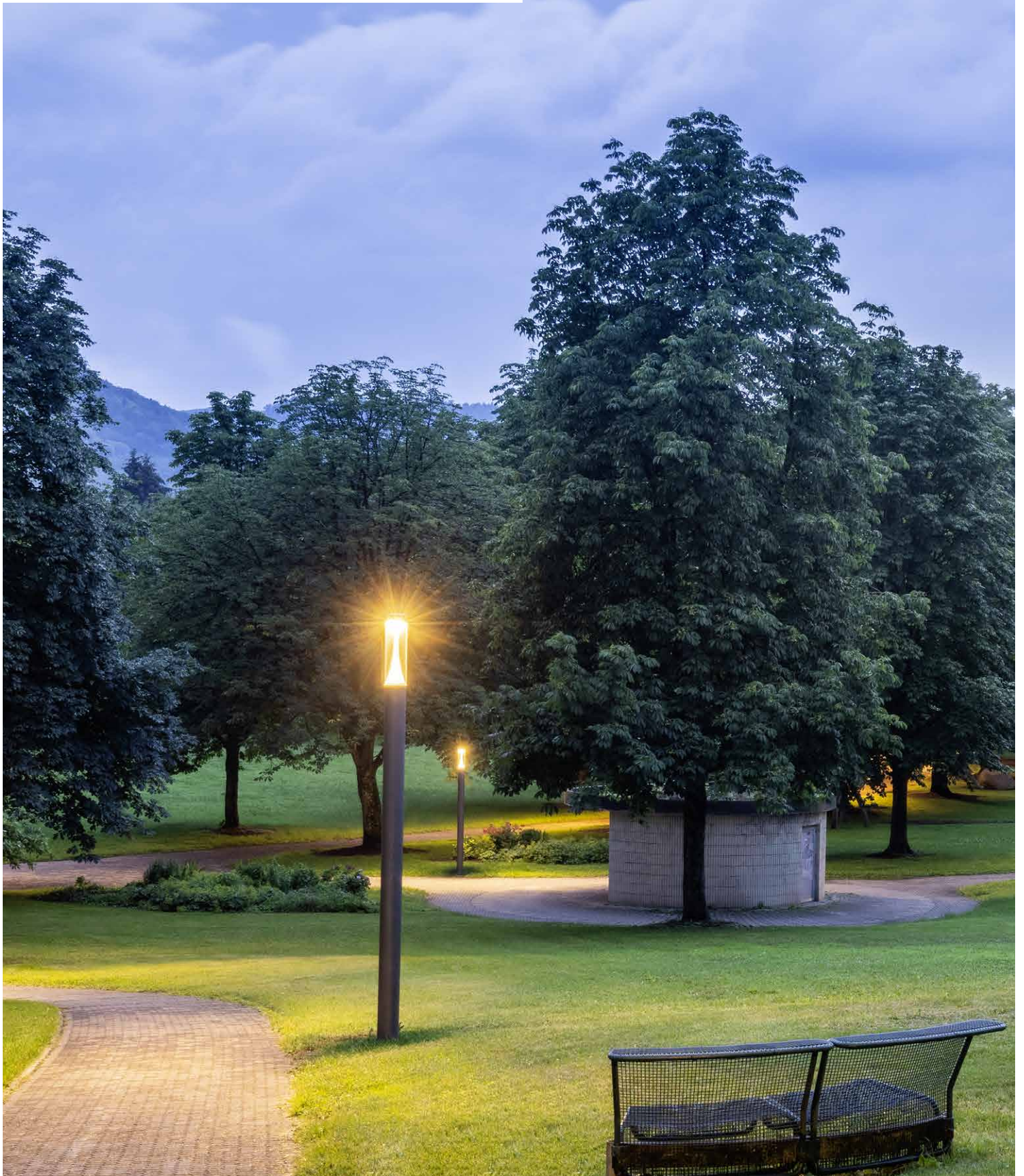


TRILUX
SIMPLIFY YOUR LIGHT.

NATURALLY
SUSTAINABILITY
REPORT 2021/2022

**SUSTAINABILITY HAS
MADE US A LEADER.**
WE LEAD IN SUSTAINABILITY.



AT A GLANCE



112 years

TRILUX was founded in
Menden, Germany in 1912.



160 events

organised by the TRILUX Akademie in 2022. Around 240,000
people have taken courses since its founding in 2011

6



production sites in
Germany and Europe

5,000 employees



are part of the TRILUX Group worldwide with
around 1,400 at the German headquarters



16.6 years

average service in the company (at Arnsberg)

