE South Korea LLC	C	-	118	1	-	(1)	-	1
Hong Kong	LU-VE Asia Pacific Ltd	C	-	-	-	-	2,486	-	316
India	SPIROTECH HEAT EXCHANGERS Private Limited	P	57,856	332	553	15,984	4,860	425	1,582
United Arab Emirates	LU-VE Middle East DMCC	C	-	697	5	115	59	-	-
Russia	"000" SEST LU-VE	P							
	"000" LU-VE Moscow	C							
TOTAL Russia			35,437	2,047	363	6,215	7,106	2,538	1,206
USA	Zyklus Heat Transfer, Inc.	P	22,596	3	150	12,928	(3,542)	-	40
Consolidation adjustments				(88,853)		3,552	(13,370)		1,741
LU-VE Group			618,612	-	4,058	189,264	59,036	5,671	9,971

¹⁰ Company type: P production company; C sales company.

SUSTAINABILITY LOANS

During 2022, the Group obtained loans for a total value of € 210 million, of which € 130 million (approximately 62% of the total) with improved conditions for the Group on achieving specific ESG goals.

The securing of these loans acknowledges the Group's capacity to launch projects over time to improve its environmental, social and governance sustainability performance.

~62% ESG loans, out of the total loans obtained in 2022

Loan			Improved interest rate		Bank
Goal	€ disbursed	Maturity	conditions on achieving the following ESG goals	rate	
Initiatives for growth of the Group in Italy and abroad with particular reference to capex loans in Poland, Czech Republic, Sweden, USA and Finland, as envisaged in the 2022-2023 Capex Plan	40 mln	2029	Y	5% increase in the workforce in Italy (from the second year)	Cassa Depositi e Prestiti
New projects for the creation of new product ranges that use natural refrigerant fluids	15 mln	2029	E/G	Achievement of sustainability goals as part of procurement policies	Intesa Sanpaolo
New projects for the design and development of CO ₂ equipment with reduced environmental impact	15 mln	2029		Share of reduced environmental impact vehicles introduced into the company car pool, greater than 8%	
Support for company cash flow	15 mln	2027			
Projects with a positive impact in terms of environmental sustainability in the following contexts: renewable energy, energy efficiency, mass and public transport, water management and treatment and recycling	40 mln	2027	E	Reduction of the impact of Freon products on total turnover of at least 2% compared to the previous year 100% energy from renewable sources, only for the Uboldo Plant	Banca Nazionale del Lavoro
Reduction of total greenhouse gas emissions generated by the Group	€5 mln, out of a total of €25 mln	2027	E	Reduction of climate altering gases by 2% per year	Banca Popolare di Milano

“There is no work, there is no capital that does not begin with an act of intelligence”

(Carlo Cattaneo — philosopher, political scientist, linguist and writer)





ADVANCED WORLD

Ideas and passion for a cooler world

ADVANCED WORLD

Ideas and passion for a cooler world



3.235 m²

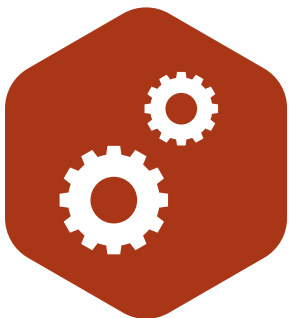
Among the sector's largest R&D laboratories in Europe



€ 1,5 million

invested in Research and Development¹¹

for new technologies and experimental studies mainly relating to the development of natural refrigeration solutions, with high energy efficiency and reduced use of refrigeration fluids



7 training sessions

on refrigeration and energy efficiency within the context of the LU-VE Academy

¹¹ In addition to this value, there are a number of other research expenses that are not capitalised, in line with international accounting standards, but are expensed in the profit and loss account for each year. In 2022, this value was approximately €250,000.



”

Protecting the environment is our duty

We owe it to our generation, but above all to future generations. We see this as a fixed point, an essential principle, not a point of arrival but one of departure”

Stefano Filippini, R&D Director LU-VE Group

LU-VE performance are certified

**SUSTAINABLE COMMITMENT
NOT CERTIFIED?**



THIS IS WHAT YOU GET!

POWER NOT CERTIFIED?



THIS IS WHAT YOU GET!

**SOUND PRESSURE
LEVEL NOT CERTIFIED?**



THIS IS WHAT YOU GET!

2.1 We are Eurovent certified

“When you buy a product with uncertified performance, you increase energy consumption, harm the planet and damage the community”

Iginio Liberali – LU-VE Group Founder

For over 20 years, LU-VE Group has been a voluntary adopter of the Eurovent certification programme, the European association for heating, ventilation, air conditioning, process cooling and food cold chain technology.

In 2022, the LU-VE Group's entire range of evaporators and CO₂ gas coolers was also Eurovent certified.

- **2022: LU-VE is the first company in the world with Eurovent certification for CO₂ gas coolers** (thermal performance, energy consumption, air flow and noise levels) with brands LU-VE Exchangers and Alfa LU-VE.
- **2020:** LU-VE was among the very first companies to obtain **Eurovent certification for CO₂ unit coolers** (thermal performance, energy consumption and air flow rate) with brands LU-VE Exchangers and AIA LU-VE; since 2022 with brand Alfa LU-VE too.
- **2016:** LU-VE was the first manufacturer that Eurovent certified for their heat exchangers for refrigeration, **never registering a single negative test** during three different test cycles (between 2011 and 2015).
- **2000:** LU-VE was the **first company in the world** to obtain the new “Eurovent Certify All” certification for all the ranges of condensers, dry coolers and unit coolers.

In 2022, the founder of the LU-VE Group Iginio Liberali received the “Legends of Eurovent” prize for his commitment to promoting the importance of performance certification.

Why it is important to be certified

The Group believes that subjecting its products to testing and checks by a recognised third party entity such as Eurovent, enables tangible, accurate and transparent monitoring of the product's performance, and to ensure reliable solutions to its business partners and end users in terms of energy efficiency and quality of the preserved product.

The “Eurovent Certified Performance” (ECP) certificate verifies the compliance of the products in accordance with specific standards related to the product's performance in terms of power, air flow, energy consumption, sound emissions and construction specifications.

A certified product will ensure that during operation it will comply with the performance parameters defined at design stage, while a product that does not perform well will force the system to compensate for this shortcoming by consuming more energy.

Recognition of the value of this voluntary certification and choice of transparency is an important factor in choosing the Group as a business partner.



Why certified products?

Fully reliable performance:

- NO system inefficiency
- NO higher operating costs
- NO higher indirect CO₂ emissions

Certified products never lie!



R&D

STATE-OF-THE-ART R&D LABORATORIES

LU-VE Group has four R&D laboratories, in Uboldo (Varese, Italy), Alonte (Vicenza, Italy), Flumignano di Talmassons (Udine, Italy) and Vantaa (Finland). The R&D laboratory in Uboldo is at the forefront in Europe in terms of size and competence, as it is one of the few in the world capable of conducting performance tests on appliances that use CO₂ as a refrigerant fluid.

The laboratory has an area dedicated to the thermodynamic design of heat exchangers: the heart of the Group's products. A second section is reserved for experimental design, where medium and long-term research is conducted in collaboration with the Polytechnic Institute of Milan and other universities and scientific centres. Lastly, the laboratory has an area specifically dedicated to CFD - *Computational Fluid Dynamics*, which studies and analyses fluid-dynamic phenomena and heat exchange processes. The Group's R&D laboratories were the first in the sector to use this technology applied to the study of thermo-fluid dynamic processes in heat exchangers.

The use of CFD codes applied to finned exchangers has enabled a better understanding of fluid-dynamic phenomena and heat transfer processes. As a result, it has been possible to further increase the already very high exchange characteristics of the different geometries used, continuously renewing the layers of air in contact with the specialised fins and increasing the turbulence generated by the latter. The greater uniformity of the air flow obtained thanks to the design of the air cooler fins allows less humidity to be deposited on the fins and therefore less frost formation, reducing dehumidification. The results of the CFD analysis have been accurately confirmed by experimental tests.

For design purposes, the laboratory uses software specially developed by the Group and calibrated using data from the laboratory.

LU-VE Group faces a moderate risk resulting from the inability to offer technologically innovative products in line with market trends. Although a potential source of damage in terms of competitiveness and failure to generate positive impacts, this risk is unlikely thanks to the Group's innovative capacity, its significant investments in R&D and also to the market's recognition of its role as a front runner.



2.2 Pushing for change

The design, research and development activities are led by the Technical Department and are conducted taking product performance and quality into consideration, besides respecting and safeguarding resources and the environment and maximising energy efficiency, in accordance with the European ErP Directive - Energy-related Products.

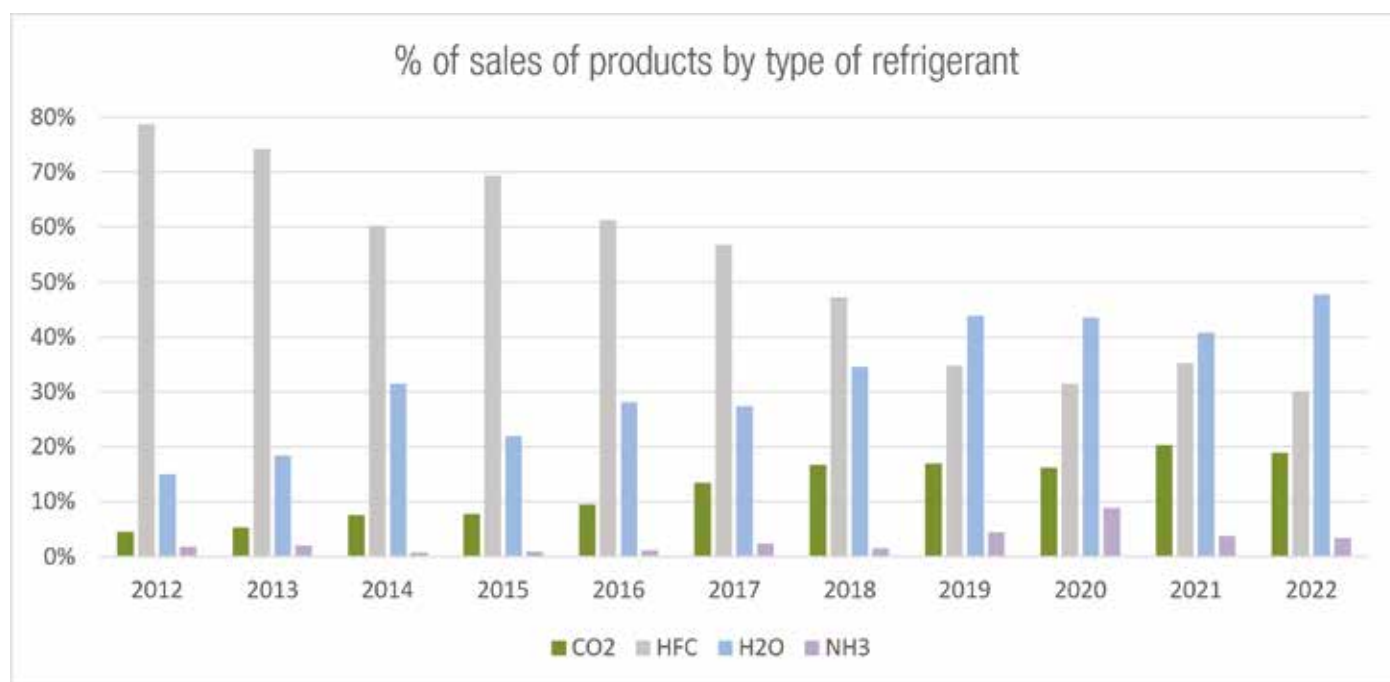
Over the course of 2022, the LU-VE Group also carried out a new Life Cycle Assessment study on a specific range of products to calculate their carbon footprint throughout the entire life cycle, from raw material procurement to manufacturing of the solution, its use and end of life cycle management.

In more specific terms the range was compared to assess the actual emission impact in relation to various parameters, including the user of specific refrigerant fluids and motor types.

SUSTAINABLE REFRIGERANT FLUIDS

Over time, the refrigeration industry has identified refrigerants that are increasingly sustainable: such as CO₂, ammonia (NH₃), propane (R290) and water (H₂O) – that boast a low Global Warming Potential (GWP) and Ozone Depletion Potential (ODP)¹².

In 2022, the LU-VE Group recorded an increase in turnover connected to products that use natural refrigerant fluids, compared to traditional fluids (HFC).

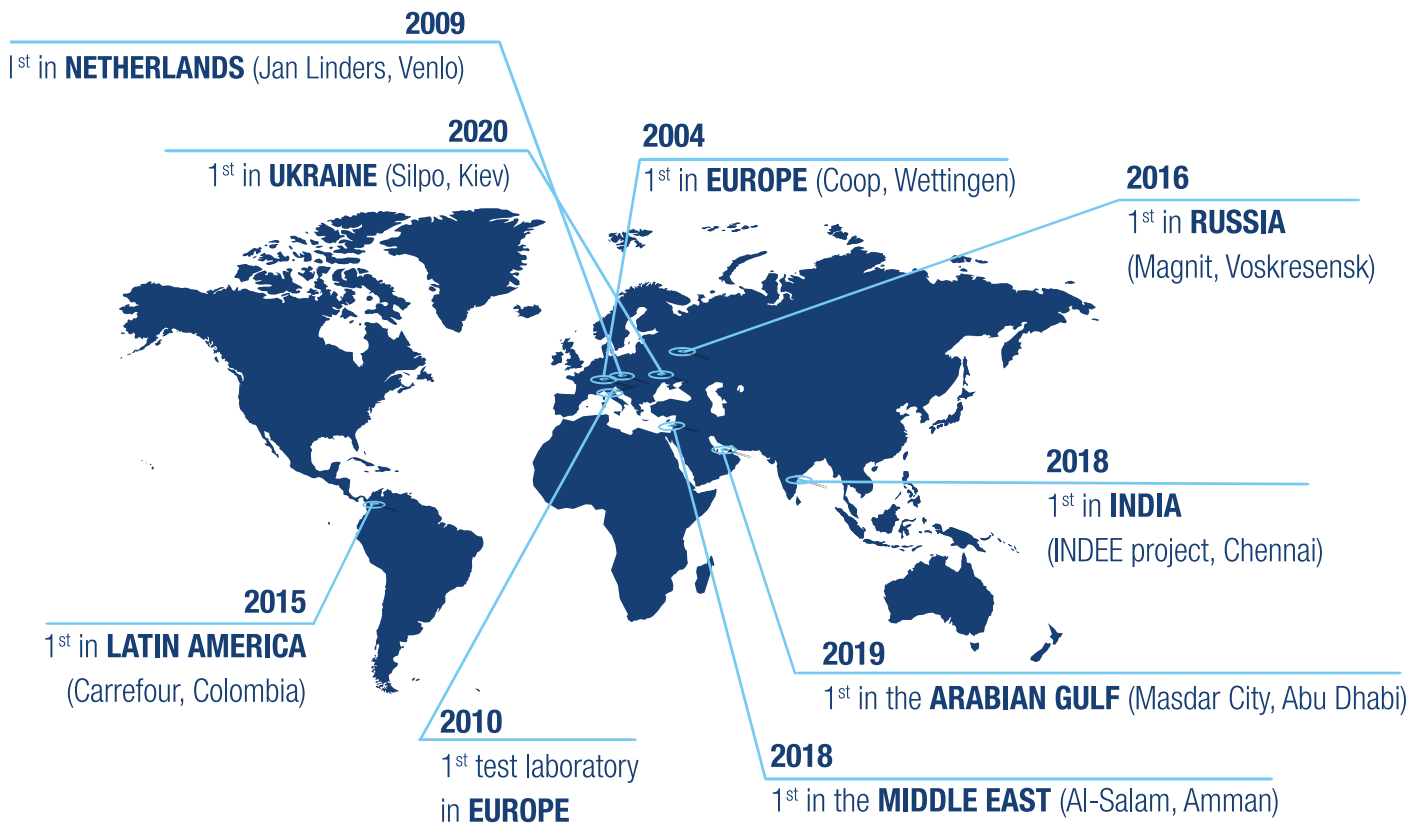


For the air cooled product ranges, from 2012 to 2022 the share of sales of HFC (hydrofluorocarbon) solutions in total turnover fell from 79% to 30%. At the same time, there was strong growth in CO₂ applications, with the proportion of turnover rising to 19%, compared to 4% in 2012.

Given the strategic importance of the evolution of these products, LU-VE Group plans to extend this analysis to

the entire product portfolio at global level, with the ultimate aim of measuring their evolution over time and supporting strategic and commercial policies to maximise the positive impact generated by these applications.

¹² The Global Warming Potential expresses the contribution of the gas to the greenhouse effect, while the Ozone Depletion Potential expresses the value of ozone layer degradation that it can cause.



LU-VE GROUP FOR CO₂

Through research projects on new refrigerants, LU-VE Group has had a track record of highly successful CO₂ installations in Europe, Latin America, the Middle East and Asia from 1986 to the present.

The first transcritical CO₂ system in Europe was manufactured and installed in Switzerland in 2004, in Wettlingen (Coop Tägipark).

Then in 2018 a new challenge began to move the “CO₂ equator” and make this technology efficient in countries where it was not previously possible. Two pilot systems are in operation in India (INDEE Project at the ITT - Indian Institute of Technology Madras in Chennai) and in Amman, Jordan, where one of the most advanced CO₂ refrigeration systems for supermarkets in the region is in operation, as part of a project developed by the United Nations Industrial Development Organization (UNIDO), with the support of the Jordanian Ministry of the Environment.

The first system was installed in Ukraine in 2020 for a supermarket (Silpo, in Kyiv, Ukraine) with zero environmental impact, equipped with heat pumps, solar energy and a high-efficiency carbon dioxide cooling system.

LU-VE GROUP for A2L FLUIDS

In 2022, the Group continued exploring the applications of refrigerant fluids classified as A2L, low flammability (ISO 817:2014 Refrigerants - Designation and safety classification) and with an overall reduced environmental impact in terms of GWP (Global Warming Potential).

LU-VE Group has introduced a new dedicated series of commercial evaporators specifically designed for these fluids. To ensure safe use, an in-depth risk analysis has been carried out and a specific design methodology has been developed, also with the help of expert Notified Bodies.

Scenario I Sustainable refrigerant fluids

At international level, there is a gradual shift towards sustainable refrigerant fluids, which are replacing traditional refrigerant fluids (or hydrofluorocarbons - HFC).

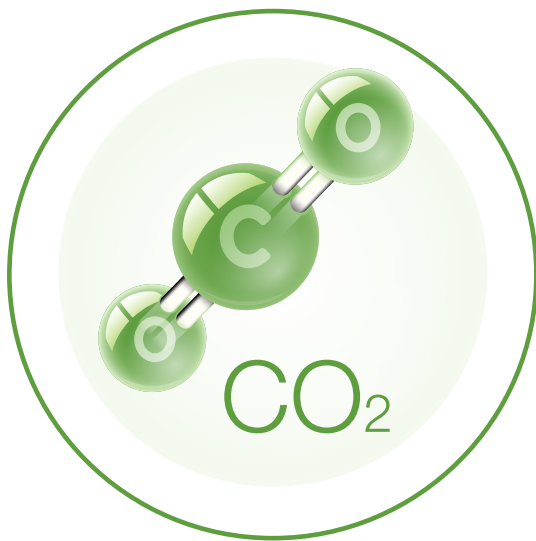
The commitment to the gradual reduction of the greenhouse effect caused by these fluids is defined by the Kigali Amendment (2016) to the Montreal Protocol (operational instrument of UNEP, (the United Nations Environment Programme), for the implementation of the Vienna Convention for the Protection of the Ozone Layer, ratified by more than 170 countries. In 2022, the US Senate also expressed its opinion in favour of ratification of the Kigali Amendment.

At European level, the F-Gas Regulation also requires the total quantity of the most important F-gases sold in the EU to be reduced by up to one fifth of 2014 sales by 2030, and foresees a reduction of emissions from F-gases by two thirds compared to 2014 levels by 2030. The European Commission is currently reviewing the F-Gas Regulation with a view to introducing even stricter regulations.

In this context, natural refrigerant fluids, together with the new A2L fluids, represent an important tool for the achievement of environmental commitments, as they are characterised by zero ODP and low or zero GWP.



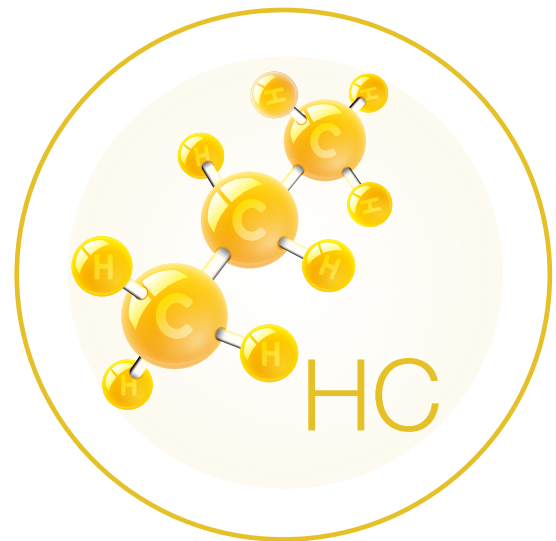
NATURAL REFRIGERATION FLUIDS



CO₂ is a fluid that guarantees high levels of system safety thanks to its non-toxic and non-flammable characteristics, factors which enable its use in unlimited quantities.

Moreover, CO₂ is characterised by high thermodynamic performance at medium and low temperatures and low production costs compared to other refrigerant gases. The main system considerations for its application as a refrigerant fluid are the high operational pressures of the fluid and its inefficiency in the presence of high external temperatures.

The most common applications are in large-scale retail outlets, followed to a small extent by industrial sites and commercial applications. In September 2022, there were 57,000 transcritical CO₂ installations in Europe, a growth of 42.5% compared to the previous year¹³.



Hydrocarbons (HC), such as propane are characterised by physical properties that enable their use in a vast range of applications.

However, problems such as flammability currently limit the use of hydrocarbons in small-scale refrigeration systems. In line with other natural refrigerants, hydrocarbons have also increased significantly in recent years. The applications are diverse in this case, too: from small cooling units to vaccine storage and heat pumps for domestic and industrial use

¹³ Natural Refrigerants: State of the industry (2022 Edition) www.r744.com - <https://r744.com/atmosphere-estimates-55000-stores-using-transcritical-co2-in-europe/>





Ammonia (NH₃) is another high performance refrigerant fluid, which is toxic to humans, however, and highly flammable, characteristics that limit its usage volume in many countries. Usually used in large refrigeration units, ammonia is the highest performing natural fluid but also requires various system adjustments and the introduction of technologies to minimise volumes. For this reason, the number of “low charge” systems with reduced quantities of ammonia has grown in recent years.



Water and glycol water are often used for refrigeration and conditioning and in industrial processes as a heat carrier fluid. Systems of this type typically consist of a machine that produces chilled water through a refrigeration cycle (chiller) and a chilled water distribution system.

The main advantages of water and glycol systems over direct expansion systems are easier installation and better control of cell humidity. Another important advantage of this type of system is the reduction in the amount of refrigerant used in the system, with important benefits for the environment.

A drycooler is often used in this type of system, which is a heat exchanger that allows the water temperature to be reduced, increasing system efficiency using a chiller, or which allows the chiller (free-cooling) to be replaced altogether if the ambient temperatures are low enough.



RELAX!

We've taken care of **A2L**



Commercial unit cooler range
TOP SAFETY for A2L applications



THE "NEW" A2L FLUIDS

A2L fluids (slightly flammable) are an alternative to natural fluids and they feature a low global warming potential (GWP). Averagely, A2L fluids (R454A, R454C, R455A, R457A) have a global warming potential (GWP) between 140 and 240, significantly lower than most traditional HFC fluids characterised by values even higher than 3,900 (R404A, R407C, R410A).



PRODUCTS WITH EFFICIENT MOTORS

Fans with electronic EC motors are one of the major innovations of recent years and mark an important step in the direction of achieving ventilated heat exchangers with improved efficiency and minimum energy input for ventilation. This has significant advantages from the point of view of reducing the energy consumption of refrigeration systems.

Axial EC fans are the result of joint development between LU-VE Group and the German manufacturer EBM-Papst. LU-VE premièred them to the world at the IKK trade fair in 2002 and they have been gaining market share ever since.

In 2022, the Group celebrated the twentieth anniversary of the launch of its first product equipped with low energy consumption EC electronic motors, replacing the traditional asynchronous (AC) motors.

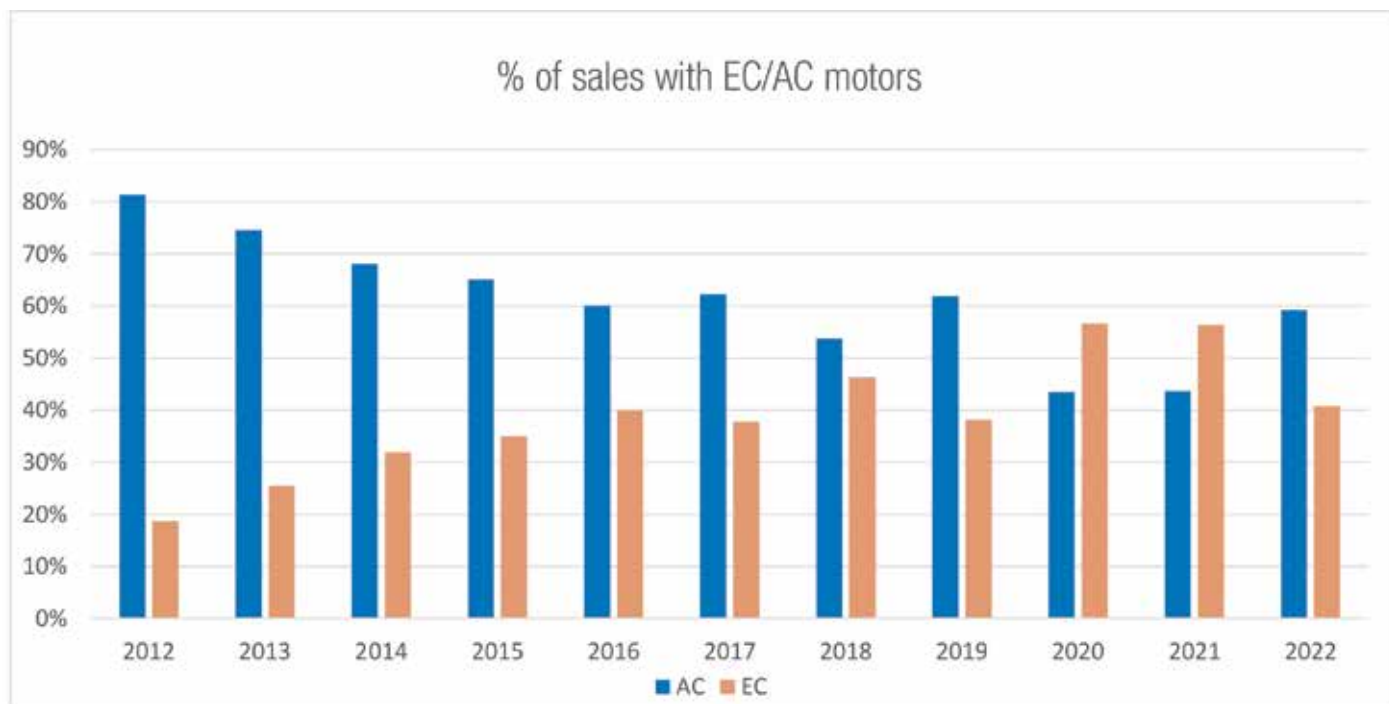
Unlike conventional asynchronous AC motors (in which the rotor has one coil), EC motors (Electronically Commuted or Electronically Controlled) have permanent ma-

gnets which, together with the current in the stator coil, generate torque on the rotor without dissipating energy. As a direct consequence, the efficiency of the electronic motor is higher.

Looking at the type of motor used, which has a direct impact on the energy consumption of the product in use, the Group has over the years increased the use of electronic EC motors, which are more efficient than traditional asynchronous AC motors.

Compared to 2012, taking into consideration overall sales, the use of AC motors has dropped from 81% to 59%, up compared to the 44% recorded in 2021 owing to the contingent lack of electronic components found in EC motors that has forced the market to opt for AC motors (that do not contain these components).

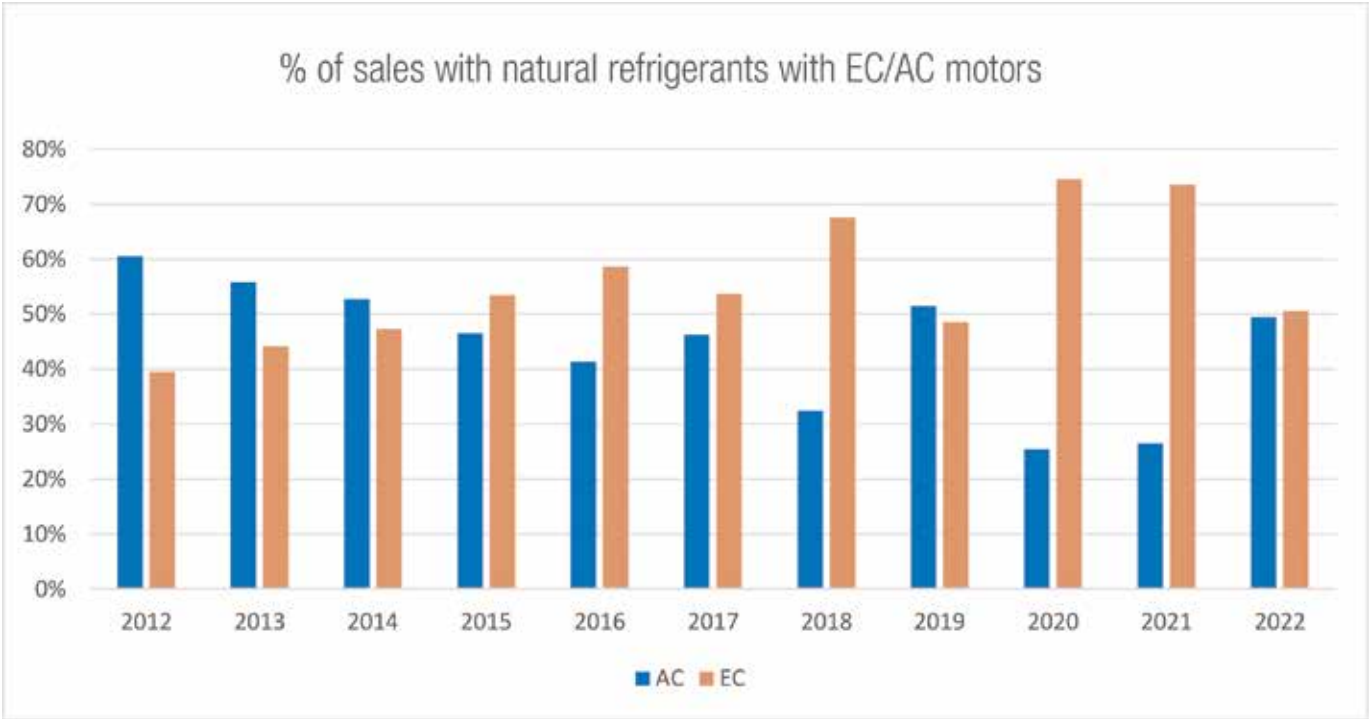
In this context, in 2022 EC motors accounted for 41% of total sales of air cooled products.



Regarding the marketing of solutions using natural refrigerant fluids, compared to 2012 the use of AC motors dropped from 61% to 49%, up compared to the 26% recorded in 2021 owing to the lack of electronic components found in EC motors as described above. The opposite trend applies to EC motors, which in 2022 accounted for 51% of air cooled product sales using

natural refrigerant fluids.

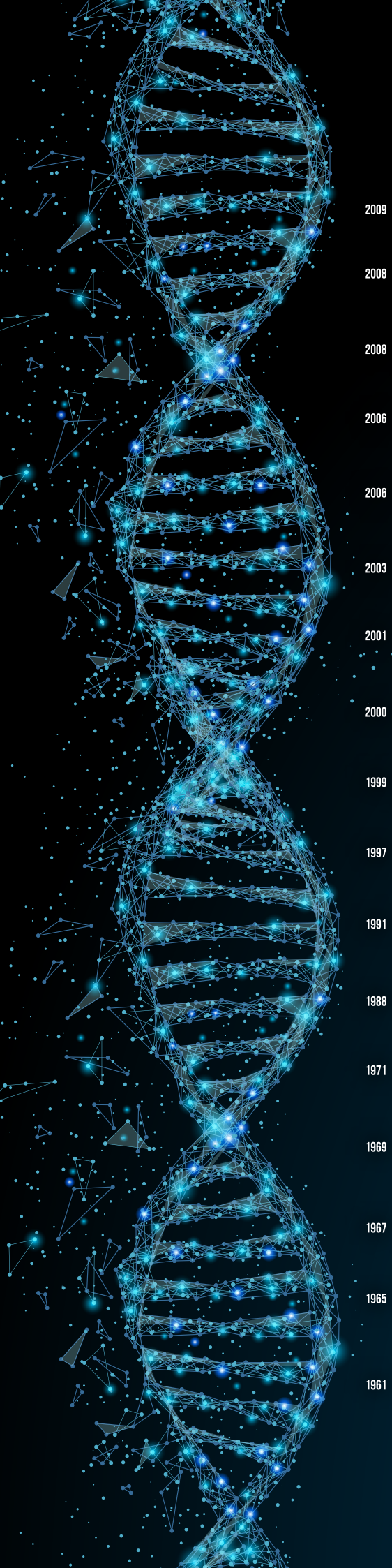
It should be noted that the 2019 figure is anomalous due to the change in the analysis scope relating to the acquisition of Fincoil and Air Hex Alonte during that year.





Innovation is in our DNA

2022	Helios	CO2 gas cooler equipped with photovoltaic panels
2022	4 mm tube	Heat exchanger with 4mm diameter tube
2021	Igea	Antibacterial photocatalytic filter for dual discharge unit coolers
2021	Mirabilia	High-transparency doors
2019	R-Fin	Reinforced fin with high corrosion resistance
2019	Image	Digitally animated mirror for collective spaces
2019	Magic Vision	Glass door with a high resolution transparent screen for commercial refrigerators and freezers
2018	Armonia	Industrial unit coolers with low ammonia charge
2018	Gateway	IoT technology for "Magic Mirrors"
2016	Nidea	Intelligent and efficient electric defrosting system
2016	Emeritus	Combined adiabatic solution to maximize outdoor machine performance
2015	Zero Energy Glass	Energy Free glass for freezers
2015	The Whisperer plus	Compact high performance silencer 2.0
2014	Plug&save	Integrated solution for unit coolers with expansion valve and controller
2012	Minichannel	Reduced refrigerant charge condensers
2011	Lt 0Energy door	High energy saving doors
2010	The Whisperer	Compact high performance silencer
2009	BLS Titan door	Titan model door with LEDs integrated in the double glazing to illuminate the product



2009	LAS door	Doors with luminous text and logos integrated in the glass
2008	BLS door	Door with LEDs integrated in the double glazing to illuminate the product
2008	Jetstreamer	Innovative aerodynamic grill to increase air throw
2006	Dry and spray	Advanced adiabatic solution to maximize outdoor machine performance
2006	Smart system	Patented structure for greater rigidity of outdoor machines
2003	Wet and dry	Advanced adiabatic solution to maximize outdoor machine performance
2001	Jet-o-matic	Innovative distributor for direct expansion evaporators
2000	Water spray system	Combined adiabatic solution to maximize outdoor machine performance
1999	Safetubes System	Coil suspension system
1997	Superhitec unit coolers	Unit coolers with louvered fins and tubes with internal helicoidal grooving 2.0
1991	Hitec condensers	Condensers with louvered fins and tubes with internal helicoidal grooves
1988	Hitec unit coolers with Turbocoil	Unit coolers with louvered fins and tubes with internal helicoidal grooves
1971	STF	Tubeless steel condensers
1969	Alupaint	Pre-painted aluminum fins for high corrosion resistance
1967	Internal and external turbo-system	Heat exchangers with special louvered fins and tubes with internal helicoidal grooves
1965	Dual fin spacing	Differentiated fin pitch
1961	Electric defrosting	Fin pack defrosting by electric heaters

* Innovations prior to the founding year of LU-VE (1985) refer to Contardo

2.3 New solutions and new applications

THE 2022 SOLUTIONS

HELIOS



In 2022, the new **CO₂ gas cooler with solar panels** was introduced in collaboration with the Laboratory of Energy Conversion and Storage (LabX) of Milan Polytechnic.

The project aims to reduce energy consumption in developed countries and offer off-grid solutions in countries with underdeveloped electricity grids. The system is made up of an optimised number of photovoltaic panels, inverters and energy storage batteries.

The study has shown that the combined use of high efficiency coolers and photovoltaic panels reduces the energy consumption of the heat exchanger by over 50%. Further benefits are guaranteed by the use of CO₂: low GWP (Global Warming Potential) and zero ODP (Ozone Depletion Potential).

E-COOLER²



The **E-Cooler² range**, under the Refrion label, has been introduced for data centre and industrial cooling. These **dry coolers** optimise the benefits resulting from adiabatic saturation of the air by adopting a water recycling system and electronic commutation air coolers. The water and energy consumption is reduced to a minimum, with a resulting maximisation of the energy ratio.

The possibility of expanding the drycooler upwards reduces the required surface area by half for the same thermal capacity.



EVOLUTION OF THE 2022 APPLICATIONS

DECARBONISATION AND HEAT PUMPS



At international level, technological solutions are being sought and adopted to achieve the goal of zero “net carbon emissions”.

In this context, heat pump systems can be a good technological solution, as they allow heat to be extracted from a natural source (air, water or ground) and make it available at the desired temperature. At the same time, **heat pumps also allow recovery of the residual heat generated by the refrigeration systems**, which can then be used for heating to increase the system’s efficiency.

In this context, the LU-VE Group has designed and engineered special products to make the best use of heat sources for heat pumps for district heating as well as for residential use: thus supporting this market which in 2022 recorded a strong growth and even greater development expectations.

More specifically, the pioneering approach adopted by the LU-VE Group has enabled it to be at the forefront in the production of heat exchangers with natural refrigerant fluids, in partnership with the most well-known market players, as well as boasting the broadest range of configurations so that it can cater for the entire range of power ratings required on air/water application, both for the monoblock and split configurations, so for both internal and external applications.

HEAT PUMPS FOR DISTRICT HEATING



During 2022, the LU-VE Group presented a study to assess different technological solutions for district heating.

While ammonia is one of the most common choices, the LU-VE Group, along with other major partners, is considering the possibility of CO₂ as a working fluid in this application.

The experimental campaign conducted in 2021 on a variety of aerodynamic layouts of a plant in Denmark has contributed to the development of a new configuration of coolers capable of **reducing the energy consumption of the heat exchanger by up to 21%**.

The software simulations, well-aligned with real data, show the importance of considering frost formation in the design of heat exchangers for this kind of application. The impact on air flow and thermal capacity cannot be overlooked, and the same can be said of the repercussions on the seasonal performance coefficient of the plant.

The full results were presented during the 2022 edition of the “Gustav Lorenzen” international conference, the most important conference on natural refrigerant fluids.

HEAT PUMPS FOR RESIDENTIAL USE



In recent years, the LU-VE Group has focused its R&D activities on seeking solutions capable of further **reducing the load of specific refrigerant fluids for the use of R290** when presenting the 4mm diameter tube at Chillventa 2022, the most authoritative international trade fair in terms of natural fluids.

This innovation, proposed after years of laboratory research, along with the most modern high-performance surface treatments to be applied to the heating unit, endows LU-VE Group products with the highest performance in terms of both yield and sustainability.

In detail, the specific volumetric power exchanged, i.e. the Kw/volume ratio inside the 4mm diameter tube, is considerably greater (up to 40% in specific conditions relative to the heat pump segment) compared to the 5mm diameter tube, which the Group had previously pioneered, with obvious benefits such as reduction of the refrigerant load which, with the use of surface treatments and a greater ratio of secondary to primary surface area, means that the defrosting frequency and duration can be reduced

ZERO-IMPACT HEATING



In 2022, the collaboration between LU-VE Group and Triple Solar BV continued for the development of the PVT heat pump panel solution for recovering energy. This development is enjoying great market success in the world of air conditioning, for summer and winter comfort with zero environmental impact.

A new design for the heat exchanger for PVT panels was developed in 2022 to optimise material consumption, manufacture and ease of assembly of the final product.

Co-designed with LU-VE Group, the exchanger – developed with a modular design and therefore applicable on systems of any capacity, the exchanger operates as a primary exchanger in the external section of a water-to-water heat pump and is installed underneath the solar panels, recovering the heat they disperse during the production of electricity from solar rays. The materials, configuration and circuitry of the heat exchanger are optimised to operate at **maximum efficiency in all environments and at all latitudes.**



During 2022, the LU-VE Group supplied a set of air cooled Fincoil FBL radiators for a multinational company that develops innovative technological solutions for the energy sector. These solutions have proven functional in building the **new power station in Dresden (Germany), designed to support the country's energy transition.**

The heat exchangers supplied were designed to achieve an optimised exchange of thermal energy between air and fluid with low noise levels. Thanks to the combination of key design variables (coil materials, coil geometry, casing design, type of fan), the solutions enable a great deal of flexibility and the possibility of applications in a number of different sectors.



Again in 2022, the LU-VE Group supported its partners in the development of “free-cooling” projects, capable of cooling a liquid, gas or solid element, in the refrigeration unit with compressors off, even when the outside air temperature is positive. This is achieved because when the external air temperature is lower than the system's return flow, the free-cooling system recovers cold air from the outside environment and transfers it to the processing water through the dedicated exchanger.

This solution is particularly suited for applications where the refrigeration power required remains constant and is not dependent on outside air: a case in point are data centres, where electricity consumption is expected to increase by fifteen times by 2030 (Source: Andrae, T. Elder, On Global Electricity Usage of Communication Technology: Trends to 2030, Challenges, 2015).

The LU-VE Group is also engaged in further optimisation during the development stage: the dedicated free-cooling heat exchanger and the refrigerant version are united in a single heat exchanger **to minimise their use of materials and dimensions, thus also reducing the emissions linked to transportation.** Moreover, the LU-VE Group contributes to the study and use of refrigerants with minimal or zero GWP to further reduce the environmental impact.

GLASS DOORS



The LU-VE Group Line Up BT 2020 project was designed to satisfy the need of manufacturers of commercial refrigeration units to certify the energy performance of the unit.

In particular, the new European regulation on energy labelling, introduced in March 2021 (see “Regulation (EU) 2019/2015 on energy labelling of light sources”, that integrates the provisions of Framework Regulation (EU) 2017/1369 and was meant to replace Regulation (EU) 874/2012 from 1 September 2021), has assigned great importance to the glass surface that increases the certification value the greater the surface area.

This being the case, the design work has focused on reducing the perimeter profiles of the doors to a minimum with a resulting increase in the glass surface, achieving excellent performance levels **without the need for additional energy either for the door frame or the door.**

REFRIGERATED AND CONDITIONED TRANSPORT



Regulatory developments and the demand for low environmental impact solutions have had a considerable effect on the market for refrigerated and air conditioned transport (road and rail).

The trend in the **refrigerated transport** sector is to electrify cold air production, disengaging it from the vehicle engine, and therefore from fossil fuels, to shift towards other energy sources.

The LU-VE Group has developed state-of-the-art solutions for evaporators and condensers. The use of inner-grooved tubes in aluminium (instead of copper) is beneficial in terms of costs and ease of end of life cycle recycling (single material). The miniaturisation of the tubes also offers additional advantages (cost reduction, weight reduction, size and load of refrigerant fluid). All of which while maintaining product performance constant, essential for a correct and long-lasting preservation of food products.

Where **vehicle air conditioning** is concerned, on the other hand, the trend seems to favour the use of natural refrigerants (propane R290 and CO₂).

Although a natural refrigerant of reference has not yet staked its claim for these specific markets, the LU-VE Group is in a position to support its partners with optimised solutions for both fluids and is also capable of guaranteeing the utmost product safety in cases of special requirements.

2.4 Working together on innovation

The LU-VE Group has engaged in several partnerships with universities and research institutes to bolster its studies and innovation processes.

Since its foundation, the Group has collaborated or is collaborating with around 30 Italian and international universities and research institutes on three continents. It has closely collaborated with the Polytechnic Institute of Milan since 1986.

PARTNER	PROJECT
Milan Polytechnic (Italy)	Heat exchange research activities Research activities with the Food Sustainability Observatory ¹⁴
Brno University of Technology (Czech Republic)	Development of new exchanger families
Danish Technological Institute (Denmark)	Experimentation on ammonia evaporators and heat pumps for district heating
Delft University of Technology (Netherlands)	Experiments on geothermal systems
Experimental Glass Station in Murano (Italy)	Thermal insulation performance of insulated glazing
Norwegian University of Science and Technology (Norway)	Experimental research activities into the application of CO ₂ technologies in countries with tropical climates
Aalto University (Finland)	Research activities on energy efficiency and heat pump technology combined with district heating systems
LUT University (Finland)	Research activities on energy efficiency and heat pump technology combined with district heating systems

¹⁴ The research activity with the Food Sustainability Observatory is discussed in depth in the first chapter in relation to the social impacts of LU-VE Group solutions



Additionally, during 2022 partnerships were set up with the Ca' Foscari University (Venice) and the IULM University in Milan regarding two Master courses linked to sustainability issues; in this way the Group makes its own contribution to promoting both the culture of sustainable environmental redevelopment and the measurement of sustainability performance.

During 2022, the Group gave several technical presentations in different languages covering topics of central interest to the industry, such as natural refrigerant fluids and A2L refrigerants, in relation to GWP benefits.

CONFERENCES AND PRESENTATIONS

Event	LU-VE speech title	Topics
Gustav Lorenzen Conference (Trondheim - Norway)	Design optimization of NH3 evaporators for heat pumps in district heating	NH ₃ , heat pumps, district heating
Specialist forums 2022, organised by Eurovent, at Chillventa (Nuremberg, Germany)	R-744 unit: the future of heat exchangers, moderated by Stefano Filippini as Chairman di Eurovent – Heat Exchangers	CO ₂
New technology in light of the latest F-Gas revision proposal, organised by Centro Studi Galileo, at Chillventa (Nuremberg, Germany)	Technical and economical consequences of the use of CO ₂ gas coolers with less than their claimed nominal performance	CO ₂ , gas coolers
DKV Conference (Magdeburg - Germany)	Design optimization of NH3 evaporators for heat pumps in district heating	NH ₃ , heat pumps, district heating
New F-Gas, Flammable Refrigerants and Heat Pumps: what can we expect in 2023? Organised by Galileo Study Centre	Heat exchangers for flammable refrigerants	A2L
From F-Gas Regulation to alternative refrigerants: impact on new and existing systems, organised by Centro Studi Galileo	High glide refrigerants: impact on heat exchangers	Heat exchangers, high glide refrigerants
Efficient and Safe Systems Using A2L Refrigerants Organised by Centro Studi Galileo	Heat exchangers for flammable refrigerants - Conformity of the product	A2L



EASYGO PROJECT FOR GEOTHERMAL SYSTEMS

The LU-VE Group's collaboration in the EasyGO project continues. The project was created with the aim of disseminating and improving the technologies, efficiency and sustainability of geothermal systems, with a focus on both electricity production and *Heating, Ventilation and Air Conditioning (HVAC)*.

The collaboration includes four universities - TU Delft (Netherlands), ETH Zürich (Switzerland), RWTH Aachen (Germany) and Milan Polytechnic (Italy), as well as a dozen companies, each with specific expertise in the field. EasyGo began in 2020 as part of the Horizon 2020 programme funded by the European Union with a €3.4 million fund and a duration of four years.

Each year a *Training Week* is organised with the involvement of all the project players, where the developments achieved by each in their respective field of research can be shared, as well as following training and dissemination activities held by lecturers called upon to take part in the programme, identified among the top experts in Europe on the development of these issues. The EASYGO project will continue in 2023, with the third *Training Week*.