30 subsidiaries

are part of the TRILUX Group



50 countries

make up our global sales market

60

apprentices



31

nationalities



46.96 years

average age



6 shareholdings

Seitec, ICT, Crossscan, Led Luks, watt24, Monolicht



11,149 tonnes of CO₂

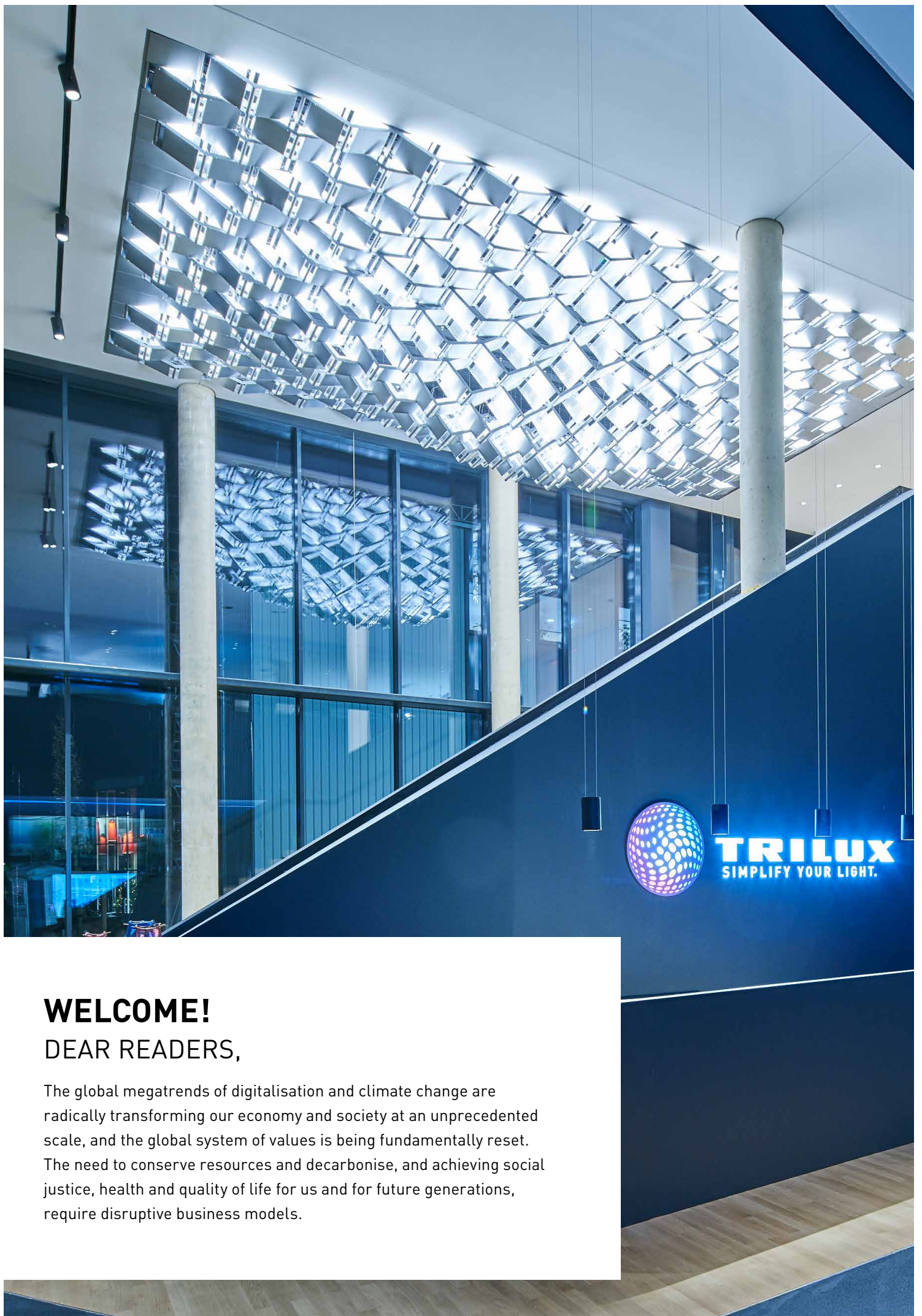


is the corporate carbon footprint of our Arnsberg and Cologne
sites in 2022. This corresponds to an average of 7.7 tonnes per
employee in the subsidiaries.**

See page 35 (carbon footprint)



20 languages



WELCOME!

DEAR READERS,

The global megatrends of digitalisation and climate change are radically transforming our economy and society at an unprecedented scale, and the global system of values is being fundamentally reset. The need to conserve resources and decarbonise, and achieving social justice, health and quality of life for us and for future generations, require disruptive business models.

We continue to actively drive digitalisation in the lighting market, for us and our customers. After all, this development offers enormous potential for cutting emissions and improving efficiency, convenience and comfort for everyone.

Klaus Röwekamp, Senior Vice President Sustainability and Products



“For many years now, we’ve focused our organisation’s actions in all core areas on environmental protection and conserving resources as well as avoiding carbon emissions. And not just since the demand to fight climate change.”

Johannes Huxol, CFO TRILUX Group

At TRILUX, as pioneers we help shape technological change and make a positive contribution to society and the environment. This is, after all, what we’ve consistently done in our 111-year history. The revolutionary development of the especially economical TRILUX linear luminaire with three times the lumen yield (compared to the standards of the time) led to the birth of our name in 1948. We are pioneers in LED transformation.

TRILUX was already protecting the environment before sustainability became a corporate mantra. We built our own wastewater treatment plant in Arnsberg for example as early as 1985.