EASYGO

Efficiency and Safety
in **Geothermal Operations**



European
Commission

Horizon 2020
European Union funding
for Research & Innovation

PLAIR FOR PRODUCT CONFIGURATION

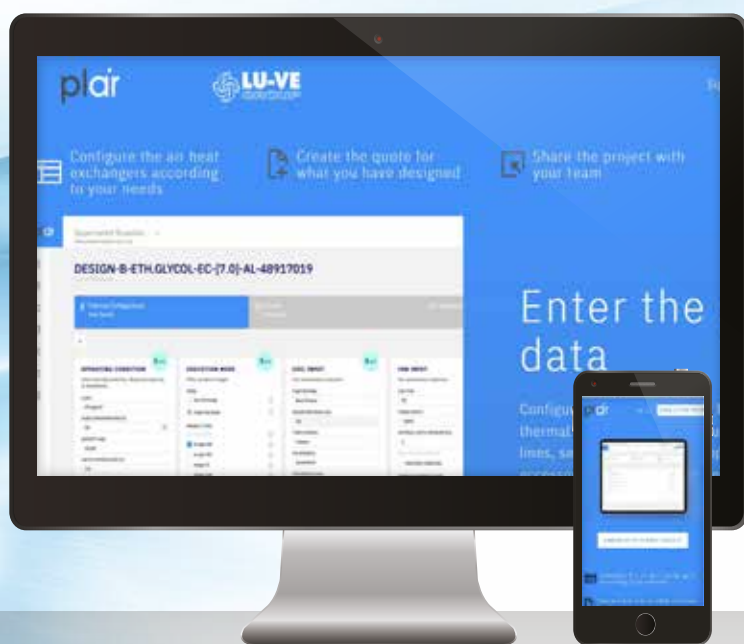
During 2022, the LU-VE Group launched Plair, an online configuration tool for all LU-VE Group air cooled products.

The tool was introduced to support the market with an online service developed with latest generation platforms, taking into account the requirements of those operating in the design and construction of HVAC&R systems.

The air cooled products can be selected and configured based on the system and operating requirements. The performance levels declared by the tool are certified according to the Eurovent programme, guaranteeing their reliability in terms of energy efficiency during use.



plair



The **free** and **collaborative**
application
to configure air heat exchangers



Configure
Quote
Share

www.plair.it

QUALITY



QUALITY CONTROL

All LU-VE Group products are tested before being introduced into the market. The controls are performed through end of line tests designed to guarantee mechanical resistance, airtightness and the correct operation of the products and their components. All the equipment is designed, manufactured and identified in compliance with Directive 2014/68/EU (PED). For the air cooled, insulated glazing product categories, manufactured in Italy, the Group conducts health and safety impact assessments. Specifically, risk assessments are carried out relating to electrical safety, and further safety testing is conducted in accordance with European directives, such as the “Machinery Directive 2006/42/EC”, applicable to all machinery introduced to the European market.

Once the product planning and development phase is complete, the Planning, Research and Development Department produces a detailed guide (Installation and Maintenance Manual) that contains the technical specifications and instructions for the correct use of the solution. The document contains information on the possible presence of substances potentially harmful to the environment, on the safety of the product and how to dispose of it, and on environmental impacts, in accordance with applicable regulations. Customers have constant access to the Customer Services department of the Sales division for any subsequent maintenance requirements or requests for assistance.

Thanks to its partnerships with many suppliers, the Group is able to eliminate the majority of manufacturing defects, including those defined as “concealed”, or which cannot be identified during the manufacturing and testing phase.

The recurrence of product defect events has historically been very limited, with a percentage impact considered natural for the business segment. During 2022, the incidence of returns was consolidated within the context of the current information management systems to improve traceability and consistency. In 2022, the incidence of returns was confirmed at 0.10% on both gross and net revenues.¹⁵ In cases in which product defects are identified, the Group company involved agrees on corrective actions to be taken with the customer and if necessary activates the insurance taken out to cover that eventuality.

¹⁵ The following companies were not included in these considerations: SPIROTECH, LU-VE HEAT EXCHANGERS (TIANMEN) Co. Ltd, LU-VE SWEDEN AB, REFRION



*“The universe is change:
life is how our thoughts create it”*

(Marco Aurelio — Roman emperor, philosopher and writer)





BETTER WORLD

Live and work in better places

BETTER WORLD

Live and work in better places



4.000 +

Employees, of which more than 1,200 in Italy



~ 40.000

Training hours provided in one year



70

Employees trained on the climate crisis and sustainability





”

The human factor is fundamental for growth

The company conceived as a place the purpose of which is related to the creation of values: safety for those working there and well-being for those using our products and components.

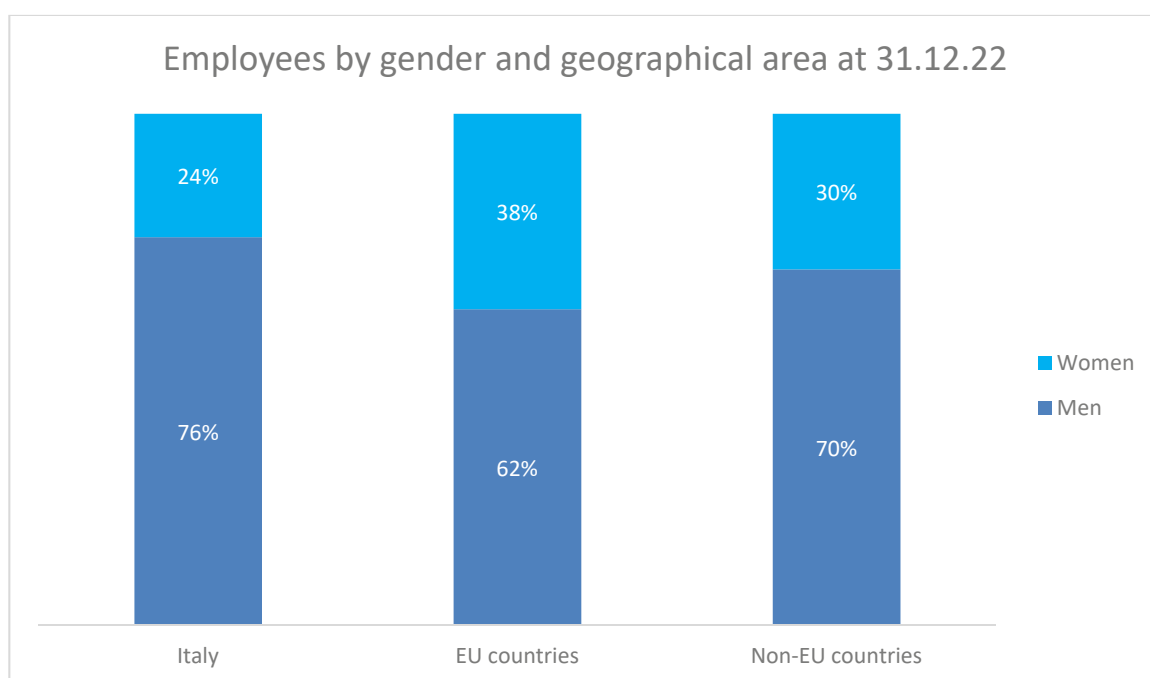
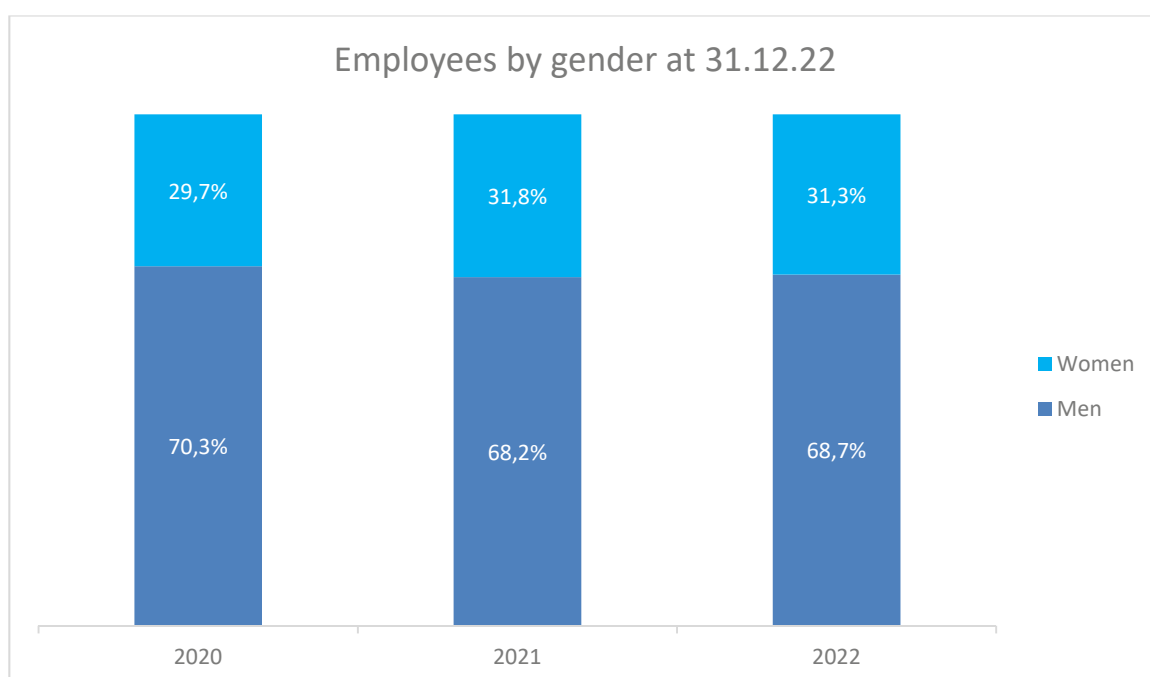
Companies are first and foremost “women, men and ideas”.

Iginio Liberali, LU-VE Group Founder

3.1 The LU-VE Group Family

As at 31 December 2022, LU-VE Group had a workforce of 4,058, of which 3,325 are employees. There is also a significant labour workforce which includes workers from staffing companies and outsourced activities.

Of the employee population, around 31% are women. The gender difference is mainly due to the characteristics of the engineering industry which, especially in the past, mainly attracted men.



EMPLOYEES BY PROFESSIONAL CATEGORY AND GENDER			
	2020	2021	2022
Executives	1%	1%	1%
Men	97%	97%	94%
Women	3%	3%	6%
Middle managers and white collar workers	31%	30%	31%
Men	68%	66%	67%
Women	32%	34%	33%
Blue collar workers	68%	69%	68%
Men	71%	69%	69%
Women	29%	31%	31%

In 2022, the percentage of Group employees under the age of 30 was 20%.

EMPLOYEES BY PROFESSIONAL CATEGORY AND AGE			
	2020	2021	2022
Executives	1%	1%	1%
Under 30 years of age	0%	0%	0%
Between 30 and 50	38%	39%	41%
Over 50	63%	61%	59%
Middle managers and white collar workers	31%	30%	31%
Under 30	16%	18%	17%
Between 30 and 50	66%	64%	63%
Over 50	18%	18%	20%
Blue collar workers	68%	69%	68%
Under 30	21%	23%	22%
Between 30 and 50	58%	56%	56%
Over 50	21%	21%	22%
Total			
Under 30	19%	21%	20%
Between 30 and 50	60%	58%	58%
Over 50	21%	21%	22%

Considering the incoming and outgoing turnover, during 2022, 638 collaborations with employees were dismissed while the number of persons hired amounted

to 923.

The departures also included the employees of Tecnair LV S.p.A, a company that was sold last year.

NUMBER OF NEW HIRES AND DEPARTURES BY GENDER

	New Hires			Departures		
	2020	2021	2022	2020	2021	2022
Men	316	454	631	228	297	424
Women	132	326	292	109	166	214
Total	448	780	923	337	463	638

NUMBER OF NEW HIRES AND DEPARTURES BY AGE

Under 30	154	324	337	97	142	207
Between 30 and 50	260	369	434	183	232	306
Over 50	34	87	152	57	89	125
Total	448	780	923	337	463	638

NUMBER OF NEW HIRES AND DEPARTURES BY GEOGRAPHICAL AREA

Italy	42	121	313	54	73	157
EU countries	232	278	335	145	179	243
Non-EU countries	174	381	275	138	211	238
Total	448	780	923	337	463	638



At the end of 2022, there was a positive difference between the incoming and outgoing turnover rate, in line with the Group's expansion process: the incoming

turnover rate increased from 25.7 in 2021 to 27.8 in 2022, also due to changes in the reporting perimeter during the year.

INCOMING AND OUTGOING TURNOVER RATE BY GENDER						
	Incoming turnover rate			Outgoing turnover rate		
	2020	2021	2022	2020	2021	2022
Men	16.5%	21.9%	28%	11.9%	14.3%	19%
Women	16.3%	33.7%	28%	13.5%	17.2%	21%
Total	16.5%	25.7%	27.8%	12.4%	15.2%	19.2%
INCOMING AND OUTGOING TURNOVER RATE BY AGE						
Under 30	29.7%	50.5%	49.6%	18.7%	22.2%	30.5%
Between 30 and 50	15.8%	20.8%	22.5%	11.2%	13.1%	15.9%
Over 50	6.0%	13.9%	21.1%	10.1%	14.3%	17.3%
Total	16.5%	25.7%	27.8%	12.4%	15.2%	19.2%
INCOMING AND OUTGOING TURNOVER RATE BY GEOGRAPHICAL AREA						
Italy	4.3%	11.8%	26.5%	5.5%	7.1%	13.3%
EU countries	20.1%	22.2%	24.9%	12.6%	14.3%	18.1%
Non-EU countries	29.3%	49.9%	34.4%	23.3%	27.7%	29.8%
Total	16.5%	25.7%	27.8%	12.4%	15.2%	19.2%

In the updated assessment of non-financial risks, the possible loss of company know-how due to the departure of strategic company figures, the difficulty of finding suitable human resources on the market and low levels of employee engagement emerged as a moderate risk.

In order to reduce this risk, the Group promotes medium-term management identification and skills development projects for its resources.



When considering the type of contracts stipulated with employees, in 2022, 85% had a long-term

contract, while the remaining 15% were on fixed term contracts.

EMPLOYEES BY TYPE OF CONTRACT AND GENDER						
	Permanent contract			Fixed term contract ¹⁶		
	2020	2021	2022	2020	2021	2022
Men	86%	86%	88%	14%	14%	12%
Women	84%	77%	79%	16%	23%	21%
Total	86%	83%	85%	14%	17%	15%

EMPLOYEES BY CONTRACT TYPE AND GEOGRAPHICAL AREA						
	Permanent contract			Fixed term contract		
	2020	2021	2022	2020	2021	2022
Italy	99%	97%	98%	1%	3%	2%
EU countries	76%	78%	75%	24%	22%	25%
Non-EU countries	82%	73%	81%	18%	27%	19%
Total	86%	83%	85%	14%	17%	15%

NUMBER OF EMPLOYEES BY EMPLOYMENT TYPE AND GENDER						
	Full-time			Part-time		
	2020	2021	2022	2020	2021	2022
Men	100%	99%	99%	0%	1%	1%
Women	92%	93%	93%	8%	7%	7%
Total	97%	97%	97%	3%	3%	3%

¹⁶ The "fixed term contracts" also include 2 Group employees included in the "occasional worker" category.

TOWARDS A ZERO GAP SOCIETY

During 2022, the LU-VE Group embarked on a project to study the gender gaps among the various Group companies.

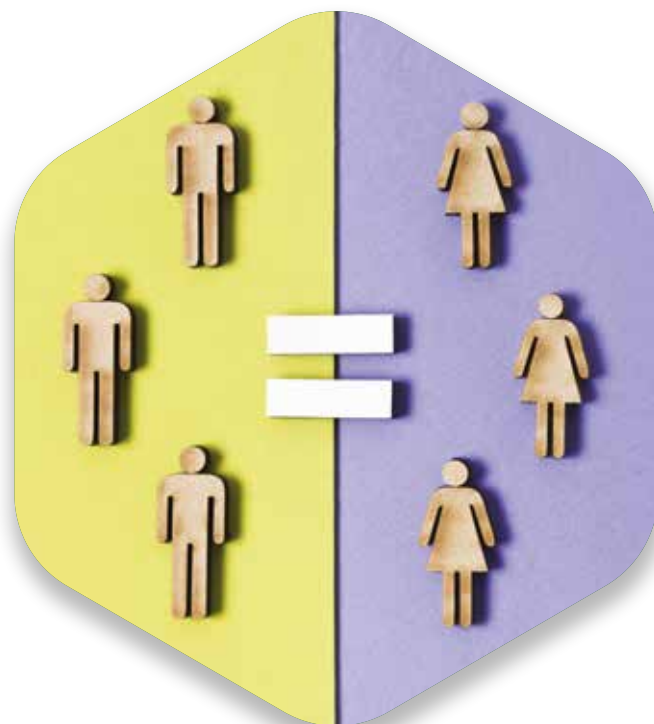
The analysis performed, in addition to the presence of women in managerial and executive roles, also analysed any pay gaps in all roles and positions. The areas identified were then included in an action plan headed by the Group's HR Department.

The remuneration indices, shown in the specific table, were calculated for each company by adding the basic salary and the total remuneration of each employee, as indicated in the methodological note, dividing it by the number of employees in each professional category and gender. When the ratio index equals 100, then there is parity between men and women in the basic salary and total remuneration.

It should be noted that the table includes highly varying professional categories and positions which, along with the different numbers of men and women, means data comparison is difficult. In particular, in the Indian com-

pany Spirotech, the women have very different functions from their male colleagues in the same category.

The risk of potential cases of discrimination, inequality or failure to respect equal opportunities has been assessed as moderate, and the Group is committed to keeping the indicators monitored.



RATIO BETWEEN BASIC SALARY OF WOMEN AND MEN (%)									
	Executives			Middle managers and white collar workers			Blue collar workers		
	2020	2021	2022	2020	2021	2022	2020	2021	2022
Italy	63.9	62.1	98.6	78.1	78.1	78.3	95.3	95.6	94.8
EU countries	-	-	-	72.5	67.9	69.1	68.8	71.0	74.2
Non-EU countries	-	-	-	112.0	96.7	99.1	124.2	120.9	112.5

RATIO BETWEEN TOTAL REMUNERATION OF WOMEN AND MEN (%)									
	Executives			Middle managers and white collar workers			Blue collar workers		
	2020	2021	2022	2020	2021	2022	2020	2021	2022
Italy	67.2	55.6	100.8	76.1	76.7	78	93.4	94.4	94.1
EU countries	-	-	-	71.8	67.0	68.7	71.6	74.0	78.4
Non-EU countries	-	-	-	105.2	90.6	93.4	114.2	110.6	98.2

RELATIONS WITH TRADE UNIONS

Constructive and collaborative relations with trade unions have been sought by the Group to support people and their needs. Formal health and safety agreements with trade unions are governed by the respective national laws of the countries in which the Group operates.

In **Italy**, 100% of employees are covered by the National Collective Labour Contract and formal health and safety agreements. Similarly, in **Sweden, Finland and Germany** there are collective agreements covering 100% of the company population, signed by employers and trade unions.

The other countries in which the Group operates do not envisage this type of collective bargaining.

In **China**, there are no agreements with trade unions in the field of occupational health and safety, but the local subsidiary signs an internal agreement with all employees involved in managing health and safety risk activities. Based on this, training is organised, the awareness of risks is raised and individual protective equipment is provided. The implementation of the agreement is monitored periodically, as are regular health checks.

Similarly, internal collaboration has been initiated in **Poland** to discuss these issues, and communication and discussion actions will be consolidated over the next few years.

In 2022, **industrial relations** continued in a spirit of cooperation. This enabled company agreements to be renewed, where present, and action, programmes and measures to sustain company objectives and the well-being of all workers to be shared.

HUMAN RIGHTS

RESPECT FOR HUMAN RIGHTS

Although LU-VE Group mainly operates in Europe, a region that is not considered at risk from a human rights protection perspective, the age of the employees hired at all of the Group's facilities is constantly monitored, and during the periodic internal audits performed by the Parent Company in all Italian and foreign facilities, any risks or cases of violation of human rights are investigated. The assessment activities carried out by the Group are supported by regular inspections and evaluations by its customers, some of whom belong to international groups which, like LU-VE Group, operate worldwide.

After updating the analysis of non-financial risks, the risks related to the inability to monitor, manage and resolve critical issues and complaints connected to the lack of respect for human rights are low, thanks to the activities carried out by LU-VE Group.

Cases of forced labour among employees is classified as a moderate risk with a high severity but low probability of occurrence due to the timely monitoring of the overall workload of employees.

The Group did not record any cases of violations of human rights regulations in 2022.

The different needs of employees and cultures enable the creation of corporate welfare packages, specifically tailored to the various Group companies. These are managed directly by the individual HR Managers and the various packages are monitored by the Human Resource Department at Group level. In addition to corporate welfare packages, the company supports its employees

and their families with special arrangements for leisure time and personal spending.

All Group employees have access to welfare systems, with the exception of some companies (LU-VE Tianmen, China; HTS, Czech Republic; Spirotech, India) which only provide benefits to full-time workers.

MAIN LU-VE GROUP BENEFITS (2022) -				
	Work-life balance	Promotion of healthy lifestyles	Support for workers' families	Healthcare ¹⁷
	(e.g. flexible working hours, incentives for commuters)	(e.g. gym subscription)	(e.g. scholarships)	
LU-VE S.p.A. (Italy)				
AIR HEX ALONTE S.r.l. (Italy)				
FINCOIL LU-VE OY (Finland)				
HEAT TRANSFER SYSTEMS (HTS) s.r.o. (Czech Republic)				
LU-VE HEAT EXCHANGERS (TIANMEN), Co. Ltd (China)				
LU-VE Sweden AB (Sweden)				
“OOO” SEST-LUVE (Russia)				
REFRION S.r.l and RMS S.r.l (Italy)				
SEST S.p.A. (Italy)				
SEST LUVE-POLSKA Sp.z.o.o. (Poland)				
SPIROTECH HEAT EXCHANGERS Private Limited (India)				
THERMO GLASS DOOR S.p.A. (Italy)				

¹⁷ Note that this benefit refers to healthcare facilities for employees that are not legally required in the contractual regulations in force in the respective countries.

3.2 Training and growth

Building a mutual relationship of trust is the path to be followed in pursuing business and professional growth for each Group employee.

Overall, 39,850 training hours were delivered by the Group to its employees in 2022, an increase of 12% compared to 2021.

AVERAGE HOURS OF TRAINING PER CAPITA			
	2020	2021	2022
Average hours of training per capita	10.02	11.75	12.00

AVERAGE HOURS OF TRAINING PER CAPITA BY EMPLOYEE GENDER AND PROFESSIONAL CATEGORY						
	Men			Women		
	2020	2021	2022	2020	2021	2022
Average hours of training per capita	10.8	11.4	13.0	8.3	12.6	9.8

	Executives			Middle managers and white collar workers			Blue collar workers		
	2020	2021	2022	2020	2021	2022	2020	2021	2022
Average hours of training per capita	14.5	17.8	18.8	17,3	18.4	20.2	6.6	8.8	8.2

In 2022 the project “**LU-VE Academy: training on refrigeration and on our products**” was launched. All technical and sales employees in the Group’s Italian offices and in some foreign branches were invited to take part in 7 training sessions on refrigeration and LU-VE Group products, with a particular focus on the issue of heat pumps and energy transition. Each session was held by nationally and internationally renowned **professors** and **sector experts**, allowing employees to acquire in-depth knowledge of key issues for the Group’s sector and business, with an eye on technological solutions, performance and future scenarios.

With a view to expanding and strengthening a **culture of sustainability**, in 2022 an additional four training sessions were organised for all the Group’s Italian Directors and executive managers. Thanks to these sessions they were able to develop a shared and informed cultural approach with specific focus on the climate crisis and the latest scientific developments highlighted by

the IPCC – Intergovernmental Panel on Climate Change and other international references.

During 2022, in collaboration with MIP, the School of Management of Milan Polytechnic, a course was held on the issue of cybersecurity for all LU-VE Group Directors. The training, also taking into account the more recent events on the international stage, was designed to provide an understanding of the importance of IT security by raising individual and organisational awareness of the issue and as a step towards digital transformation.

The usual ad hoc courses for specific corporate positions also continued, in particular to support individuals in new managerial roles in the company, also with a view to heightening awareness regarding issues of health, safety and the environment.

The inclusion and growth of employees in the Group are based on principles of transparency and equal opportu-

nity, from the beginning of the research and selection process, and continues with regular appraisals, made possible thanks to the implementation of a specific SAP Success Factor Module that involves all workers at Group level.

In 2021 a “Skills Development” process was launched, diversified depending on the job performed and the position held, that envisages the assessment and monitoring of skills relative to four sections: professional profile, professional skills, personal aptitudes and, solely for personnel involved in manufacturing activities,

operational skills. A total of 2,510 employees were assessed in the “Skills Development” process in 2021. The assessment process has therefore been reviewed and optimised: the next assessment is expected to take place in 2023.

The MBOs – Management By Objectives – are instead specific to director and managerial functions. The Group’s Human Resources Department developed the MBO system on the SAP SuccessFactors platform, providing 258 MBOs in 2022.

OUR INTERNAL COMMUNICATION: “ROSES & VALUES” AND WE.LUVE.IT

First introduced in 2019 in hard copy format, the “Roses & Values” Newsletter has evolved into a fully digital version in Italian and English (sent via e-mail and WhatsApp) and a blog (we.luve.it) for Group employees worldwide.

The three sections of we.luve.it deal with: news (corporate, products, trade fairs and events), interesting material from around the world (stories written by or about employees, recipes, travel), and service information. There is also a section on special arrangements to benefit employees, which at present is restricted to Italian facilities only. In 2022, the blog had nearly 19,000 users and almost 260,000 page views.



ROSES & VALUES



3.3 Focus on occupational health and safety

In order to support each resource in implementing the defined procedures and guidelines, employees must be provided adequate knowledge and a corporate culture must be created that recognises the value of operating in compliance with rules and risk prevention.

During 2022, the LU-VE Group continued to pursue the Make One (Sustainable) Company general objective, by increasing the sharing of management and control practices in the various plants, fostering lively collaboration between site HSE managers, working with central departments, with the ultimate goal of adopting the best HSE standards in the various plants and promoting continuous improvement for the entire LU-VE Group.

The intersite HSE internal audit work group performed the first HSE audit using the new structured method, further perfected during a second audit which also took place in 2022. Each Audit report contains all the comments made and all the suggestions/advice for decision-makers both at facility and Group level, to implement a constant improvement plan and a greater HSE integration at the facilities, adopting a maximised experience approach.

The HSE audits are carried out in collaboration between a central manager and an HSE resource from Uboldo on other Group sites (cross audits) which enable a valuable exchange of information both for the sites audited and the auditors. It is expected that such an important cross audit activity will be put into practice according to a programme to be officially announced in advance by all

facilities during the early months of 2023.

The structured Audit method was then increasingly perfected during the course of 2022 with the introduction of an **HSE Rating** that takes into account technical, organisational and risk management aspects (e.g. obtaining ISO 45001 certification for the occupational health and safety management). The adoption of this Rating at the various facilities will allow assessment of the differences between the sites and develop targeted actions, representing the basis for the package of indicators (HSE KPIs) that the Group intends to make available to the different facilities, to receive consistent and comparable data centrally and thus improve the Group's investment strategies.

In 2022, the Crisis Committee (known as the "Coronavirus Crisis Unit") set up by the Group's top management in March 2020 as a measure to counter the Covid-19 pandemic remained active. The Committee is made up of: Chief Executive Officers, executives tasked with Group responsibilities, some managers from production companies (including the foreign companies in Poland, Russia and the Czech Republic), plant managers and Health & Safety Officers of the Italian group companies, and the head of the Group's Internal Audit function. Participation in the Crisis Committee was also open to the Directors and Statutory Auditors of LU-VE S.p.A., as well as the Chairman of the Parent Company's Supervisory Board.

As for the standard health and safety indices, the data recorded in 2022 is shown below.

ACCIDENT INDICES AND DATA 2020-2022¹⁸

	2020	2021	2022
Total number of work related injuries	37	34	33
Commuting accidents ¹⁹	5	3	0
Total number of high-consequence work-related injuries ²⁰	-	2	2
Rate of work-related injuries ²¹	8.51	6.69	6.10
Rate of high-consequence work-related injuries ²²	-	0.39	0.37
Severity rate ²³	219.18	235.76	265.63
Hours worked	4,347,949	5,085,600	5,413,563

During 2022, two high-consequence work-related injuries were recorded, both in the Czech plant, due to low attention of operators and not correct respect of existing procedures. In order to minimize the risks, it has been strengthened the training and the awareness of employees.

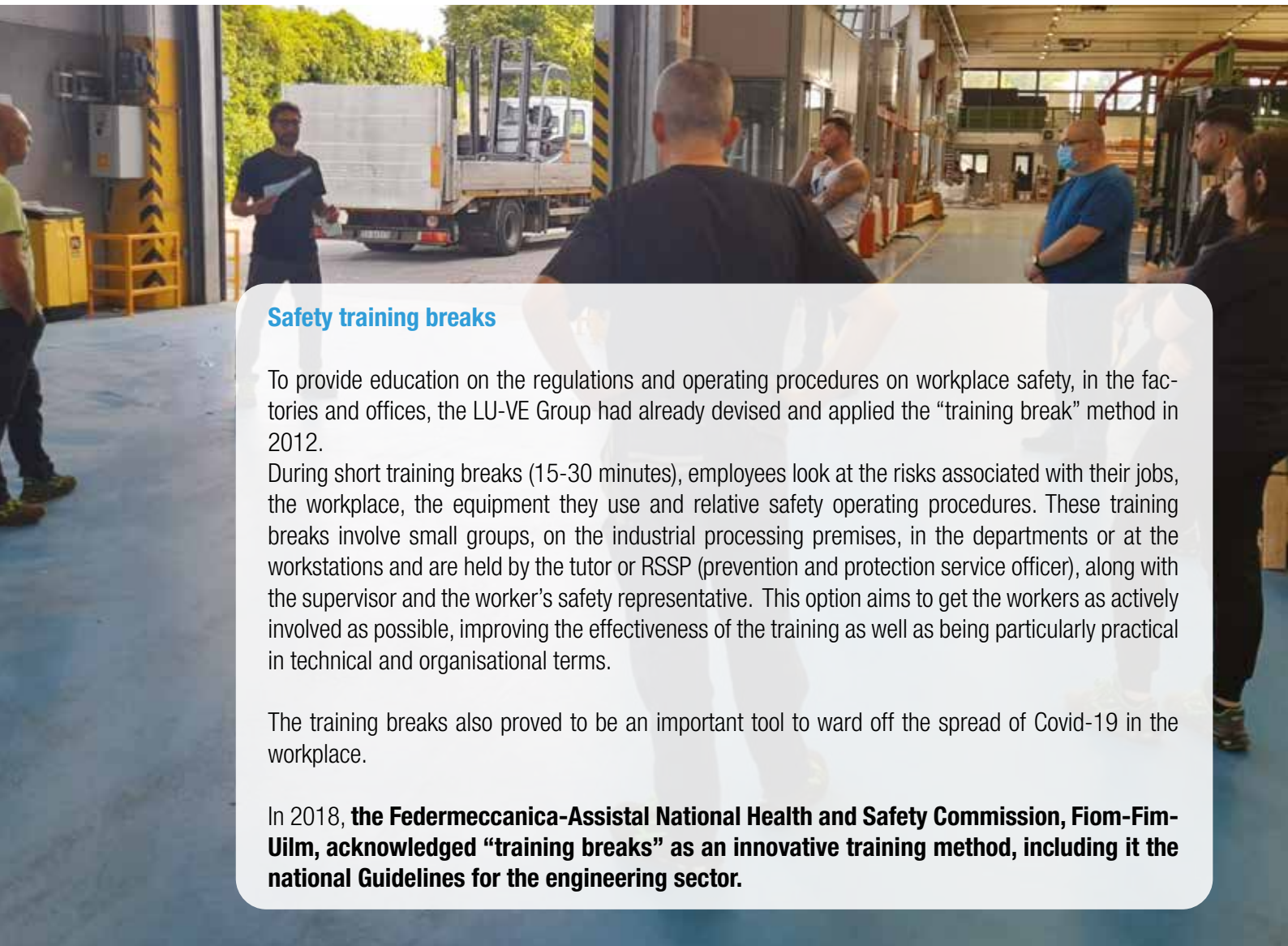
In 2022, ten injuries relating to external workers were recorded, of which no serious accidents. On a total of 2,397,043 hours worked, a specific accident rate of 4.17 was calculated.

With respect to accidents, in the course of 2022 the

following was observed for the LU-VE Group:

- there were no fatalities at work;
- there were no charges concerning occupational illness against employees or former employees or cases of mobbing.

Following the update to the non-financial risk analysis, the difficulty in ensuring workers' health and safety emerges as a moderate risk; therefore the Group carries out specific activities at the facilities and standardises the management of HSE processes²⁴.



Safety training breaks

To provide education on the regulations and operating procedures on workplace safety, in the factories and offices, the LU-VE Group had already devised and applied the “training break” method in 2012.

During short training breaks (15-30 minutes), employees look at the risks associated with their jobs, the workplace, the equipment they use and relative safety operating procedures. These training breaks involve small groups, on the industrial processing premises, in the departments or at the workstations and are held by the tutor or RSSP (prevention and protection service officer), along with the supervisor and the worker's safety representative. This option aims to get the workers as actively involved as possible, improving the effectiveness of the training as well as being particularly practical in technical and organisational terms.

The training breaks also proved to be an important tool to ward off the spread of Covid-19 in the workplace.

In 2018, **the Federmeccanica-Assistal National Health and Safety Commission, Fiom-Fim-Uilm, acknowledged “training breaks” as an innovative training method, including it the national Guidelines for the engineering sector.**

¹⁸ In 2022, a work-related injury that had taken place in 2021 had exceeded 6 months of working days lost; therefore, the data relative to accidents have been restated since those published in the previous Non-Financial Statement. For previously published data, reference should be made to the 2021 Non Financial Statement.

¹⁹ Commuting accident refers to an accident that takes place during the commute between the workplace and a place relating to private life (e.g., place of residence, place where meals are usually eaten), only when the transport has been organised by LU-VE Group.

²⁰ A high-consequence work-related injury is a work-related injury that results in a fatality or in an injury from which the worker cannot, does not, or is not expected to recover fully to pre-injury health status within 6 months.

²¹ The rate of work-related injuries is calculated as the number of work-related injuries/hours worked x 1,000,000. In calculating the rate of work-related injuries, commuting accidents were only taken into account when the transport was organised by LU-VE Group (e.g., bus or vehicle of the company or a contractor).

²² The rate of high-consequence work-related injuries is calculated as the number of high-consequence work-related injuries/hours worked x 1,000,000.

²³ The severity rate is calculated as the number of days lost due to a work-related injury/hours worked x 1,000,000. Days lost due to commuting accidents are also included in the calculation of days lost, only when the transport was organised by LU-VE Group (e.g., company or contractor bus or vehicle).

²⁴ Reference should be made to the Directors' Report for further information on health and safety.

SICUREZZA



Safety leadership

In conjunction with the ordinary health and safety courses for employees, 2022 saw the continuation of the training project at Group headquarters in 2022 on the subject of awareness of the role of supervisor and associated responsibilities.

The aim of the project has been to reiterate and consolidate the direct and pragmatic approach to the issue of safe conduct shared in 2021 and extend the training to a greater number of participants.

Considering the history and culture of the LU-VE facility in Uboldo, the most functional and performing approach is in fact represented by a practical activity carried out directly in the department, “*where conduct is seen on a daily basis*”.

The project reinforced the awareness that there is no such thing as a “*safety intervention*”, but that continuous and integrated safety management is necessary, and above all that a “**safety culture**” is necessary.

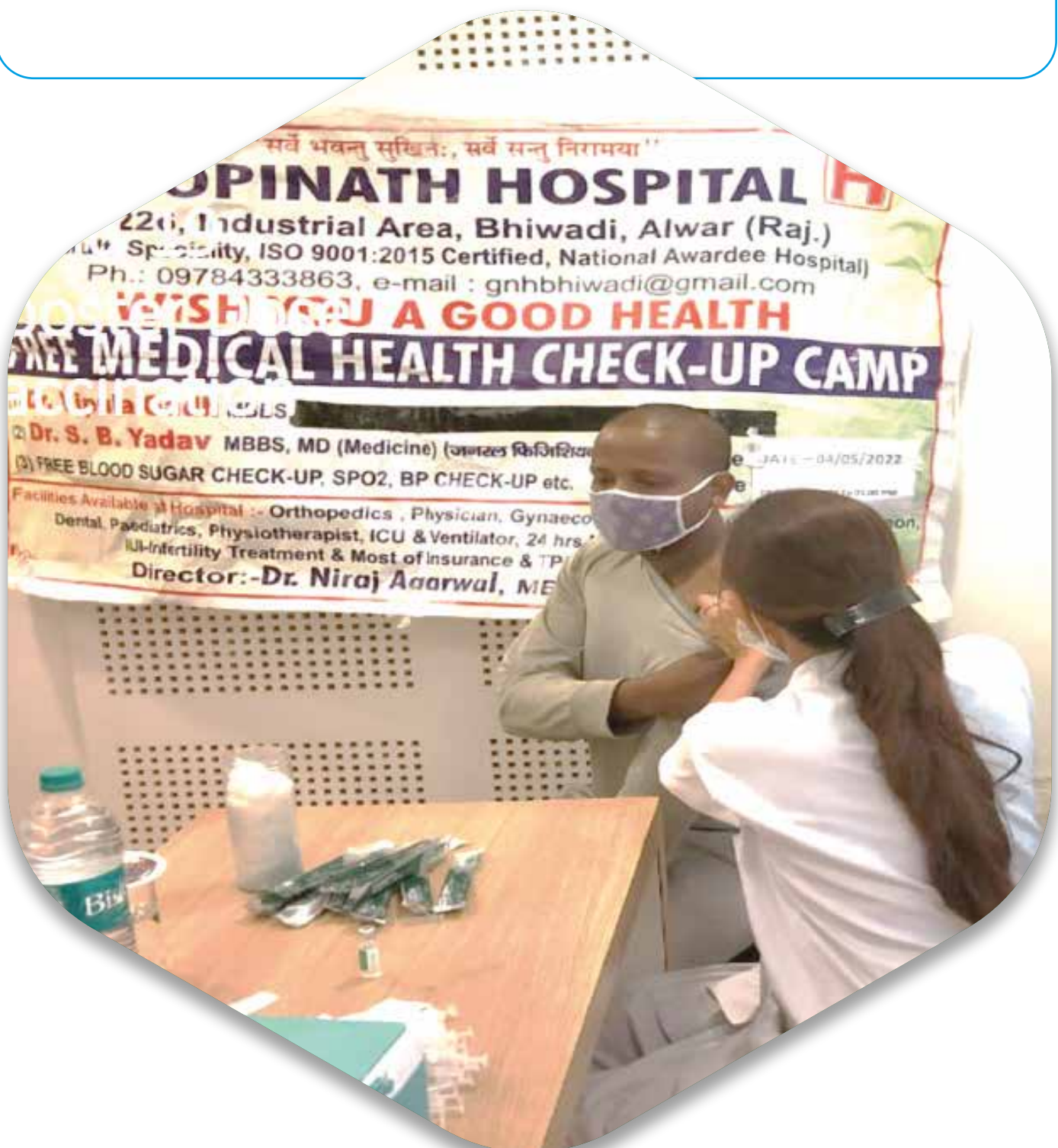
Vaccination and health care for Indian employees

In 2021, the Group completed the Anti-Covid vaccination plan (first and second dose) for 100% of its employees at the Bhiwadi and Sarole facilities and in the New Delhi offices.

In July 2022, the booster dose was administered to 637 employees over the course of two vaccination sessions which took place during two consecutive weekends.

The LU-VE Group covered all costs of the operation which was administered by the healthcare personnel from local hospitals directly on company premises in specially prepared areas.

In December 2022 the "Employee Health Check-up" campaign for employees working at the Bhiwadi facility was completed. The plan involved standard check-ups performed by general medical practitioners along with ear, nose and throat specialists and dentists.



*“Imagination
is more important than knowledge”*

(Albert Einstein – Nobel Prize for Physics)



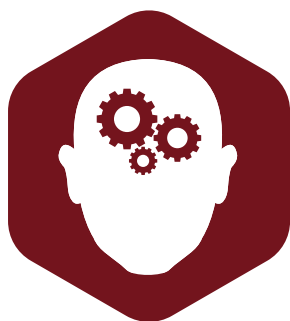
A photograph of a vast field of red tulips under a sunset sky. The sun is a bright, glowing orb in the upper center, casting a warm, orange and yellow light across the scene. The tulips are in various stages of bloom, their petals a deep red color. The background is a soft, out-of-focus landscape with more tulips and a distant horizon line.

BALANCED WORLD

More opportunities for all

BALANCED WORLD

More opportunities for all



€ 3 millions

To support Group employees and their families



77

Scholarships awarded to children of employees



92%

Group production companies involved in social initiatives



”

Grey matter is our raw material

This refers not only to products but is also the thought that guides us so that we can fulfil the commitments we have made to our employees and the communities in which we operate, to promote personal and professional growth. ”

Fabio Liberali, LU-VE Group CCO

4.1 We support employees and their families

For LU-VE Group, creating shared value means strengthening the competitiveness of a company while improving the economic, social and environmental conditions of the communities in which it operates. In fact, the Group has for years been involved in schemes to promote the well-being of its people and their families.

LU-VE Group: an extraordinary bonus for all employees

To combat the considerable increase in the cost of living, the LU-VE Group has decided to give all employees at its facilities in Europe, China, India and the US an extraordinary bonus.

In the second half of 2022, the Group allocated €3 million to provide tangible support to its personnel and their families that are suffering the fierce repercussions of the current economic scenario.

Iginio Liberali, founder of the LU-VE Group, once said: *"The founding value of the LU-VE Group has always been our people, without whom nothing of what we are today would have been possible. The LU-VE Group is a company made up of men and women who we have always supported and intend to continue supporting. That's why we've decided to allocate €3 million to support all our employees at this complex historic juncture, with a rising cost of living and high inflation which are having serious repercussions on family budgets. We want to provide tangible proof of our closeness and our support for everyone who working with us every day."*



“ERMANNO E CHIARA LIBERALI” SCHOLARSHIP

LU-VE Group has a long history of promoting the education and training of young generations. The Group has provided scholarships to support the education of employees' children since 2001. The project stems from the direct desire of the Chairman and founder of LU-VE Group, Iginio Liberali, who recognises that scholarships are a meritocratic and concrete tool for promoting equal opportunities for growth and training among youth: *“We must think of the young and their education. I know the value of scholarships well: I myself was able to continue my school career, from middle school to university graduation, thanks to scholarships from the Necchi company in Pavia, where my father was a worker. One of the first choices I made when I founded LU-VE was to create the ‘Ermanno and Chiara Liberali’ Scholarship, named after my parents”.*

In 2022, the “Ermanno e Chiara Liberali” scholarship reached its 21st edition, making funds available to the families of employees to help the most deserving students to fulfil their potential at universities and high schools.

The scholarship is assigned through a selection process with strict prerequisites to support successful study programmes and guarantee equal opportunities to the children of LU-VE Group employees. The allocation rules were established in agreement with the Joint Trade Union Representatives of the various facilities.

The number of young people accessing the scholarship rises every year, and this is why a gradual expansion to all the Group's foreign operations is planned. An ad hoc selection process will also be established for students working at the Italian facilities.

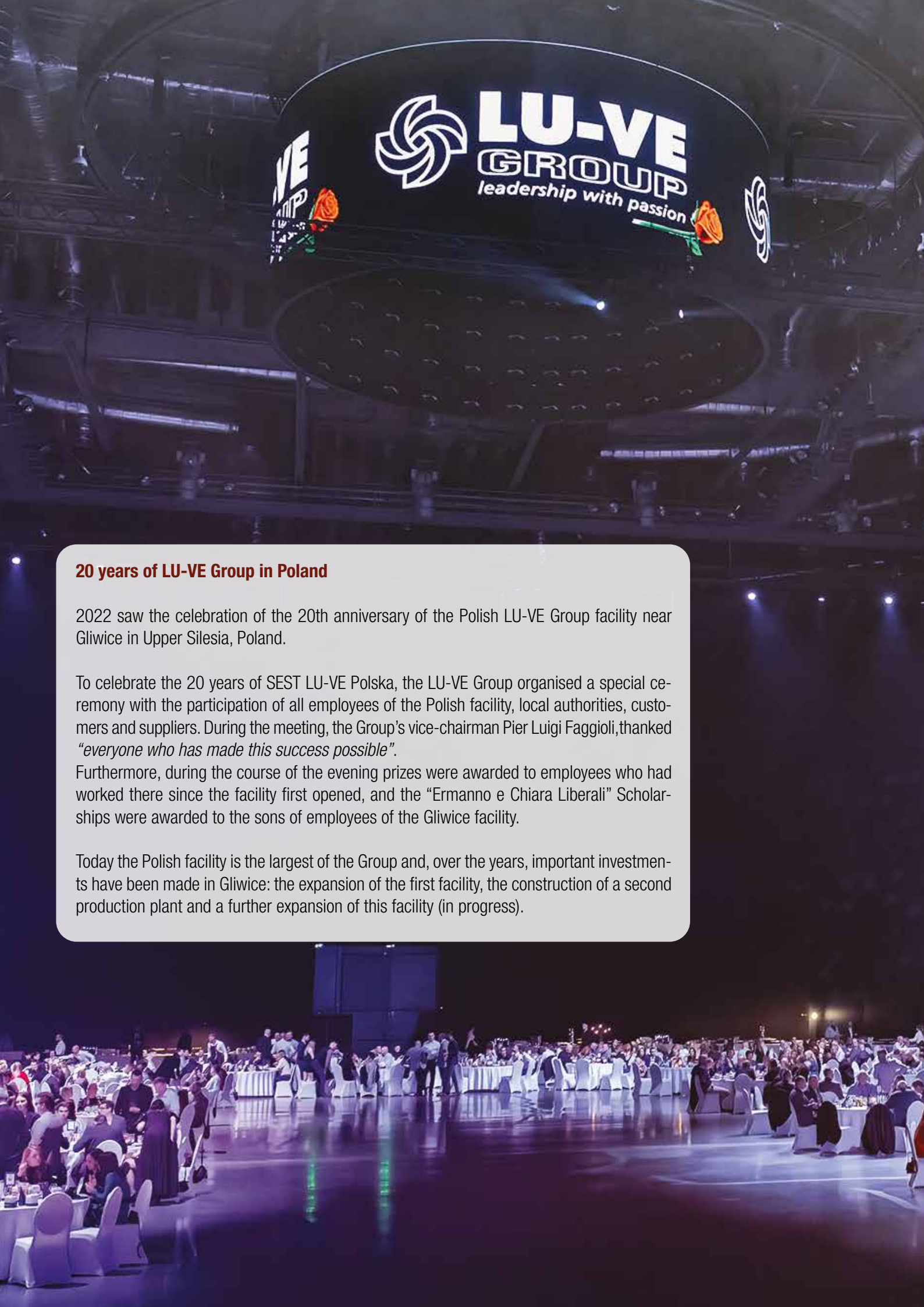
21st Edition of the “Ermanno and Chiara Liberali” Scholarship

The scholarships were awarded to **77** young persons with an outstanding educational performance during the 2021-22 academic year, for a total of almost **€124,000**.

In 2022, for the first time, in addition to the Italian facilities in Uboldo (VA), Travacò Siccomario (PV), Limana (BL) and Alonte (VI), the Scholarships were also awarded at the facilities in Novosedly (Czech Republic), Gliwice (Poland) and the newly acquired Refrion in Flumignano di Talmassons (UD).

Since 2001, when the competition was launched, 389 scholarships have been awarded for a total of approximately €725,000.





20 years of LU-VE Group in Poland

2022 saw the celebration of the 20th anniversary of the Polish LU-VE Group facility near Gliwice in Upper Silesia, Poland.

To celebrate the 20 years of SEST LU-VE Polska, the LU-VE Group organised a special ceremony with the participation of all employees of the Polish facility, local authorities, customers and suppliers. During the meeting, the Group's vice-chairman Pier Luigi Faggioli, thanked *"everyone who has made this success possible"*.

Furthermore, during the course of the evening prizes were awarded to employees who had worked there since the facility first opened, and the "Ermanno e Chiara Liberali" Scholarships were awarded to the sons of employees of the Gliwice facility.

Today the Polish facility is the largest of the Group and, over the years, important investments have been made in Gliwice: the expansion of the first facility, the construction of a second production plant and a further expansion of this facility (in progress).

The first 20 years of the Refrion Group

December 2022 saw the celebrations for the 20th anniversary of Refrion, the most recent company to become part of the Group.

This was an opportunity to share the achievement of this major milestone with all the employees and significant partners of Refrion.

The feeling of belonging, the value of the people and the importance of the area were issues addressed during the ceremony, along with the mention of investments currently underway for the advancement of employees and environmental sustainability. In fact, at the Talmassons facility, Refrion's first facility, major expansion works have begun to bolster production its positive impact on the local area.



LU-VE Group is aware of the importance of closeness to local communities, inclusiveness and multiculturalism. The Group has always undertaken to develop its organisation, starting with local resources and professionals, especially the front line managers, recruiting resources from the countries it operates in and where its facilities are based. In 2022, the percentage of Directors at the various locations of the Group recruited from local communities was 87.5% (28 out of a total of 32 are from local communities), in line with the 87.1% of 2021.

Since its inception, the Group has considered work a fundamental right, not only to provide families with economic stability, but also to ensure inclusiveness and

equal opportunities, both individually and collectively.

In particular, the work context is very important for people with disabilities. Difficulties in getting people with disabilities into work have an immediate effect on a family's economic situation, which is already burdened by care and nursing activities, and on the individual well-being of each individual. Providing stable employment means ensuring financial security and active participation in social life.

ALFA COOPERATIVE: WORK AS THERAPY

“Everyone has the right to work, to free choice of employment, to just and favourable conditions of work and to protection against unemployment”.

Art. 23.1 - Universal Declaration of Human Rights of the United Nations, 1948

The right to work is also true for people with mental disabilities. Since 2006, at its Uboldo (Varese, Italy) facility, the LU-VE Group has partnered with the Alfa Social Cooperative of Lomazzo (Como, Italy) on the project “Like shoes in the fridge”.

The aim is to help people with disabilities or socially disadvantaged to access employment and partake of company life. This partnership falls within the scope of parameters envisaged for the recruitment of personnel registered at job centres as differently able persons. In accordance with the principles of the ILO (International Labour Organisation), full inclusion in the work environment allows for a diverse workforce and improves productivity and service.

The Cooperative carries out the following at the Uboldo facility: cleaning and sanitising external areas, the production facility, offices, kitchen and company canteen; separated waste inside the company; raising workers' awareness of waste separation; pest control and rodent control; minor internal portage; safety and ecology consultancy.

The Cooperative (in partnership with LU-VE Group's human resources department and corporate occupational

medicine) helps to manage situations of work stress due to a disability.

LU-VE Group provides access (free of charge) to the company canteen, all means of transport for internal goods handling and equipment for working at heights. It also provided the cooperative with an internal secretariat, changing rooms and a telephone line. Among the various activities, the Group:

- includes cooperative members in its internal training courses (e.g., course for forklift truck drivers, first aid, waste management);
- provides company access to the area services institutionally operating in the field of job placement of disabled people and the social and health services which are part of hospital psychiatric services, so that the job placement path is transparent and also controlled by the public bodies;
- invites cooperative members to events organised by the company to mark Christmas or other anniversaries;
- allows cooperative members to use the company canteen free of charge together with LU-VE staff to create moments of socialisation.

"Psychiatric patients that come to us are among those absolutely last in line, sick and poor: economically disadvantaged, devoid of social relations, intellectually and culturally impoverished, with no prospects for the future, poor families that often have other problems as well. The real therapy is finding oneself in a normal environment, even with a minor role, receive a wage every month, and be considered workers. What LU-VE Group allows us to do is absolutely commendable. Alfa is trying hard, the crew are committed, but above all the company and the Liberali family are allowing us to pursue an initiative that is hard to find in other factories."

**Dott. Antonio Gervasio,
Doctor and head of the Alfa Social Cooperative**

During 2022, the LU-VE Group recruited 34 individuals from the Alfa Cooperative (33 in 2021 and 30 in 2020), 25 of which had mental or physical disabilities or were socially disadvantaged. They work as porters, refuse collectors, daily cleaners and weekly cleaners. From 2005 to today, as many as 125 members of the Alfa Cooperative have been welcomed at the LU-VE facility of Uboldo, of which 64 differently able persons

(79% mentally, 2% physically and 19% socially disadvantaged). Of these the company has permanently hired 7 (5 mentally disabled, 1 physically disabled and 1 socially disadvantaged).

The personal stories of some of the people in the Cooperative have been collected in the book "Like shoes in the fridge", edited by LU-VE Group.



4.2 We support local communities

SUPPORT FOR LOCAL COMMUNITIES

ITALY

Supporting culture

In line with its sustainability strategy, the LU-VE Group intends to promote and invest in the social and cultural development of local communities. During 2022, the Group has sponsored the University of Pavia's "Stone documents: traces of the past, signs of the present" project, an exhibition with 300 historic images in the central campus building over the years (13 October-4 December, Palazzo del Broletto, Pavia). The exhibition was organised by the University Archive System Service in collaboration with the Council of Pavia Cultural Department, in partnership with the Pavia University CRAL and the patronage of the ANAI Italian National Archive Association.

" Our family is profoundly connected to Pavia. Making a cultural operation available to its citizens is a worthy deed and so it seemed obvious that we should support an event organised by the University. We are happy to have the opportunity to make our contribution to promoting the artistic and cultural heritage of the University and of the city and to give young people and all local residents a space where they can acquire knowledge, learn and enrich themselves".

Fabio Liberali, member of the LU-VE Group Board of Directors



IVORY COAST

Ayamé, the habit of hope



In 2021, the LU-VE Group began supporting the activities of the Pouponnière (kindergarten) Shalom Soua in Ayamé, Ivory Coast, founded and run by APPA (Pavia Agency No. 1 for Ayamé), whose motto is “To get into the routine of cultivating the habit of hope”.

The activities focus on three main projects. Pouponnière is a care facility developed to meet the health and care needs of the local community. In 2022 it welcomed 55 children between the ages of zero to six. Social horticulture, set up years ago to provide fresh food to the kindergarten, has recently evolved into an interesting social project thanks to the “agricultural forces” from APPA.

The LU-VE Group has helped to fund the first expedition of two students specialising in paediatrics from the University of Pavia, who travelled to the village of Ayamé where for two months they will work alongside the senior specialist paediatrician of the state hospital that for years has been providing high quality services. Claudio Bondi, a nurse and vice-chairman of the World Medical Aid of Tarquinia, is instead organising the eye specialist cooperation that coordinates teams of eye doctors and distributes them throughout the area. The Pavia No.1 Agency for Ayamé has managed to procure the state-of-the-art equipment needed to update the eye clinic based on the indications received.

CZECH REPUBLIC

Social, cultural and sports initiatives



The Novosedly (Moravia) site in the Czech Republic supports a number of local initiatives.

On a social level, it supports two different institutions care for children with special needs (Ave Anna and BJP Foundation), two associations for children (Jarabáček and the SRPŠ Drnholec school group) and an organisation (Ratolest Brno) that assists Ukrainian single mother war refugees. In 2022 donations were also made to the communities of the villages of Novosedly and Nový Přerov that are close to the facility.

On a cultural level, the Group has provided contributions to folk groups, classical music groups and in particular to the Prague Mozarteum which upholds Mozart’s musical legacy in Prague.

On a sports level, it support two local sports clubs (TJ Dynamo Drnholec and TJ Sokol Ivaň).

RUSSIA
Social initiatives



The Russian office in Lipetsk has been supporting the Tau Centre in Ussurijsk in the Russian Far East since 2015.

Coordinated by Franciscan monk Stefano Invernizzi, it has offered shelter to homeless adults, a soup kitchen for the underprivileged and the disabled, an after-school care programme, various laboratories for children of poorer families and a project for physically-challenged children since 2007. In 2022, the Group was also engaged in fulfilling local needs, also providing economic support in certain vulnerable situations: a contribution was made following a fire that damaged the home of a senior Group employee and urgent medical expenses were covered to support a family in need.

CHINA
Social initiatives



The Chinese site in Tianmen (Hubei Province) took part in a support plan in favour of the Jingtian Rural Welfare Home. The facility looks after frail elderly people (not self-sufficient and without families) by providing board, lodging and basic medical assistance.

Over the course of the year, LU-VE Tianmen has also provided financial contributions to purchase test swabs for the fight against Covid-19.



FINLAND
Sport and culture



The Vantaa facility in Finland sponsors the youth sections of two different ice hockey teams, Harjun Kiekko ry and Kiekko-Vantaa, to promote the spread of sport as a healthy and educational activity to help youth development.

The company supports the Finnish Museum of Refrigeration in Ylöjärvi, in the Pirkanmaa region. The cultural institution's purpose is to present the history of the Finnish refrigeration industry and it exhibits refrigeration products and technologies (including blocks of ice from various periods) that span a period of more than 50 years. It is the only museum of its kind in the country and one of very few in Europe.

SWEDEN
Support for research and sport



The Asarum site in Sweden supports a number of local initiatives, mainly focusing on youth sports to enable young children to be physically active and take part in group learning activities.

The clubs sponsored by the Group are the Asarum IF football team, the Karlshamns Golfklubb golf team and the Mörrums Gois Youth Hockey team.

On a social level, contributions have been given to two different organisations. Sirius Orden helps people in need, providing meals and helping women who are victims of domestic violence. The Barncancer Fonden is a Swedish foundation that researches forms of paediatric cancer.



INDIA
Social initiatives



The Group's Indian facilities operate on a number of different fronts with an overall outlay of just short of €160,000.

The largest share was allocated to the L.E.U. (Learn Empower Uplift) Foundation for three different educational programmes for infants from the most vulnerable social classes.

Other important contributions have been made to two government funds that support communities in the wake of natural catastrophes and in the fight against Covid, as well as Computer Shiksha, an organisation engaged in bridging the digital gap, especially among the more disadvantaged sections of the population, and among children through initiatives in schools.

In 2022 the partnership with the National Association For The Blind also continued. Lastly, funds were also allocated for environmental protection and conservation (Plantation Activities) in the Kaharani Industrial Area.

TANZANIA
Malaika Children's Home



Since 2017, the Group has been supporting the "Malaika Children's Friends Onlus", a children's home in Tanzania that since 2011 has been welcoming orphaned, abandoned or medically needy children since 2011, with the aim of helping them grow in peace within their culture, trying to reunite them with their families of origin where possible and supporting their growth as independent adults.

The Malaika (which in Swahili means "angel") group home is located a few kilometres from Arusha, close to the village of Moshono.

In 2022, the Malaika Children's Friends supported by the LU-VE Group opened a new candle craft workshop which last year alone allowed the group home to collect 30 million shillings, equal to approximately 13,000 euro, for its activities

ITALY

Centro Universitario sportivo Pavia



LU-VE Group continued to sponsor CUS Pavia (Italy) again in 2022, a multi-sports club linked to the University of Pavia and famous for being a breeding ground for Olympic, world and Italian champions in various disciplines.

The 2022 winners list of Pavia University students is of the highest order. Overall the athletes of the CUS Pavia club (all university students) won 5 silver medals and 1 bronze at the World River Canoe Championships, 1 gold and 2 silver medals at the Canoeing World Cup, 1 gold medal at the European Canoeing Championships, a number of Italian titles in different disciplines, in addition to their inclusion in the Italian national teams.



ITALY
Gabriele Galli AIMS for the 2026 Olympics



The LU-VE Group continues to support Gabriele Galli, the Uboldo athlete, who with his efforts and passion is continuing to pursue his sporting successes. His goal is still to take part in the 2026 Milan-Cortina Olympic Games.

ITALY
Powerlifting Vikings Veneto



A bumper year for the Power Lifting Vikings Veneto (Italy) athletes sponsored by the LU-VE Group, with immense satisfaction for their trainer Alessandro Camparsi, a LU-VE Group employee.

At international level they have won 8 world medals and 11 European medals overall (in the "Total" and special categories), 2 world records and 10 call-ups to the national team. At national level: 10 titles as best Italian club (male and female categories), 122 national individual medals and 55 Italian records.



ITALY
Be Art Varese



In 2022, the LU-VE Group sponsored the “Be Art” team (Varese, Italy) that practices aerial art and dance activities.

During the 2022 world championships held in Rome, 5 Be Art athletes took part in various categories, 4 of them reached the podium, taking home one gold, two silver and one bronze medal. The daughter of a Group employee reached the second step of the podium.

CHINA
Peter Stiller, Kart pilot



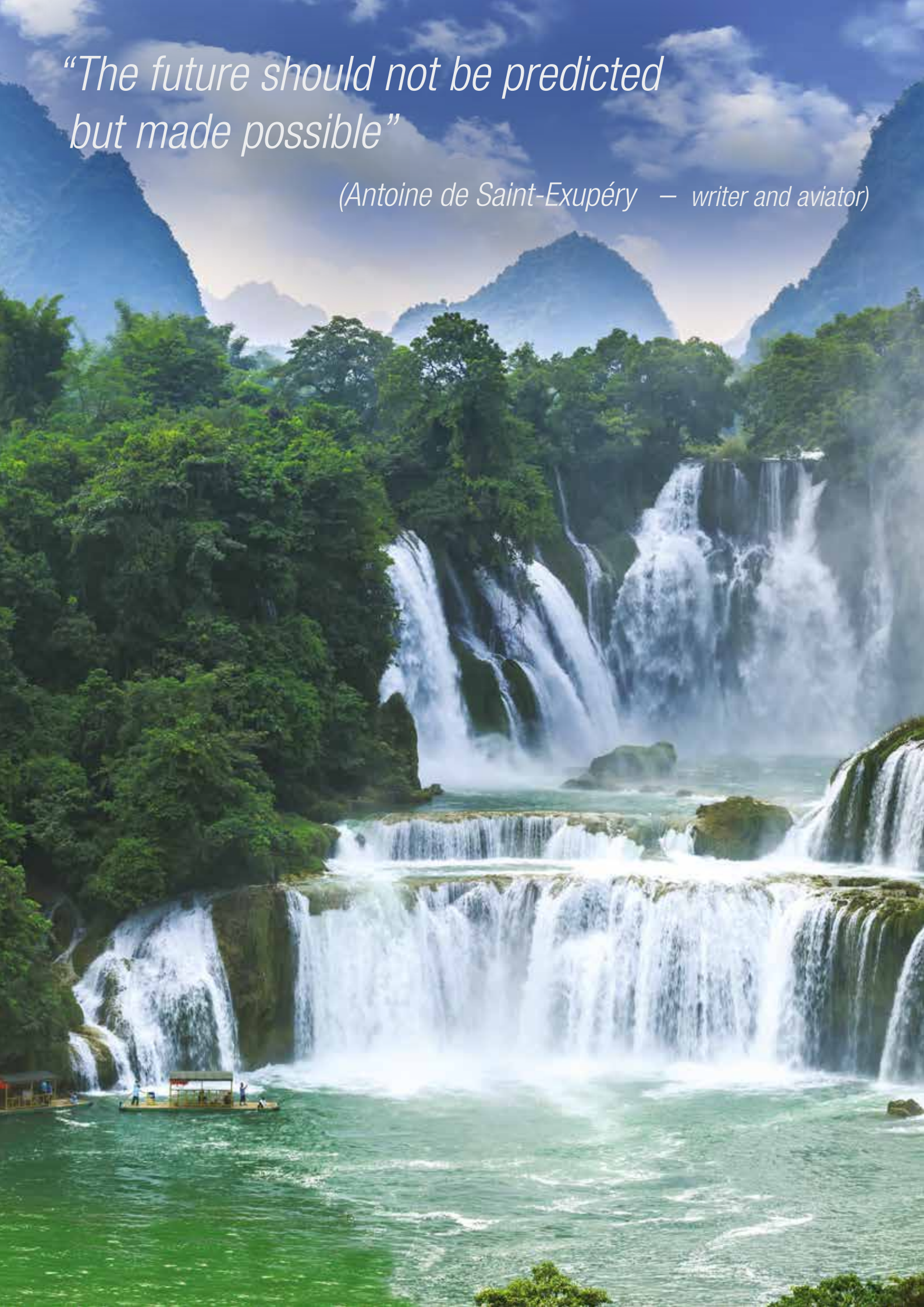
Since 2021, the LU-VE Group has begun to follow and sponsor the young and promising kart driver, Peter Stiller, 16, who in the 2022/2023 season started to race in the World Championship and in the European FIA CIK Championship, besides taking part in the IAME Euro Series.

Peter started his career in China, where he was born and lives, achieving 2 wins and 9 second places, becoming the X30 Senior vice-champion of the Rotax Max Trophy and taking second place in the Chinese NKCC National Championship for the X30 Junior category.



*“The future should not be predicted
but made possible”*

(Antoine de Saint-Exupéry — writer and aviator)



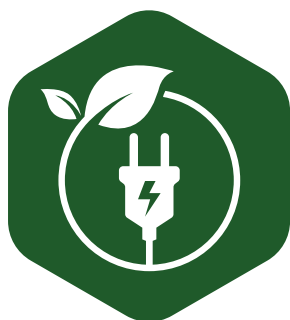


CONSCIOUS WORLD

Stewardship for a better future

CONSCIOUS WORLD

Stewardship for a better future



-5,639 ton of CO_{2eq}

Avoided thanks to the production of electricity from photovoltaic systems and purchases of certified renewable energy

Calculated using the Market-Based method



0.039

GHG emission intensity (tCO_{2eq}/€ of turnover)

Including GHG Scope 1 + Scope 2 emissions (market-based method)



57%

Suppliers that have filled in the “Supplier Form” on good practices and respect for human rights



”

**The focus on sustainability
is one of our hallmarks.**

Since our foundation, we have been researching and investing in environmentally-friendly solutions and the innovations we have introduced have since become a constant reference for the entire industry.”

Matteo Liberali, LU-VE Group President and CEO

5.1 Looking at our environmental impacts

In 2022, the LU-VE Group began a structured activity with the aim of **reducing greenhouse gas emissions (Scope 1 and Scope 2)** associated with its activities, starting with an analysis of its more important production facilities²⁵.

The project was headed by the Group's Operations Department. At the end of 2022, the LU-VE Group adopted a new governance model, which includes two new Group functions: the Operations Cooling Systems Director and the Operations Components Director, respectively responsible for the cooling system and component production facilities. Each Group company also has a local contact who manages the environmental aspects of the individual facility.

A preventive approach to risk management has been adopted at several facilities, based on management systems compliant with international ISO 14001 standard.

Alongside these, **to mitigate the impacts along their entire value chain, in 2022 LU-VE Group began an assessment to calculate GHG Scope 3 emissions**, emissions generated upstream and downstream of the Group's production activities, such as for example the emissions generated by logistics and by the products during their use by end users. The project has

analysed the categories included in the "GHG Protocol" international framework and this clearly identified the processes on which action can be taken to obtain the necessary data. On this issue, the Group is committed to integrating the report on GHG Scope 3 emissions in its next Consolidated Non-Financial Statements.

At strategic level, the Group intends to pursue the integration of sustainable development principles into its vision and business model in an increasingly precise and consistent manner, defining quantitative objectives in the coming years in terms of reducing both direct and indirect greenhouse gas emissions, in accordance with the internationally approved reference framework.

Overall, 2022 saw a reduction in both energy and emission intensity. Note that, in line with completion of the acquisition of the Refrion Group facilities (Italy), the 2022 figures also include the related consumption.

Other risks (possible sub-optimal management of water consumption and waste) have been identified as moderate; however, the Group is committed to keep them under control through scrupulous monitoring and development of dedicated initiatives to improve the use of resources at the various facilities.



²⁵ The Scope 1 emissions arise from the consumption of fuel such as natural gas, diesel, petrol, LPG and to a lesser extent from refrigeration gas leaks in office and facility air conditioning units. The scope 2 - indirect - emissions are due to electricity consumption at the Group's facilities.

ENERGY CONSUMPTION AND EMISSIONS

As regards **energy consumption** in 2022, total consumption within the Group's production companies is **296,748 GJ** and includes self-produced electricity from photovoltaic systems at the facilities, fuel consumption for the company fleet, space heating and production processes, as well as electricity supplied by the national electricity grid.

To reduce climate altering emissions generated by production activities the Group acts on three different levels: energy saving initiatives, electricity production from photovoltaic systems and purchase of energy from renewable sources (Origin Guarantees). In particular, the Group recorded outstanding performance for:

- **Production of electricity from photovoltaic systems**

During 2022, a new photovoltaic system became operational at the Bhiwadi (India) facility. Along with

the photovoltaic systems already present at other Group facilities, i.e. Uboldo (Varese, Italy), Limana (Belluno, Italy) and Vantaa (Finland), the total energy production from the systems amounted to **5,785.4 GJ**, equal to **872 tCO₂eq** avoided.

- **Purchase of energy from renewable sources (Origin Guarantee).**

From 2022, the facilities at Travacò Siccomario (Pavia, Italy) and Limana (Belluno, Italy) also purchase renewable energy 100% certified by Origin Guarantees, and likewise the facilities in Uboldo (Varese, Italy) and Asarum (Sweden) that had already been sourcing certified renewable energy. These actions allowed the Group to avoid emissions amounting to **4,767 tCO₂eq**.

ENERGY CONSUMPTION FROM FOSSIL FUELS (GJ)

	2020	2021	2022
Natural Gas	96,905.2	117,925.7	112,654.7
Diesel	7,491.7	8,323	10,636.4
Petrol	1,210.4	1,400.1	1,789.2
LPG and propane	16,764.9	20,657.6	26,425.9
Total	122,372.3	148,306.4	151,506.2

ELECTRICITY SELF-GENERATED FROM RENEWABLE SOURCES (GJ)

	2020	2021	2022
Electricity from photovoltaics generated and consumed	3,222.1	3,088.1	5,785.4
Electricity from photovoltaics generated and sold	394.6	228	243.6
Total	3,616.6	3,316.1	6,029.0

ENERGY CONSUMPTION FROM PURCHASED ENERGY (GJ)			
	2020	2021	2022
Electricity from the national grid	104,152.2	125,105.0	128,655.0
District heating	7,838.7	11,232.9	10,801.9
Total	111,991	136,337.9	139,456.8

TOTAL ENERGY CONSUMPTION (GJ)			
	2020	2021	2022
Energy consumption from fossil fuels	122,372.3	148,306.4	151,506.2
Energy consumption from purchased energy	111,991	136,337.9	139,456.8
Electricity from photovoltaics generated and consumed	3,222.1	3,088.1	5,785.4
Total	237,585.4	287,732.4	296,748

INDIRECT GHG EMISSIONS (SCOPE 1) (tCO2eq)			
	2020	2021	2022
Fuel consumption	6,552.3	7,844	8,108.2
Refilling of refrigerant gas ²⁶	52	72	33
Total	6,604.4	7,915.8	8,141.2

INDIRECT GHG EMISSIONS - SCOPE 2 ²⁷ (tCO2eq)			
	2020	2021	2022
Electricity (market-based)	16,408.4	16,205.0	15,624.3
Electricity (location-based)	14,458.3	16,715.7	17,169.2
District heating	375.8	532.7	512.3
Total (market-based)	16,784.3	16,737.7	16,136.6
Total (location-based)	14,834.1	17,248.2	17,681.4

²⁶ In 2022, the following refrigerant gases were recharged: R134A, R422A, R22 and R410A.

²⁷ Total emissions are expressed in CO2eq although Scope 2 emissions (location-based) deriving from the consumption of electricity are expressed in CO2, as the portion attributable to CH4 and N2O gases is not significant.

With regard to energy consumption and the related GHG emissions, the Group pursues the objective of dissociating economic growth and energy intensity and

emissions, with a view to reducing its environmental impact. Compared to 2021, both energy intensity and GHG emissions decreased in 2022.

ENERGY INTENSITY AND GHG EMISSIONS

	2020	2021	2022
Energy intensity (GJ/€ of turnover)	0.59	0.58	0.48
Intensity of GHG emissions (tCO ₂ eq/€ of turnover) - relative to Scope1 + Scope 2 (location-based)	0.053	0.051	0.042
Intensity of GHG emissions (tCO ₂ eq/€ of turnover) - relative to Scope1 + Scope 2 Market-based	0.056	0.050	0.039

ELECTRIC VEHICLES

During 2022, two charging stations were installed at the Uboldo facility (Varese, Italy) for a total of four charging stations for electric vehicles.



Aside from greenhouse gas emissions, the main emissions of aeriform pollutants originating from the Group's production activities were also mapped. These emissions were calculated from the direct measurements

taken by consultancy firms and certified laboratories and through estimates based on the manufacturing activities of the various facilities.

OTHER ATMOSPHERIC EMISSIONS (kg)				
		2020	2021	2022
CO		2,100	3,872.3	1,821.0
NOx		5,354	8,770.1	6,713.8
Particulate		434	820.6	1,084.0
VOC		9,525	8,970.9	7,319.9
Oil mist		235	466.5	1,033.3
Heavy metals	Copper	177	174.2	44.6
	Iron	134	125.3	142.5
	Zinc	3	2.2	1.1
	Aluminium	2	0.3	1.5
	Tin	6	9.1	14.1
	Lead	5	7.6	18.0



WATER RESOURCES

The Group constantly monitors its water withdrawals, seeking to adopt production practices and processes able to reduce requirements as far as possible. In addi-

tion, impacts related to water resources, both in terms of withdrawals and discharges related to activities, are monitored using an approach in line with the regulations in force in the various countries in which it operates and using best practices.

WATER WITHDRAWAL BY SOURCE (m ³)				
		2020	2021	2022
Groundwater		132,072	159,444	147,169
of which freshwater ($\leq 1,000$ mg/l of total dissolved solids)		7,954	9,300	10,204
other types of water ($> 1,000$ mg/l of total dissolved solids)		124,118	150,144	136,965
Third-party water sources		68,803	88,693	109,949
of which freshwater ($\leq 1,000$ mg/l of total dissolved solids)		68,803	88,693	109,949
other types of water ($> 1,000$ mg/l of total dissolved solids)		-	-	-
Total withdrawal of third-party water sources by withdrawal source	Surface water	13,258	16,204	19,774
	Groundwater	53,545	72,489	90,175
Total		198,875	248,137	257,118

Compared to 2021, the Group's water consumption trends remained in line with the increase in production recorded in the last year. Of the water resources drawn

from third parties in 2022, around 18% was drawn from surface sources, while the remaining 82% was from ground water.



Water discharge was in line with the withdrawals made during the year and the increase in production recorded during 2022.

Water is returned to the environment in compliance with local discharge regulations, adopting dedicated controls.

WATER DISCHARGE (m ³)			
	2020	2021	2022
Discharge into third-party water sources	196,159	230,474	253,456
of which freshwater ($\leq 1,000$ mg/l of total dissolved solids)	193,546	226,411	248,500
other types of water ($> 1,000$ mg/l of total dissolved solids)	2,613	4,063	4,956
Total	196,159	230,474	253,456

As regards water stress areas²⁸.

- India (Bhiwadi and Sarole): extremely high risk.
- China (Tianmen) and Russia (Lipetsk): high risk.
- Italy (Limana, Belluno, Flumignano di Talmassons, Villa Santina): medium-high risk.
- All other Group facilities: low or medium-low risk.

To mitigate these risks, the Group constantly monitors its withdrawals, seeking to adopt production practices and processes able to reduce its water requirements as far as possible. An example of this approach is the product testing phases that are conducted using helium, rather than water, at many of the Group's facilities.

WATER WITHDRAWAL FROM WATER-STRESSED AREAS BY SOURCE (m ³)			
	2020	2021	2022
Groundwater	7,954	9,300	10,204
Third-party water sources	34,662	44,300	59,807
of which surface water	9,616	0	0
of which groundwater	25,046	44,300	59,807
Total	42,616	53,600	70,011

WATER DISCHARGE FROM WATER-STRESSED AREAS (m ³)			
	2020	2021	2022
Discharge into third-party water sources	44,527	50,648	66,849
of which freshwater ($\leq 1,000$ mg/l of total dissolved solids)	41,914	46,585	61,849
other types of water ($> 1,000$ mg/l of total dissolved solids)	2,613	4,063	4,956
Total	44,527	50,648	66,849

²⁸ Source: World Resources Institute, *Aqueduct Water Risk Atlas*, www.wri.org/our-work/project/aqueduct/

WASTE MANAGEMENT

The Group takes action to ensure adequate waste management.

The objective is to prevent potentially negative impacts on the local area, such as the contamination of environmental matrices (e.g. water and soil), or any other indirect impacts on the environment, as well as minimise the loss of material, which could instead be recovered or reused.

The applicable legislation on water management and di-

sposal are constantly monitored in the various countries and certified suppliers are used in order to comply with laws and regulations and to promote best practices.

At the individual facilities, the local contacts are responsible for monitoring and collecting data on waste. Waste is preferably recycled, and only if recycling is not possible due to the characteristics or type of waste is it sent for disposal. **Overall, waste for recycling in 2022 reached about 89% of the total waste produced.**

RE-CIG



**LU-VE
GROUP**
leadership with passion



Grazie all'installazione di questo Smokers Point, i mozziconi di sigaretta non finiranno assieme ai rifiuti indifferenziati!

Saranno purificati e lavorati con uno speciale processo che ne consentirà la trasformazione in un nuovo materiale!

Ringraziamo chi ha scelto di sostenere questo progetto, e un grazie speciale anche a voi, per la collaborazione.

RE-CIG: CIGARETTE BUTT RECOVERY

Through its Re-Cig® project, in 2022 the Group installed nine ashtray columns in external areas at the Uboldo (Varese, Italy) facility which allow recycling of cigarette butts. This project was conceived by Progetto Manifattura, a start-up that transforms the filters used in cigarettes into cellulose acetate; in just one year of business, Re-cig has breathed new life into two million cigarette butts, which have become commonly used objects such as glasses frames and umbrella handles.

With regard to hazardous waste, the main types resulting from the Group's activities are chemical compounds (e.g., lubricating oils and solvents), while the main types of non-hazardous waste are processing waste (e.g., aluminium, copper, iron, packaging cardboard), while in

the case of some of the Group's Italian companies (TGD and in part Air Hex Alonte) the waste water resulting from production activities is disposed of as waste.

WASTE BY COMPOSITION 2022 (t)			
2022			
	Waste generated	Waste diverted from disposal	Waste directed to disposal
Non-hazardous waste			
Aluminium waste	2,744.9	2,743.4	1.5
Copper waste	556.33	556.33	0.0
Steel waste	784.0	784.0	0.0
Iron waste	1,515.7	1,515.7	0.0
Paper and cardboard	922.7	922.7	0.0
Plastic	144.5	144.5	0.0
Other ¹	2,714.1	2,264	449.7
Hazardous waste			
Oil-contaminated waste	663.3	70.0	593.3
Chemicals	246.4	224.9	21.5
Other ²	221.4	168.6	52.8
Total	10,513.3	9,394.6	1,118.7

²⁹ The category "Other" refers primarily to waste disposed of through chemical/physical treatment and biological treatment for both hazardous and non-hazardous waste.

³⁰ The category "Other" refers primarily to waste disposed of through chemical/physical treatment and biological treatment for both hazardous and non-hazardous waste.

WASTE DIVERTED FROM DISPOSAL THROUGH RECOVERY OPERATIONS
2022 (t)

2022			
	In loco	External site	Total
Non-hazardous waste			
Recycling	-	8,279.7	8,279.7
Other recovery operations	-	651.4	651.4
Preparation for reuse	-	-	-
Hazardous waste			
Recycling	-	261.1	261.1
Other recovery operations	-	202.4	202.4
Preparation for reuse	-	-	-
Total waste diverted from disposal		9,394.6	9,394.6



The table below shows the waste data for 2020 and 2021.

WASTE BY COMPOSITION 2020 and 2021 (t)						
	2020			2021		
	Waste generated	Waste diverted from disposal	Waste directed to disposal	Waste generated	Waste diverted from disposal	Waste directed to disposal
Non-hazardous waste						
Aluminium waste	1,851.1	1,851.1	0	2,305.6	2,305.6	0
Copper waste	478.8	478.8	0	582.0	582.0	0
Steel waste	643.2	643.2	0	768.0	768.0	0
Iron waste	1,017.6	1,017.6	0	1,341.7	1,341.7	0
Paper and cardboard	832.6	815.6	17.0	978.0	978.0	0
Plastic	104.8	104.8	0	131.1	131.1	0
Other ³¹	2,346	1,905	441.2	2,945.5	2,451.6	495.0
Hazardous waste						
Oil-contaminated waste	11.4	11.2	0.1	314.8	38.6	276.21
Chemicals	50.7	50.7	0.0	230.3	216.1	14.2
Other ³²	398.6	318.7	79.9	186.7	171.3	15.4
Total	7,734.8	7,196.7	538.2	9,783.7	8,982.9	800.8

WASTE DIVERTED FROM DISPOSAL THROUGH RECOVERY OPERATIONS 2020 and 2021 (t)						
	2020			2021		
	In loco	External site	Total	In loco	External site	Total
Non-hazardous waste						
Recycling	-	6,270.9	6,270.9	-	7,880.1	7,880.1
Other recovery operations	-	545.2	545.2	161.6	515.3	676.8
Preparation for reuse	-	-	-	-	-	-
Hazardous waste						
Recycling	8.5	163.5	172	0	387.3	387.3
Other recovery operations	-	156.1	156.1	0	38.7	38.7
Preparation for reuse	-	52.5	52.5	-	-	0
Total waste						

Again in 2022, in line with last year, the Group did not record any significant spills such as to impact the water,

soil and subsoil matrices.

³¹ The category "Other" refers primarily to waste disposed of through chemical/physical treatment and biological treatment for both hazardous and non-hazardous waste.

³² The category "Other" refers primarily to waste disposed of through chemical/physical treatment and biological treatment for both hazardous and non-hazardous waste.

5.2 Looking at the impacts of our suppliers

In 2022 the particularly complex procurement situation persisted, above all for components and particularly electronics. The disproportionate lengthening of procurement lead times and the total unavailability of quotas beyond those proposed by suppliers as a maximum limit, were two elements that strongly affected many production activities.

Despite this particularly complex scenario, no significant shortages were recorded at most of the Group's facilities and it was almost always possible to support production continuity of the factories. This was achieved thanks to three key elements:

- continuous alignment work between the Purchasing department and other departments;
- preventive risk management implemented through analyses and regular global meetings;
- careful procurement strategies established by the Purchasing Department over the last three years.

With a view to managing and mitigating the “supply risk”, a number of new suppliers were approved with the aim of both reducing geographical dependence on individual countries and being able to spread the purchase quotas over a larger number of counterparties, thus reducing the impact of the shortage of production capacity compared to the demand that characterised 2022 (especially with reference to certain specific raw materials and to electronic components).

In 2022, the Procurement Office governance was in-

tegrated with the “Global Commodity Manager” (GCM) - as an evolving role compared to the Commodity Buyer which remains a major support role for the GCM. The GCMs, supported by the Commodity Buyers, operate at global level in sourcing activities with a view to enhancing potential synergies and opportunities at international level thanks to their skills and experience in monitoring commodity buying.

The Group's coordinator, “Purchasing process development and compliance specialist”, has been responsible since 2021 for integrating and monitoring social responsibility (CSR) aspects within Group procedures, collaborating on sustainability projects, monitoring the Purchasing Department's KPIs and following compliance issues.

SUPPLIER SELECTION AND QUALIFICATION

The process of selecting suppliers is based on the search for maximum competitiveness, innovation, compliance with supply specifications, service quality and level, and building solid, strategic and diversified partnerships. This approach has also proved effective as a tool for protecting and managing supply risk, at least for a critical period of short to medium duration.

In the last couple of years, the LU-VE Group has formalised a qualification questionnaire for new suppliers, with a view to overseeing the supplier management system and ensure that they share the same values, business ethics and approach to social responsibility. The Group has integrated a procurement policy into its internal procedures that includes environmental considerations and covers the procurement of raw materials, components, transportation and energy supplies.



SUPPLIER FORM

A close-up photograph of a person's hand holding a gold-colored ballpoint pen, writing on a document. The document has some faint lines and text, but it is mostly out of focus. The background is a blurred office setting with a person in a blue shirt visible.

SUPPLIER FORM - SOCIAL & ENVIRONMENTAL ASSESSMENT

Before the supply agreement is activated, the Group requires (by filling in the Supplier Form) that in all national and international locations and activities there is a ban on child and forced labour, physical punishment and mental and verbal abuse, that there is a full right to freedom of association, that a system of prevention of discrimination is in place, and regulations on working hours, pay and the environment are compliant.

In the event of non-compliance with these principles, the supplier is required to take the necessary corrective measures to improve the situation and to meet requirements within a reasonable period of time.

During the year, 57% of the key suppliers of³³ LU-VE Group sent in a completed Supplier Form.

The inability to ensure respect for human rights and environmental regulations along the supply chain is considered a moderate risk for the Group, which is to be carefully monitored and on which preventive actions will continue to be implemented.

³³ In 2022 the list of key suppliers was updated.

GENERAL PURCHASE CONDITIONS

When setting up the supplies or as soon as possible, by signing the General Acquisition Conditions, LU-VE Group suppliers are required to declare that they are aware of and share the fundamental principles on the basis of which the Group operates.

In addition to the clauses strictly linked to quality and operational fulfilment aspects, these Conditions also contain a set of principles requiring the supplier to:

- operate with ethics and integrity;
- limit its environmental impact by aiming for efficiency and monitoring aspects such as waste, effluent, air pollution and noise;
- ensure a healthy and safe working environment for all its employees;
- comply with international human rights conventions, such as the International Labour Organisation and the United Nations Convention on Children's Rights.

In the event of non-compliance or inaction by the supplier to take appropriate corrective measures, the Group company involved may terminate the business relationship, even before the contractual deadline.



SUPPLIER MONITORING AND AUDITS

Depending on developments in the external context, every six months the contacts at certain facilities in the Quality, Supply Chain and Purchasing departments meet to review the performance of key suppliers over the previous six months, examine any points for attention in supply and consequently define any appropriate improvement plans and update the audit plan to be carried out on the Group's new or long-standing suppliers. During these on site audits the suppliers' management and performance systems are assessed in terms of quality, environment and health and safety.

These half-yearly meetings, already operational at the Italian facilities since 2021, in 2022 have also included Finland and during 2023 their implementation is planned for the rest of the Group, starting with the European Countries. In 2022, 7 audits were carried out on supplier premises.

CHEMICAL SUBSTANCE MANAGEMENT

The LU-VE Group is engaged in a constant improvement project in the management of chemical substances contained in the products used at its facilities and in the products manufactured and marketed, with proactive management of the traceability of "substances of very high concern" (SVHC-CL) and restricted substances identified in the Regulation (EC) N. 1907/2006 (REACH), as well as the restricted substances identified by Directive 2011/65/EU (RoHS 2). The Group operates with the support of a consulting company that specialises in such issues, with particular reference to the validation of safety specifications and training provided at company facilities.

With regard to this regulatory framework, in 2022 the assessment of information submitted by suppliers continued and notifications of products containing SVHC were made on the SCIP database in accordance with the provisions of art. 9, par. 1 of Directive 2008/98/EU (Waste Framework Directive), in order to ensure safe management of the products at the end of their life cycle. Specific training activities also continued, which saw the participation of personnel from Refrion Srl and RMS Srl, new companies acquired by the LU-VE Group during 2022.

The Group quality organisation has been further reinforced with the inclusion of the Regulatory & Supplier Quality Manager, responsible for managing regulatory

governance, including the development and integration of supplier approval and assessment procedures also with regard to the management of chemical substances.

Among its improvement objectives, the LU-VE Group has planned the following activities:

- strengthening of the traceability management of REACH AND RoHS substances with the introduction of a risk-based approach,
- extension of the proactive approach to the traceability of substances controlled by other European and non-European regulations,
- the use of cultural leverage in its supply chain by providing special training for first level suppliers on REACH and RoHS issues.

RESPONSIBLE PROCUREMENT OF MINERALS AND METALS

The LU-VE Group is aware that in conflict or high-risk areas, the mining and trading of minerals can cause significant negative impacts and specifically: serious abuse associated with mining, transportation and trading of minerals, direct or indirect support for non-governmental armed groups, direct or indirect support for public or private security forces, corruption and false statements on the origin of minerals, money laundering, payment of taxes, duties and rights owed to governments.

In 2012, the United States Securities and Exchange Commission (SEC) approved the procurement law for "conflict minerals" as defined in the Dodd-Frank Wall Street Reform and Consumer Protection Act, Section 1502 ("SEC's Conflict Mineral Rule"). In 2017, the European Union adopted Regulation (EU) 2017/821 which establishes obligations regarding supply chain due diligence for EU importers of tin, tantalum and tungsten, gold and their derivatives, that originate in conflict or high-risk areas.

In the reference period for this report, the LU-VE Group has not been subject to obligations defined in the above regulatory framework; however, on a voluntary basis, the Group has opted for responsible procurement of tin, tantalum, tungsten, gold and their derivatives ("3TG").

The approach used is based on the OECD Due Diligence Guidance document for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas. The procedure adopted means that the management of the traceability chain is carried out through direct

and regular involvement of the relevant first level suppliers, using the Conflict Minerals Reporting Template (CMRT) as a communication tool. During the reference period the LU-VE Group has not actively participated in a sector programme, but has referred to data published by the Responsible Minerals Initiative. In the event of a risk identified by the Responsible Minerals Initiative (i.e. failure to pass the audit and/or failure to apply the Responsible Minerals Assurance Process - RMAP), the LU-VE group has activated the report mechanism envisaged the OECD guidelines by opening discussion with

the suppliers concerned. During the reference period for the data collection campaign, activated at the end of 2021 and completed in 2022, the LU-VE Group sent a risk report to one supplier, indicating a specific risk situation that had been identified. Other relevant data for the reference period are reported below.

ASSESSMENT PARAMETERS	VALUES
Number of suppliers interviewed	112
% Of answers obtained from first level suppliers	46%
Number of foundries or refineries identified	
<i>The foundries and refineries that are not first level LU-VE Group suppliers but are considered control points for due diligence in the mineral and metal supply chain.</i>	406
Number of foundries and refineries not "Conformant" or "Active", i.e. whose due diligence has been considered inadequate by the RMI, following voluntary participation in the Responsible Minerals Assurance Process, or pending assessment.	135



METHODOLOGICAL NOTE AND FURTHER CONSIDERATIONS

This document is the Consolidated Non-Financial Statement (the “NFS” or “Sustainability Report”) pursuant to Italian Legislative Decree no. 254 of 30 December 2016, implementing Directive 2014/95/EU, of the companies belonging to the Group comprising LU-VE S.p.A. and its subsidiaries (the “Group” or “LU-VE Group”). As provided for by Article 5 of Italian Legislative Decree no. 254/16, this document constitutes a separate report featuring dedicated wording to identify it as the Non-Financial Statement required by legislation. The NFS is drafted and published on an annual basis.

This NFS has been produced to the extent necessary to provide a clear understanding of the Group’s activities, progress, results and impact, considering the material topics envisaged by Articles 3 and 4 of Italian Legislative Decree no. 254/16.

The topics reported in this document were confirmed following an analysis of the trends and the Italian and global context, both in terms of national and international trends and current non-financial reporting trends.

In line with the requirements of the Decree, the reporting scope includes all LU-VE Group companies consolidated line by line except for the Company LU-VE Contardo Pacific Pty. Ltd., currently not operational. As regards the environmental data, in the three-year period only the Group’s manufacturing companies have been taken into consideration, with the exception of LUVEDIGITAL S.r.l., as the environmental impacts of the sales offices and of LUVEDIGITAL were not deemed significant. Note that these aspects for 2022 also exclude the Mel (Belluno, Italy) facility of SEST S.p.A. as it was acquired during the second half of the year. As from this NFS, the reporting scope also includes the production companies Refrion S.r.l. and RMS S.r.l. and the sales companies Refrion Deutschland GmbH and LU-VE UK LTD. TECNAIR LV S.p.A. has not been included as it was sold during the year.

For details on the corporate structure, aside from the information reported in this document, reference may be made to the Group’s annual documents: the Consolidated Financial Statements and the Report on Corporate Governance and Ownership Structure, both available on the company’s website.

The data and information provided in this document refers to the activities carried out by LU-VE Group in 2022 (from January to December 2022), when not specified otherwise. Furthermore, to provide a fair representation of performance, the use of estimates was limited as much as possible; when estimates were used, they were based on the best methodologies available and duly identified. Any reclassification of previously published comparative data is clearly indicated as such.

The Statement was prepared in accordance with the GRI Sustainability Reporting Standards, published by the Global Reporting Initiative - GRI (with “in accordance” application level).

Data could show rounding defects due to the representation in thousands/millions; it should be noted that the variations and the percentages are calculated on accurate data.

A table with the list of contents relative to GRI requirements, both general and topic-specific, is reported at the end of the document.

The principles for the definition of report content are suggested by the GRI and include:

- **Accuracy:** the Group reports correct information and with sufficient detail to allow assessment of its impacts
- **Balance:** the Group reports the information objectively by providing a fair representation of its negative and positive impacts
- **Clarity:** the use of clear and accessible language and of graphs and tables to represent the Group’s performance make this Report usable and easy to understand for stakeholders.
- **Comparability:** the indicators presented in the Report refer to the three-year period 2020-2022 and are accompanied by a comment relating to their performance so as to allow comparability of Group performance over time.
- **Completeness:** the material topics dealt with in the document are covered in their entirety and reflect the most material environmental, social and economic impacts for the Group’s activities, thus enabling stakeholders to fully assess the organisation’s performance in the reporting year.

- **Sustainability context:** the LU-VE Group performance presented in this document is portrayed within the wider context of the sustainability of the Company's business and reports the information relative to its impacts within the wider development context.
- **Timeliness:** the Group reports the information at regular intervals and makes it available in sufficient time to enable users of the data to make decisions.
- **Verifiability:** the company must collect, record, compile and analyse the data so that the information can be examined to establish its quality.

For any clarifications or details on the topics dealt with in this Sustainability Report, please contact us at the following address: **investor.relations@luvegroup.com**

As regards the value chain, the starting point and distinctive characteristic at the base of the Group's activities is the design of marketed solutions. Based on the characteristics of the end solution, the Group activates procurement procedures to obtain the raw materials - copper, aluminium, steel and iron and semi-finished components such as motorised fans and other catalogue and specialist parts.

As well as controlling the quality of the supplied goods, the Group can count on various manufacturing facilities located near or in the immediate vicinity of the main markets it serves. When the manufacturing process is complete, before the product is transferred to the logistics department, final testing is carried out. This activity is meant first and foremost to verify the exchanger's seal against any leaks as well as to control the electrical components.

The product is then sent to the Group's customers who operate on a global scale.



LIST OF LU-VE GROUP COMPANIES AND LOCATIONS WORLDWIDE

HEADQUARTERS

1	LU-VE S.p.A.	Uboldo (Varese) - Italy
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MANUFACTURING COMPANIES

1	LU-VE S.p.A.	Uboldo (Varese) - Italy
2	LUVEDIGITAL S.r.l. (software house)	Uboldo (Varese) - Italy
3	SEST S.p.A.	Limana, Mel (Belluno) - Italy
4	MANIFOLD S.r.l.	Uboldo (Varese) - Italy
5	THERMO GLASS DOOR S.p.A.	Travacò Siccomario (Pavia) - Italy
6	HEAT TRANSFER SYSTEMS (HTS) s.r.o.	Novosedly - Czech Republic
7	SEST LUVE-POLSKA Sp.z.o.o.	Gliwice - Poland
8	LU-VE SWEDEN AB	Asarum - Sweden
9	"000" SEST LUVE	Lipetsk - Russia
10	LU-VE HEAT EXCHANGERS (TIANMEN) Co. Ltd	Tianmen - China
11	SPIROTECH HEAT EXCHANGERS Private Limited	New Delhi - India
12	ZYKLUS HEAT TRANSFER, Inc.	Jacksonville - Texas, USA
13	AIR HEX ALONTE S.r.l.	Alonte (Vicenza) - Italy
14	FINCOIL LU-VE OY	Vantaa - Finland
15	Refrion S.r.l.	Flumignano di Talmassons, Villa Santina (Udine) - Italy
16	RMS S.r.l.	Flumignano di Talmassons (UD) - Italy

SALES COMPANIES

1	LU-VE Austria GmbH	Vienna - Austria
2	LU-VE Asia Pacific HK Ltd	Hong Kong
3	LU-VE Deutschland GmbH	Stuttgart - Germany
4	LU-VE France S.a.r.l.	Lyon - France
5	LU-VE IBERICA s.l.	Madrid - Spain
6	LU-VE Netherlands B.V.	Breda - The Netherlands
7	“OOO” LU-VE Moscow	Moscow - Russia
8	LU VE Middle East DMCC	Dubai - United Arab Emirates
9	LU-VE SOUTH KOREA LLC	Seoul - South Korea
10	LU-VE UK LTD	London - United Kingdom
11	Refrion Deutschland GmbH	Bad Segeberg - Germany

REPRESENTATIVE OFFICES




















1	Fincoil LU-VE Oy Denmark	Aarhus - Denmark
2	Fincoil LU-VE Oy Norway	Drammen - Norway
3	LU-VE NL Belgium	Brussels - Belgium
4	LU-VE Vietnam	HCM city - Vietnam
5	LU-VE UK	Fareham - United Kingdom
6	LU-VE Thailand	Bangkok - Thailand

In consideration of the Group's value chain, for each material topic the scope of impacts and the GRI Disclosure applied are indicated.

RELEVANT TOPICS		SCOPE OF IMPACTS		GRI
	Topic identified as relevant	Parties generating impacts	Type of impact	Reconciliation GRI Material Topics
ALL 4	Strategies for growth and long-term value creation	Entire Group	Generated by the Group	201 – Economic performance 207 – Tax
ADVANCED	Research, development and innovation	Entire Group	Generated by the Group; To which the Group contributes	N/A
	Products with reduced environmental impact	Entire Group	Generated by the Group	302 – Energy 417 – Marketing and labelling
	Customer orientation	Entire Group	Generated by the Group	416 – Customer health and safety
BETTER	Talent attraction and development	Entire Group	Generated by the Group	401 – Employment 404 – Training and education
	Workers' well-being and safety	Entire Group	Generated by the Group	403 – Occupational health and safety 405 – Diversity and equal opportunity
BALANCED	Business ethics and integrity	Entire Group	Generated by the Group; To which the Group contributes	205 – Anti-corruption 206 – Anti-competitive behaviour
	Support for local communities	Entire Group	Generated by the Group; To which the Group contributes	202 – Market presence
CONSCIOUS	Climate change	Entire Group	Generated by the Group; To which the Group contributes	302 – Energy 305 – Emissions
	Resource and waste management	Entire Group	Generated by the Group; To which the Group contributes	303 – Water and effluents 306 – Waste
	Responsible supply chain	Suppliers of manufacturing companies	Related to the Group through its business relationships	308 – Supplier environmental assessment 414 – Supplier social assessment
	Food safety and waste	Entire Group	Generated by the Group; To which the Group contributes	N/A

For each material topic, the report identifies a company management and organisational model, a formalised policy including those of due diligence, the results achieved through them and several non-financial performance indicators, as well as the main risks, generated or suffered, connected to the material topics and which derive from the Group's activities, its products, services or commercial dealings, including, when relevant, the supply and sub-contracting chains. Specifically, the management of significant non-financial risks identified by the risk assessment is reported under the respective chapters.

The relationship between the areas of Italian Legislative Decree 254 and the material topics, subject to this non-financial reporting, is described below.

RELEVANT TOPICS		AREAS OF ITALIAN LEGISLATIVE DECREE NO. 254			
Topic identified as relevant	Environmental	Social	Related to personnel	Respect for human rights	Anti-corruption (active and passive)
Strategies for growth and long-term value creation					
Research, development and innovation					
Products with reduced environmental impact					
Customer orientation					
Talent attraction and development					
Workers' well-being and safety					
Business ethics and integrity					
Support for local communities					
Climate change					
Resource and waste management					
Responsible supply chain					
Food safety and waste					

Note that the issue of biodiversity is not currently considered significant by the Group, by virtue of the initial assessments made by the Parent Company's Departments and then reconfirmed in the subsequent dedicated tables in 2022. This issue is considered immaterial in relation to the activity carried out by the Group and the location of its production facilities. Therefore, this topic is not reported on in this document.

As from publications after 1 January 2022, LU-VE S.p.A. is required to include information in the NFS as required by the "EU Taxonomy Regulation" relative to the environmentally sustainable activities performed by the Group, with regard to which reference should be made to the paragraph *"The European Taxonomy for environmentally sustainable activities"*.

Pursuant to Art. 8 of UE Regulation 2020/852, this information for the financial year 2022 concerns the proportion, in relation to the total, of three indicators: turnover, investments and operating costs of the Group related to the eligible and aligned activities to the Taxonomy with reference to the objectives of mitigation and adaptation to climate change. Further information is provided under the EU Delegated Regulation 2021/2178 for the definition of these indicators.

In this regard, note that the limited assurance of this Consolidated Non-Financial Statement carried out by the auditing firm Deloitte & Touche S.p.A. does not extend to such disclosure.

This NFS has been subject to limited assurance by an auditing firm, which issues a separate report declaring the compliance of the information provided, as regards all significant aspects, with the requirements of Articles 3 and 4 of Italian Legislative Decree 254/2016, as well as with the reporting standards adopted by the Group (GRI). This assurance was conducted according to the procedures identified in the "Report of the auditing firm" attached to this document.

This document was also approved by the Board of Directors of LU-VE S.p.A. on 14 March 2023 in consultation with the Control and Risk Committee responsible for sustainability topics since 2019. The document is published on the website of LU-VE Group in the "Investor relations" - Sustainability section.



Calculation methods

Some methodological information is provided below concerning several indicators used in this Sustainability Report.

General information

When the reporting standard requires non-financial information broken down by region, the following distinctions have been drawn:

- **Italy:** LU-VE S.p.A.; Air Hex Alonte S.r.l.; Luvedigital S.r.l.; Manifold S.r.l.; SEST S.p.A.; Thermo Glass Door (TGD) S.p.A.; Refrion S.r.l.; RMS S.r.l.
- **EU countries:** Heat Transfer Systems (HTS) s.r.o. (Repubblica Ceca); LU-VE Austria GmbH (Austria); LU-VE Deutschland GmbH (Germania); LU-VE France s.a.r.l. (Francia); LU-VE Iberica s.l. (Spagna); LU-VE Netherlands B.V. (Paesi Bassi); LU-VE Sweden AB (Svezia); Fincoil LU-VE OY (Finlandia); SEST-LUVE-Polska Sp.z.o.o. (Polonia); LU-VE UK LTD (Regno Unito); Refrion Deutschland GmbH (Germania).
- **Non-EU countries:** LU-VE Asia Pacific HK Ltd (Hong Kong), LU-VE Heat Exchangers (Tianmen) Co Ltd (Cina), LU-VE Middle East DMCC (EAU), LU-VE South Korea LLC (Corea del Sud), Spirotech Heat Exchangers Private Limited (India), "OOO" SEST-LUVE (Russia), "OOO" LU-VE Moscow (Russia), Zyklus Heat Transfer, Inc. (USA).



The value of LU-VE Group solutions

The sources of information reported in Chapter 1.2 “A growing concern” in the paragraph “Our ecosystem: products, applications, impacts” are detailed below:

- Energy Efficiency: “Cooling” Report, IEA, 2020
- Food security: “Food loss and waste must be reduced for greater food security and environmental sustainability” FAO, 2020
- Climate well-being: Report “The Future of Cooling Opportunities for energy-efficient air conditioning” OECD and IEA, 2018
- Digital transformation: Analysis “Data Centres and Data Transmission Networks” IEA, 2020

Furthermore, with regard to the value of LU-VE Group solutions, it is worth noting that a further category of products sold by the Group must be added to the turnover percentages published, grouped as a single category named “Other”, which includes the solutions for the white goods industry and other transport solutions.

Enhanced sustainability governance

The governance of LU-VE Group aims to maximise the value created for its shareholders and for all stakeholders. The aim is to ensure the full integrity and sustainability of its business.

The Group adopts a **traditional governance model**. In 2017, at the time of listing on the MTA market, LU-VE Group adopted the Corporate Governance Code for Listed Companies, approved by the Corporate Governance Committee and promoted by Borsa Italiana S.p.A., ABI, Ania, Assogestioni, Assonime and Confindustria. In December 2020, the Company revoked its adoption of the Code of Conduct and resolved instead to adopt the newer version of the Corporate Governance Code, also approved by the Corporate Governance Committee, from 1 January 2021. Subsequently, the Board of Directors adopted other resolutions to implement the principles and recommendations of the new Corporate Governance Code³⁴.

There are clear and transparent processes to manage and control specific aspects linked to the Group's governance:

• Appointment, selection and composition of the Board of Directors and structure

When renewing the Board of Directors, the outgoing Board can express guidance to the shareholders by presenting lists for renewal of the Board of Directors. The appointment of the Board of Directors takes place on the basis of a list vote, also with a view to guaranteeing minority representation, as regulated by the Articles of Association; based on current regulations, 2/5 of Board members must be from the least represented gender. The lists can be presented by shareholders who alone or together with others, can claim ownership of at least 2.5% of the share capital percentage. Each list for appointment to the Board of Directors, based on Borsa Italiana Regulations issued for companies listed in the STAR segment, must contain the names of at least three candidates that satisfy the independence requirements. On the LU-VE Board of Directors there are currently four directors who meet the independence requirements. The Chairman of the Board of Statutory Auditors and a member of the Board of Directors are chosen from the minority list.

The term of office start dates of Board of Directors members are detailed below:

- MATTEO LIBERALI – Chief Executive Officer, member of the Board of Directors since 15 May 2003 and Chairman of the Board of Directors from 23 January 2023.
- PIER LUIGI FAGGIOLI – Vice Chairman of the Board of Directors in office from 18 July 2014.
- MICHELE FAGGIOLI – Chief Operating Officer, member of the Board of Directors since 18 July 2014.

³⁴ Informazioni dettagliate sono contenute nella relazione sul governo societario e gli assetti proprietari dell'esercizio 2022

- RAFFAELLA CAGLIANO – Independent director in office from 29 April 2020.
- GUIDO GIUSEPPE CRESPI – Independent director in office from 29 April 2020.
- ANNA GERVASONI – Independent director in office from 10 March 2017.
- FABIO LIBERALI – Non-executive director in office from 23 October 2008.
- LAURA OLIVA – Non-executive director in office from 10 March 2017.
- STEFANO PALEARI – Independent director in office from 28 April 2015, appointed Lead Independent Director on 13 March 2017.
- ROBERTA PIERANTONI – Non-executive director in office from 10 March 2017.
- MARCO CLAUDIO VITALE – Non-executive director in office from 28 November 1985.

Among the Board of Directors members:

- One member holds the position of Independent Director in two other listed companies
- One member holds the position of Independent Director, Lead Independent Director and member of the Appointments and Governance Committee in another listed company
- One member holds the position of Director in another relevant company
- One member holds the position of Independent Director in another listed company

The three-year mandate of the Board of Directors currently in office will lapse on approval of the financial statements at 31.12.2022.

The Chairman of the Board of Directors is Matteo Liberali, who is also the main LU-VE manager (CEO), with broad management powers.

The Board of Directors considered it appropriate to assign the role of Chairman to Matteo Liberali, who was already the CEO, based on the consideration that he would be appointed Chairman following the death of Iginio Liberali, the founder who had always been the Company chairman, which made it necessary to give the Group, all its employees and the market a strong message of unity, togetherness and continuity with the past, as a way of ensuring all stakeholders' continued trust in the Group's current executive management.

It should be remembered that the CEO must report to the Board, at least every quarter, on the transactions of greater importance undertaken; furthermore, the Board of Directors has adopted the "Guidelines on particularly significant transactions" that regulate how decisions are reached and the involvement of the Board for transactions that exceed certain quantitative and qualitative thresholds.

Also note that LU-VE, a listed company, has adopted a "Procedure for transactions with related parties" compliant with the provisions of the related Consob Regulation, which require that such transactions (unless they are for negligible amounts or executed as standard business transactions and at arm's length) must be assessed by a specific committee.

Furthermore, as the Chairman of the Board of Directors of LU-VE has always held important executive powers, with effect from the Company's listing on the Euronext market in 2017 the Board of Directors appointed Stefano Paleari as Lead *Independent Director*, who has been assigned all the powers that the Corporate Governance Code envisages for this office.

• Board of Directors performance assessment

At least at the time of renewal, the Board of Directors engages in a board evaluation process on the size, composition and skills, operations and activities of the Board and its Board Committees.

The Control and Risk Committee, with adequate preliminary investigation activities, supports the assessments and decisions of the Board of Directors relating to the Internal Control and Risk Management System, as well as those relating to the approval of periodic financial reporting; The Control and Risk Committee is also assigned responsibility for the supervision of processes and activities relating to sustainability, as described in the Corporate Governance Report.

The Remuneration and Appointments Committee is responsible for assisting and supporting the Board by carrying out tasks and making proposals on the board evaluation, establishing the optimum composition of the Board and the Committees

and assists the Board of Directors in the preparation of remuneration policies for members of the Board of Directors, any general managers and top management, formulating among other things proposals for the remuneration of executive directors and other directors who hold specific offices, as well as setting the performance objectives linked to the variable component of that remuneration. The Board of Directors defines the MBOs on an annual basis while the Long-Term Incentives (LTI) are prepared every three years. In the “Annual report on remuneration policy and the remuneration paid”, the process by which the remuneration policies are defined and remuneration calculated is indicated.

Within the context of monitoring the Group’s social impacts, the Board of Directors has, among other things, requested periodic monitoring of work-related injuries and all executive director MBOs envisage a target linked to achievement of certain accident prevention targets.

• Composition and term of office of other Committees

COMMITTEE	COMPOSITION	TERM OF OFFICE
Control and Risk Committee	Composed of Stefano Paleari (Chairman), Anna Gervasoni and Laura Oliva	All members have been in office since 29.04.2020; more specifically, the two Committees were set up on 29.4.2020, but on 21.12.2020, following the Company's adoption of the new Corporate Governance Code, their composition was reconfirmed.
Remuneration and Appointments Committee	Composed of Stefano Paleari (Chairman), Anna Gervasoni and Roberta Pierantoni	
Independent Committee	Composed of Stefano Paleari (Chairman), Raffaella Cagliano and Guido Giuseppe Crespi	Established on 29.06.2021. The current members have been in office since 29.06.2021.

• Conflicts of interest

Conflicts of interest are prevented and mitigated within the context of the current governance model.

Pursuant to current regulations, a director who has an interest, on their own behalf or that of third parties, in conflict with the interests of the company regarding a certain transaction must inform the other directors and the Board of Statutory Auditors, specifying the nature, terms, origin and extent of the conflict; if it is the CEO, he/she must refrain from executing the transaction and refer it to the Board. The Board of Directors, if it decides to execute the transaction, must provide sufficient reasons and explain the benefits for the company. The decision regarding the transaction, if carried by casting vote of the director in conflict of interest, may be challenged by the other directors or by the Board of Statutory Auditors, if it could prove detrimental to the company.

Furthermore, the Consob Regulation on Transactions with Related Parties requires that the company adopt a specific procedure that establishes the rules to be followed whenever LU-VE or one of its subsidiaries enters into a transaction with a related party: this procedure was approved by the Board of Directors on 29 June 2021 and is in force since 1 July 2021 (See website <https://investor.luvegroup.com/it/governo-societario/codici-di-condotta-procedure/procedure-societarie/>). For the purposes of applying this Procedure, Related Parties are identified every six months by the Company in accordance with the International Accounting Standards in force from time to time and has established a register of related parties.

In the event of transactions with related parties that match specific requirements, the company must publish an information document. All transactions with related parties are also specifically indicated in the annual and half-yearly financial reports. In compliance with current regulations, the company’s Board of Directors arranges annual identification of the “ultimate beneficial owner”, i.e. the natural person who is the ultimate beneficiary of the business activities.

Lastly, in accordance with current regulations, each year the Board of Directors verifies whether the direct controlling entity of LU-VE exercises management and coordination activities: this verification has thus far ruled out that the direct controlling entity exercises management and coordination activities over LU-VE.

The European taxonomy for environmentally sustainable activities

Specifically:

- For the calculation of the turnover KPI, the denominator considers the sum related only to products revenues as reported in the document Directors' Report;
- The CAPEX KPI takes into account the sum of all additions during 2021 to tangible and intangible elements of the balance sheet, including capitalised R&D assets and rights of use arising from IFRS 16;
- The OPEX KPI takes into account the sum of operating expenses associated with R&D, maintenance of production facilities, day-to-day servicing of assets and short-term leases.

Detailed tables

	NUMBER OF MEMBERS OF THE BOARD OF DIRECTORS BY GENDER (at 31.12.21)			% OF MEMBERS OF THE BOARD OF DIRECTORS BY GENDER (at 31.12.21)		
	2020	2021	2022	2020	2021	2022
Men	8	8	7	67%	67%	64%
Women	4	4	4	33%	33%	36%
Total	12	12	11	100%	100%	100%

	NUMBER OF MEMBERS OF THE BOARD OF DIRECTORS BY AGE (at 31.12.21)			% OF MEMBERS OF THE BOARD OF DIRECTORS BY AGE (at 31.12.21)		
	2020	2021	2022	2020	2021	2022
Under 30	0	0	0	0	0	0
Between 30 and 50	2	1	0	17%	8%	0%
Over 50	10	11	11	83%	92%	100%
Total	12	12	11	100%	100%	100%



Reductions in energy requirements of products and services

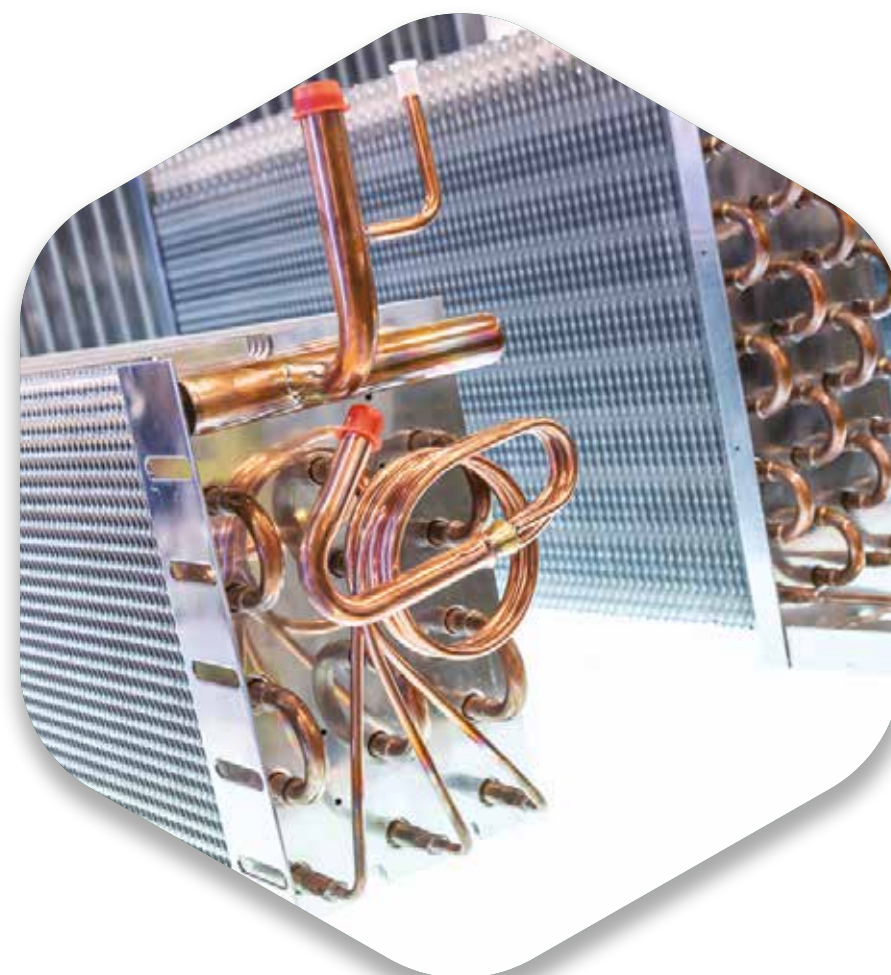
For GRI 302-5, the reduction in energy requirements of LU-VE Group solutions is expressed as a percentage increase in energy efficiency.

The percentage of energy efficiency indicated for the “HELIOS” solution is the result of calculations and comparison studies between the existing product ranges and the new lines in question, based on improvements in terms of energy consumption [J].

Sustainable refrigerant fluids and products with efficient motors

With reference to percentages on the trends of products marketed by the Group indicated in the paragraphs “Sustainable refrigerant fluids” and “Products with efficient motors”, note that these data were processed in 2021 with the support of a dedicated data analysis company that made it possible to correlate the various corporate datasets and have been updated with data for 2022.

The scope of the analysis covered the sales of “air cooled equipment” from 2012 to 2022 and assessed their sales figures over these 11 years.





General information

For each reporting year, the calculation of the Group's personnel (broken down by geographical area, gender, contract type and work type) is based on the data received from the various sales and manufacturing branches and on extractions from the centralised IT system. As in previous years, the figures are expressed in terms of headcount as at 31 December.

The term "collaborators", where used, includes: employees, contract workers and apprentices.

For each year, the calculation of dismissed workers includes contract terminations as at 31/12 of the previous year, while it does not include employees dismissed as at 31/12 of the year in question, as these are considered as part of the workforce until said date.

The hiring and turnover rate, broken down by gender, age and geographical area, is calculated using the number of employees relative to the type of subdivision considered.

Transfers from agency worker to employee were also considered as recruitment.

Detailed tables

In order to ensure continuity in reporting compared to previous years, detailed tables are provided below. The body of the document contains tables with percentage formulas to improve readability of the data.

NUMBER OF EMPLOYEES BY CONTRACTUAL TYPE AND GENDER									
	Permanent contract			Temporary contract			Total		
	2020	2021	2022	2020	2021	2022	2020	2021	2022
Men	1,651	1,786	2,000	263	287	281	1,914	2,073	2,283
Women	682	744	823	127	223	219	809	967	1,042
Total	2,333	2,530	2,823	390	510	500	2,723	3,040	3,325³⁵

NUMBER OF EMPLOYEES BY CONTRACT TYPE AND GEOGRAPHICAL AREA									
	Permanent contract			Temporary contract			Total		
	2020	2021	2022	2020	2021	2022	2020	2021	2022
Italy	969	997	1,158	7	27	23	976	1,024	1,181
EU countries	875	977	1,015	279	276	328	1,154	1,253	1,345
Non-EU countries	489	556	650	104	207	149	593	763	799
Total	2,333	2,530	2,823	390	510	500	2,723	3,040	3,325³⁶

³⁵ Note that the 3,325 employees of the 2022 total also include 2 male employees from a geographical area outside EU countries with a zero hour contract.

³⁶ Note that the 3,325 employees of the 2022 total also include 2 male employees from a geographical area outside EU countries with a zero hour contract.

NUMBER OF EMPLOYEES BY CONTRACT TYPE AND GENDER

	Full-time			Part-time			Total		
	2020	2021	2022	2020	2021	2022	2020	2021	2022
Men	1,905	2,058	2,260	9	15	23	1,914	2,073	2,283
Women	743	898	964	66	69	78	809	967	1,042
Total	2,648	2,956	3,224	75	84	101	2,723	3,040	3,325

Relations with trade unions

Note that the collective bargaining agreements stipulated for employees with the Finnish company Fincoil LU-VE OY cover 100% of employees except for one contract in the Executive category.

Injury rates

The injury rates were calculated as reported below:

- Frequency index (or rate of work-related injuries): number of injuries/hours worked*1,000,000
- Severity index (or severity rate): number of days lost per injury/hours worked*1,000,000
- High-consequence injury index (or high-consequence work-related injury rate): the number of high-consequence work-related injuries, namely that recorded total days of absence exceeding six months/hours worked*1,000,000

The calculation of the rates for the three years includes only employees, while interns or personnel working on the basis of project contracts were excluded.

The frequency and severity index calculations include commuting injuries only when the transport was organised by the Group.

The calculation of the injury frequency and severity rate includes hours worked and (any) accidents of employees on secondment in the country to which the employees are seconded.

Salary and remuneration

GRI 405-2 takes the following data into account:

- “Basic salary”: Gross annual salary + any potential monthly payments included in the contract
- “Total remuneration”: Basic salary + any other actual remuneration (MBO, Spot Bonus, overtime, benefits, allowances)

The calculation of the ratio between basic salary and the ratio between total remuneration of women and men, broken down by geographical area and professional category, the salary of workers on secondment was considered with reference to the country to which the employees have been seconded.

Annual total compensation ratio

The ratio between total annual remuneration - GRI 2-21 - has been calculated taking into consideration the employees on the payroll at 31 December 2022 within the Group's companies.

The ratio between the total annual remuneration of the person that receives the maximum remuneration (CEO) and the median total annual remuneration for all employees amounts to 37.86. Referring only to employees of LU-VE Group Italy, this value amounts to 29.55.

Moreover, LU-VE Group reports in the document “Annual Report on Remuneration Policy and Remuneration Paid” the trend of relationships between the remuneration of the Executive Directors and the average gross annual remuneration of employees of LU-VE Group Italy.

Employee remuneration takes into account basic salary and any other actual remuneration (MBOs, Spot Bonuses, overtime, benefits, allowances).

Only for the Russian company “OOO” SEST-LUVE the figure for individual remunerations has been calculated based on the average remunerations for each professional category as reported within the context of the GRI 405-2 indicator.

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For GRI 202-2, the percentage of Directors from local communities was calculated following this methodology:

- **Definition of “Executive”:** Officers who in the management systems are referred to as Employee-level Director
- **Definition of “local community”:** nationality with respect to the nation of the legal entity
- **Definition of “locations”:** all legal entities of the Group



Energy consumption

The conversion factors used to standardise energy consumption come from the DEFRA table “UK Government GHG Conversion Factors for Company Reporting – Fuel properties” for the years 2020, 2021 and 2022.

Greenhouse gas emissions

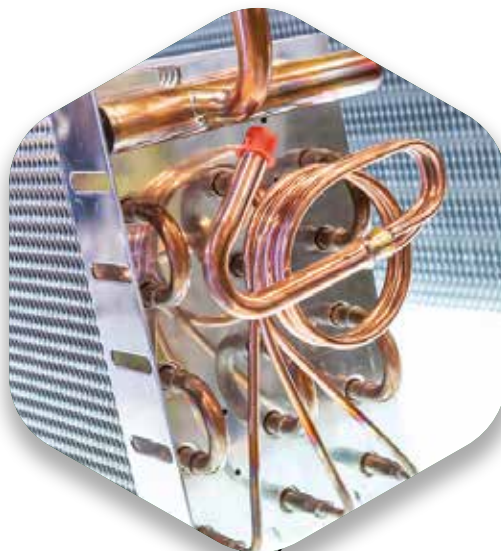
The emissions were calculated using the following method:

- **Direct emissions (Scope 1):** emissions linked to refrigerant gas leaks, the consumption of natural gas and diesel for heating and fuel for the company car fleet, were calculated using the emission factors reported in DEFRA’s “UK Government GHG Conversion Factors for Company Reporting” in the 2020, 2021 and 2022 editions. The emissions were calculated in CO₂ equivalent, as they take into consideration the CO₂, CH₄ and N₂O gases.
- **Indirect emissions (Scope 2):** indirect emissions correspond to the consumption of electricity and heat from district heating. The calculation of emissions linked to electricity calculated according to the “market-based” approach used the factors presented in Figure 4 of the document “European Residual Mixes” (2019, 2020 and 2021 editions) published by the Association of Issuing Bodies for European countries, and the factors published by the Center for Resource solutions in “Green-e Energy Residual Mix Emissions Rates” (2020, 2021 and 2022 editions) for the United States of America. For the countries for which residual mix emission factors are not available, in accordance with the provisions of the reporting standards, the same factors as those in the “location-based” method were used. For the calculation of the latter relative to 2022 and 2021, the factors presented in “Table 49 - Main socio-economic and energy indicators” published by Terna in the “International Comparison” section were considered, according to the most recent version available at the time of publication of this document (Terna 2020, 2019 data), while for the year 2020 the respective previous edition was used. Lastly, for the calculation of emissions relating to consumption from district heating, the coefficients used are those reported in DEFRA’s “UK Government GHG Conversion Factors for Company Reporting” in the 2020, 2021 and 2022 editions.

Both calculation methodologies were used to calculate indirect emissions. Market-based is based on the CO₂ emissions emitted by the energy suppliers from whom the organisation purchases electricity through a contract. The location-based method is based on average emission factors related to energy generation for well-defined geographical boundaries, including local, sub-national or national boundaries. The indicators reported represent the best possible estimate on the basis of data available when this document was prepared.

Water withdrawals and effluents

For GRI 303-3 and 303-4, the water tables indicate the measurement unit of m3 for reporting purposes.



Statement of use	The LU-VE Group has presented a report in compliance with GRI Standards for the period from 1 January 2022 to 31 December 2022
GRI 1 used	GRI 1: Foundation 2021
Stan Applicable GRI Sector Standard(s)	N/A

General disclosures					
GRI Standard	Disclosure	Location	Omission		
			Requirement(s) omitted	Reason	Explanation
GRI 2: General Disclosure 2022	2-1 Organizational details	A great Group, pp.14-15 Methodological note and further considerations, pp.144-145			
	2-2 Entities included in the organization's sustainability reporting	A great Group, pp.14-15 Methodological note and further considerations, pp.142-145			
	2-3 Reporting period, frequency and contact point	30 March 2023 Methodological note and further considerations, pp.142			
	2-4 Restatements of information	Focus on occupational health and safety, pp.51 A new sustainability plan, pp.100			
	2-5 External assurance	Report of the auditing firm, pp.166-169			
	2-6 Activities, value chain and other business relationships	A growing concern, pp.16-21 Enhanced sustainability governance, pp.22-39 New solutions and applications, pp.74-79 Looking at the impacts of our suppliers, pp.137-141 Methodological note and further considerations, pp.143			
	2-7 Employees	The LU-VE Group Family, pp.90-97 Methodological note and further considerations, pp.156-157			
	2-8 Workers who are not employees	The LU-VE Group Family, pp.90-97 Methodological note and further considerations, pp.156			
	2-9 Governance structure and composition	Enhanced sustainability governance, pp.22-39 Methodological note and further considerations, pp.150-153			
	2-10 Nomination and selection of the highest governance body	Methodological note and further considerations, pp.150-151			
	2-11 Chair of the highest governance body	Enhanced sustainability governance, pp.24-25 Methodological note and further considerations, pp.151			
	2-12 Role of the highest governance body in overseeing the management of impacts	Enhanced sustainability governance, 22-29 A new sustainability plan, pp.40-44			
	2-13 Delegation of responsibility for managing impacts	Enhanced sustainability governance, pp.22-25 A new sustainability plan, pp.40-44			
	2-14 Role of the highest governance body in sustainability reporting	Enhanced sustainability governance, pp.22-25 A new sustainability plan, pp.40-44			
	2-15 Conflicts of interest	Methodological note and further considerations, pp.152			
	2-16 Communication of critical concerns	Enhanced sustainability governance, pp.26			
	2-17 Collective knowledge of the highest governance body	Enhanced sustainability governance, pp.22-26			
	2-18 Evaluation of the performance of the highest governance body	Methodological note and further considerations, pp.151-152			

General disclosures					
GRI Standard	Disclosure	Location	Omission		
			Requirement(s) omitted	Reason	Explanation
GRI 2: General Disclosure 2022	2-19 Remuneration policies	Methodological note and further considerations, pp.151-152 <i>The Board of Directors and top management remuneration policies are detailed in the "Annual report on the remuneration policy and the remuneration paid"</i>			
	2-20 Process to determine remuneration	Methodological note and further considerations, pp.151-152 <i>In the "Annual report on the remuneration policy and the remuneration paid", the process by which the remuneration policies are established and calculated is indicated</i>			
	2-21 Annual total compensation ratio	Methodological Note and further considerations, pp.157	b) report the ratio of the percentage increase in annual total compensation for the organization's highest-paid individual to the median percentage increase in annual total compensation for all employees (excluding the highest-paid individual).	Information unavailable / Incomplete.	Data required by the indicator GRI 2-21 b) is not currently available. The Group is committed to include this information from the next Non-financial Statements
	2-22 Statement on sustainable development strategy	Leadership with passion, pp.5			
	2-23 Policy commitments	Enhanced sustainability governance, pp.28-29			
	2-24 Embedding policy commitments	Enhanced sustainability governance, pp. 28-29 A new sustainability plan, pp.44			
	2-25 Processes to remediate negative impacts	A new sustainability plan, pp.40-44			
	2-26 Mechanisms for seeking advice and raising concerns	Enhanced sustainability governance, pp. 26			
	2-27 Compliance with laws and regulations	Enhanced sustainability governance, pp.26			
	2-28 Membership associations	Eurovent (LU-VE SpA), Unindustria Varese (LU-VE SpA)			
	2-29 Approach to stakeholder engagement	Enhanced sustainability governance, pp.31			
	2-30 Collective bargaining agreements	The LU-VE Group Family, pp.36 Methodological Note and further considerations, pp.157			
Material topics					
GRI 3: Material Topics 2021	3-1 Process to determine material topics	A new sustainability plan, pp.40-43			
	3-2 List of material topics	A new sustainability plan, pp.40-43			

Climate Change					
GRI 3: Material Topics 2021	3-3 Management of material topics	Looking at our environmental impacts, pp.126-136			
GRI 302: Energy 2016	302-1 Energy consumption within the organization	Looking at our environmental impacts, pp.127-128			
GRI 302: Energy 2016	302-3 Energy intensity	Looking at our environmental impacts, pp.129			
GRI 305: Emissions 2016	305-1 Direct (Scope 1) GHG emissions	Looking at our environmental impacts, pp.128 Methodological note and further considerations, pp.159			
GRI 305: Emissions 2016	305-2 Energy indirect (Scope 2) GHG emissions	Looking at our environmental impacts, pp.128 Methodological note and further considerations, pp.159			
GRI 305: Emissions 2016	305-3 Other indirect (Scope 3) GHG emissions	Looking at our environmental impacts, pp.126	Indirect (Scope 3) GHG gas emissions in tons of CO _{2eq}	Information unavailable / Incomplete.	The information required to calculate the indirect (Scope 3) GHG gas emissions in tons of CO _{2eq} are not available due to the complexity of the value chain. The Group is committed to include this information from the next Non-financial Statements and it set up an assessment project in 2022 that has analyzed the categories included in the "GHG Protocol" international framework.
GRI 305: Emissions 2016	305-4 GHG emissions intensity	Looking at our environmental impacts, pp.129			
GRI 305: Emissions 2016	305-5 Reduction of GHG emissions	Looking at our environmental impacts, pp.127			
GRI 305: Emissions 2016	305-7 Nitrogen oxides (NOx), sulphur oxides (SOx), and other significant air emissions	Looking at our environmental impacts, pp.130			
Research, development and innovation					
GRI 3: Material Topics 2021	3-3 Management of material topics	We are Eurovent certified, pp.61-62 Pushing for change, pp.63-73 New solutions and new applications, pp.74-79 Working together on innovation, pp.80-85			
Customer orientation					
GRI 3: Material Topics 2021	3-3 Management of material topics	We are Eurovent certified, pp.61-62 Pushing for change, pp.63-73 New solutions and new applications, pp.74-79 Working together on innovation, pp.80-85			
GRI 416: Customer Health and Safety 2016	416-1 Assessment of the health and safety impacts of product and service categories	Working together on innovation, pp.84			

Workers' well-being and safety					
GRI 3: Material Topics 2021	3-3 Management of material topics	The LU-VE Group Family, pp.90-97 Focus on occupational health and safety, pp.100-103			
GRI 403: Occupational Health and Safety 2018	403-1 Occupational health and safety management system	Focus on occupational health and safety, pp.100-103			
GRI 403: Occupational Health and Safety 2018	403-2 Hazard identification, risk assessment, and incident investigation	Focus on occupational health and safety, pp.100-103			
GRI 403: Occupational Health and Safety 2018	403-3 Occupational health services	Focus on occupational health and safety, pp.100-103			
GRI 403: Occupational Health and Safety 2018	403-4 Worker participation, consultation, and communication on occupational health and safety	Focus on occupational health and safety, pp.100-103			
GRI 403: Occupational Health and Safety 2018	403-5 Worker training on occupational health and safety	Training and growth, pp.98 Focus on occupational health and safety, pp.101-102			
GRI 403: Occupational Health and Safety 2018	403-6 Promotion of worker health	Focus on occupational health and safety, pp.100-103			
GRI 403: Occupational Health and Safety 2018	403-7 Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	Focus on occupational health and safety, pp.100-103			
GRI 403: Occupational Health and Safety 2018	403-9 Work-related injuries	Focus on occupational health and safety, pp.100-101			
GRI 403: Occupational Health and Safety 2018	403-10 Work-related ill health	Focus on occupational health and safety, pp.101			
GRI 405: Diversity and Equal Opportunity 2016	405-1 Diversity of governance bodies and employees	Enhanced sustainability governance, pp.24-25 The LU-VE Group Family, pp.90-91 Methodological note and further considerations, pp.153			
GRI 405: Diversity and Equal Opportunity 2016	405-2 Ratio of basic salary and remuneration of women to men	The LU-VE Group Family, pp.95 Methodological note and further considerations, pp.157			
Products with reduced environmental impact					
GRI 3: Material Topics 2021	3-3 Management of material topics	We are Eurovent certified, pp.61-62 Pushing for change, pp.63-73 New solutions and new applications, pp.74-79 Working together on innovation, pp.80-85			
GRI 302: Energy 2016	302-5 Reductions in energy requirements of products and services	New solutions and new applications, pp.74 Methodological note and further considerations, pp.154			
GRI 417: Marketing and Labeling 2016	417-2 Incidents of non-compliance concerning product and service information and labeling	Enhanced sustainability governance, pp.26			

Business ethics and integrity					
GRI 3: Material Topics 2021	3-3 Management of material topics	Enhanced sustainability governance, pp.22-26			
GRI 205: Anti-corruption 2016	205-3 Confirmed incidents of corruption and actions taken	Enhanced sustainability governance, pp.26			
GRI 206: Anti-competitive Behavior 2016	206-1 Legal actions for anti-competitive behavior, anti-trust, and monopoly practices	Enhanced sustainability governance, pp.26			
Food safety and waste					
GRI 3: Material Topics 2021	3-3 Management of material topics	A growing concern, pp.18-21 New solutions and new applications, pp. 74-79 Working together on innovation, pp.80			
Talent attraction and development					
GRI 3: Material Topics 2021	3-3 Management of material topics	The LU-VE Group Family, pp.90-97 Training and growth, pp.98-99			
GRI 401: Employment 2016	401-1 New employee hires and employee turnover	The LU-VE Group Family, pp.92-93			
GRI 401: Employment 2016	401-2 Benefits provided to full-time employees that are not provided to temporary or part-time employees	The LU-VE Group Family, pp.97			
404-1 Average hours of training per year per employee	404-1 Average hours of training per year per employee	Training and growth, pp.98			
Support for local communities					
GRI 3: Material Topics 2021	3-3 Management of material topics	We support employees and their families, pp.108-113 We support local communities, pp.114-121			
GRI 202: Market Presence 2016	202-2 Proportion of senior management hired from the local community	We support employees and their families, pp.112 Methodological note and further considerations, pp.158			
Strategies for growth and long-term value creation					
GRI 3: Material Topics 2021	3-3 Management of material topics	A new sustainability plan, pp.40-45			
GRI 201: Economic Performance 2016	201-1 Direct economic value generated and distributed	A new sustainability plan, pp.51			
GRI 207: Tax 2019	207-1 Approach to tax	A new sustainability plan, pp.53			
GRI 207: Tax 2019	207-2 Tax governance, control, and risk management	A new sustainability plan, pp.53			
GRI 207: Tax 2019	207-3 Stakeholder engagement and management of concerns related to tax	A new sustainability plan, pp.53			
GRI 207: Tax 2019	207-4 Country-by-country reporting	A new sustainability plan, pp.54			

Responsible supply chain					
GRI 3: Material Topics 2021	3-3 Management of material topics	Looking at the impacts of our suppliers, pp.137-141			
GRI 308: Supplier Environmental Assessment 2016	308-1 New suppliers that were screened using environmental criteria	Looking at the impacts of our suppliers, pp.138			
GRI 414: Supplier Social Assessment 2016	414-1 New suppliers that were screened using social criteria	Looking at the impacts of our suppliers, pp.138			
Resource and waste management					
GRI 3: Material Topics 2021	3-3 Management of material topics	Looking at our environmental impacts, pp.126-136			
GRI 303: Water and Effluents 2018	303-1 Interactions with water as a shared resource	Looking at our environmental impacts, pp.131-132			
GRI 303: Water and Effluents 2018	303-2 Management of water discharge-related impacts	Looking at our environmental impacts, pp.131-132			
GRI 303: Water and Effluents 2018	303-3 Water withdrawal	Looking at our environmental impacts, pp.131-132 Methodological note and further considerations, pp.159			
GRI 303: Water and Effluents 2018	303-4 Water discharge	Looking at our environmental impacts, pp.132 Methodological note and further considerations, pp.159			
GRI 306: Waste 2020	306-1 Waste generation and significant waste-related impacts	Looking at our environmental impacts, pp.133-136			
GRI 306: Waste 2020	306-2 Management of significant waste-related impacts	Looking at our environmental impacts, pp.133-136			
GRI 306: Waste 2020	306-3 Waste generated	Looking at our environmental impacts, pp.134-136			
GRI 306: Waste 2020	306-4 Waste diverted from disposal	Looking at our environmental impacts, pp.134-136			



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INDEPENDENT AUDITOR'S REPORT ON THE CONSOLIDATED NON-FINANCIAL STATEMENT PURSUANT TO ARTICLE 3, PARAGRAPH 10 OF LEGISLATIVE DECREE No. 254 OF DECEMBER 30, 2016 AND ART. 5 OF CONSOB REGULATION N. 20267 OF JANUARY 2018

To the Board of Directors of
Lu-Ve S.p.A.

Pursuant to article 3, paragraph 10, of the Legislative Decree no. 254 of December 30, 2016 (hereinafter "Decree") and to article 5 of the CONSOB Regulation n. 20267/2018, we have carried out a limited assurance engagement on the Consolidated Non-Financial Statement of Lu-Ve S.p.A. and its subsidiaries (hereinafter "Lu-Ve Group" or "Group") as of December 31, 2022 prepared on the basis of art. 4 of the Decree and approved by the Board of Directors on March 14, 2023 (hereinafter "NFS").

Our limited assurance engagement does not extend to the information required by art. 8 of the European Regulation 2020/852 included in the paragraph "The European Taxonomy for environmentally sustainable activities".

Responsibility of the Directors and the Board of Statutory Auditors for the NFS

The Directors are responsible for the preparation of the NFS in accordance with articles 3 and 4 of the Decree and the "Global Reporting Initiative Sustainability Reporting Standards" established by GRI - Global Reporting Initiative ("GRI Standards"), which they have identified as reporting framework.

The Directors are also responsible, within the terms established by law, for such internal control as they determine is necessary to enable the preparation of NFS that is free from material misstatement, whether due to fraud or error.

The Directors are moreover responsible for defining the contents of the NFS, within the topics specified in article 3, paragraph 1, of the Decree, taking into account the activities and characteristics of the Group, and to the extent necessary in order to ensure the understanding of the Group's activities, its trends, performance and the related impacts.

Finally, the Directors are responsible for defining the business management model and the organisation of the Group's activities as well as, with reference to the topics detected and reported in the NFS, for the policies pursued by the Group and for identifying and managing the risks generated or undertaken by the Group.

The Board of Statutory Auditors is responsible for overseeing, within the terms established by law, the compliance with the provisions set out in the Decree.

Ancona Bari Bergamo Bologna Brescia Cagliari Firenze Genova Milano Napoli Padova Parma Roma Torino Treviso Udine Verona

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Auditor's Independence and quality control

We have complied with the independence and other ethical requirements of the *Code of Ethics for Professional Accountants* issued by the *International Ethics Standards Board for Accountants*, which is founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality and professional behaviour. Our auditing firm applies *International Standard on Quality Control 1* (ISQC Italia 1) and, accordingly, maintains a comprehensive system of quality control including documented policies and procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements.

Auditor's responsibility

Our responsibility is to express our conclusion based on the procedures performed about the compliance of the NFS with the Decree and the GRI Standards. We conducted our work in accordance with the criteria established in the *"International Standard on Assurance Engagements ISAE 3000 (Revised) – Assurance Engagements Other than Audits or Reviews of Historical Financial Information"* (hereinafter *"ISAE 3000 Revised"*), issued by the *International Auditing and Assurance Standards Board* (IAASB) for limited assurance engagements. The standard requires that we plan and perform the engagement to obtain limited assurance whether the NFS is free from material misstatement. Therefore, the procedures performed in a limited assurance engagement are less than those performed in a reasonable assurance engagement in accordance with ISAE 3000 Revised, and, therefore, do not enable us to obtain assurance that we would become aware of all significant matters and events that might be identified in a reasonable assurance engagement.

The procedures performed on NFS are based on our professional judgement and included inquiries, primarily with company personnel responsible for the preparation of information included in the NFS, analysis of documents, recalculations and other procedures aimed to obtain evidence as appropriate.

Specifically we carried out the following procedures:

1. analysis of relevant topics with reference to the Group's activities and characteristics disclosed in the NFS, in order to assess the reasonableness of the selection process in place in light of the provisions of art.3 of the Decree and taking into account the adopted reporting standard;
2. analysis and assessment of the identification criteria of the consolidation area, in order to assess its compliance with the Decree;
3. comparison between the financial data and information included in the NFS with those included in the consolidated financial statements of the Lu-Ve Group;

4. understanding of the following matters:

- business management model of the Group's activities, with reference to the management of the topics specified by article 3 of the Decree;
- policies adopted by the entity in connection with the topics specified by article 3 of the Decree, achieved results and related fundamental performance indicators;
- main risks, generated and/or undertaken, in connection with the topics specified by article 3 of the Decree.

Moreover, with reference to these matters, we carried out a comparison with the information contained in the NFS and the verifications described in the subsequent point 5, letter a);

5. understanding of the processes underlying the origination, recording and management of qualitative and quantitative material information included in the NFS.

In particular, we carried out interviews and discussions with the management of Lu-Ve S.p.A. and with the employees of Sest S.p.A., Air Hex Alonte S.r.l., Sest-Luve-Polska Sp.z.o.o., Heat Transfer Systems (HTS) s.r.o. and Zyklus Heat Transfer Inc., and we carried out limited documentary verifications, in order to gather information about the processes and procedures which support the collection, aggregation, elaboration and transmittal of non-financial data and information to the department responsible for the preparation of the NFS.

In addition, for material information, taking into consideration the Group's activities and characteristics:

- at the parent company's and subsidiaries' level:
 - a) with regards to qualitative information included in the NFS, and specifically with reference to the business management model, policies applied and main risks, we carried out interviews and gathered supporting documentation in order to verify its consistency with the available evidence;
 - b) with regards to quantitative information, we carried out both analytical procedures and limited verifications in order to ensure, on a sample basis, the correct aggregation of data;
- for the following companies and sites, Uboldo (Italy) headquarters and production site for Lu-Ve S.p.A., Limana (Italy) production site for Sest S.p.A., Alonte (Italy) production site for Air Hex Alonte S.r.l., Gliwice (Poland) production site for Sest-Luve-Polska Sp.z.o.o., Novosedly (Czech Republic) production site for Heat Transfer System (HTS) s.r.o., and Jacksonville (USA) production site for Zyklus Heat Transfer Inc., which we selected based on their activities, their contribution to the performance indicators at the consolidated level and their location, we carried out site visits or remote meetings, during which we have met their management and have gathered supporting documentation with reference to the correct application of procedures and calculation methods used for the indicators.

Conclusion

Based on the work performed, nothing has come to our attention that causes us to believe that the NFS of the Lu-Ve Group as of December 31, 2022 is not prepared, in all material aspects, in accordance with articles 3 and 4 of the Decree and the GRI Standards.

Our conclusion on the NFS of Lu-Ve Group does not extend to the information required by art. 8 of the European Regulation 2020/852 included in the paragraph "The European Taxonomy for environmentally sustainable activities"

DELOITTE & TOUCHE S.p.A.

Signed by
Massimiliano Semprini
Partner

Milan, Italy
March 30, 2023

This report has been translated into the English language solely for the convenience of international readers.



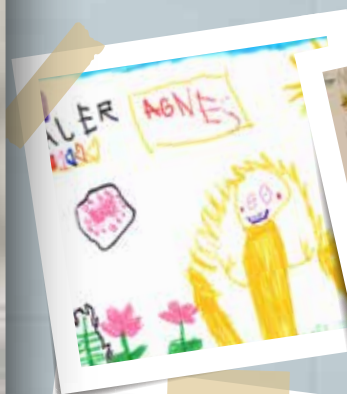
Maserati Engine Lab (Modena, Italia)





LU-VE GROUP'S CHILDREN : "WHAT FACE WILL I MAKE?"

"DISCOVER WHO YOU ARE AND DON'T BE AFRAID TO BE THAT PERSON" (MAHATMA GANDHI)



CALENDAR 2023



LU-VE
GROUP

leadership with passion



100% 

recycled