Environmental protection and saving resources are firmly anchored in the TRILUX DNA as an entrepreneurial principle, and we align the actions of our organisation to these principles in all core areas. We also work consistently to improve our carbon footprint, and as a result TRILUX production sites in Germany will be climate-neutral in Scope 1 and 2 (see page 37) from 2025 onwards. Until then we will offset the remaining emissions through selected and certified climate protection projects, and we are currently working on a transformation concept for 2040. We have also had combined heat and power generation installed for decades to sustainably reduce energy consumption. Social justice, ecological responsibility and fair business practice have been our non-negotiable values since the

company was founded in 1912. This has made us courageous and creative pioneers, drivers and participants in the market, and we tangibly contribute to our precious planet and to the sustainable development of a society that's worth living in.

The current key issues in the lighting market range from energy and material efficiency to climate protection, biodiversity and the circular economy. We also know that producing products according to circular principles can cost more, but we are committed to solving this issue. Our aim is to integrate each new product into a special cycle group, and we are well on the way to becoming the leader here.

None of this is new for TRILUX – thanks to our strong culture of innovation, we currently set benchmarks in terms of efficiency, service life and technologies in the lighting industry. After all, we believe we can only achieve sustainable corporate growth through efficient product development that, in turn, is based on research into innovations, technological expertise, creativity, commitment and responsibility for our employees.

The biggest challenge when it comes to sustainability is its complexity, but we're keen to get started. Hesitating, over-analysing and doing nothing are the biggest obstacles to progress – we believe in making decisions quickly and daringly, even if it means failing from time to time. A much greater failure would be to do nothing at all.

We strive to be a pioneer in the market, and will play a key role in supporting a transformation of the economy and global community – by providing unique solutions from 'green' production that feature maximum energy efficiency. This Sustainability Report informs about the strategic and integrated management solutions that we use to decisively promote resource and climate protection in all corporate processes, as well as through our product solutions and services. The report also informs about the corporate responsibility we practise towards our employees, customers, partners and society as a whole.



“Here at the TRILUX Group we’re committed to sustainable management and we make an important contribution to climate protection. We want to, and we will, shape the technological transition accordingly, simply because we’re in a position to do so.”

Hubertus Volmert, CEO TRILUX Group



**“As a family-owned business we think in terms of generations.
We’re committed to an end-to-end approach and we approach sustainability
in all its economic, ecological and social aspects. At the same time we support
our partners and customers in achieving their own growth and sustainability targets,
both for their future and ours.”**

Joachim Geiger, CSO & SMO TRILUX Group

Attempting to achieve a wide-ranging and realistic assessment of an organisation’s levels of sustainability requires an open, analytical view and scientifically recognised, understandable methods of evaluation. This report was created on this basis (in accordance with GRI, CSRD/ESRS guidelines to which we will be subject to, and of course comply to, from 2025 onwards).

We hope you enjoy reading it.

TRILUX Group Executive Board

STRUCTURE OF THE REPORT

Our sustainability strategy and this report are based on the Sustainable Development Goals (SDGs) agreed upon by the United Nations in 2015 as part of its 2030 Agenda. The 17 Sustainable Development Goals address global challenges with 169 targets and they are an important framework and guideline for our business activities.

However, to prevent us losing our way within this diversity and to ensure we act consistently and responsibly, TRILUX focuses on five SDGs, and this selection reflects areas in which we can have the greatest positive impact. We also wish to make people aware of the goals we have selected. They form the five chapters, and their sequence is based on content rather than values or numerically.



CONTENT

	At a glance	Page 3
	Welcome!	Page 4
PROLOGUE		
	The TRILUX Group	Page 11
	About this report	Page 13
ACTION		
	CLIMATE PROTECTION MEASURES	
	Our ambitious climate targets	Page 16
	Our sustainability strategy	Page 18
	Derivation of our sustainability strategy 2025	Page 22
	Our consistent path	Page 26
	Commitment to the lighting industry	Page 30
	Awards confirm our actions	Page 32
	Our carbon footprint – from data to decarbonisation	Page 35
	Reduction before compensation – our improvement measures	Page 41
	Our energy balance	Page 44
	Our products and services improve the carbon footprints of customers	Page 45
	Outlook: largest emission sources – greatest reduction potential	Page 55
	Expansion into Eastern Europe	Page 56
	SUSTAINABLE CONSUMPTION AND PRODUCTION	
	For nature and the environment	Page 57
	Efficiently minimising the use of raw materials and materials	Page 59
	Avoiding waste is essential	Page 67
	Cultivating biodiversity	Page 73
	INDUSTRY, INNOVATION AND INFRASTRUCTURE	
	Progress step by step	Page 75
	Cooperative research leads to innovation	Page 77
	Systematic improvement of production processes	Page 80
	Pioneering work for sustainable infrastructures	Page 81
	Conscious procurement practice	Page 82
	DIGNIFIED WORK AND ECONOMIC GROWTH	
	From people for people	Page 85
	Interesting facts about our workforce	Page 86
	The lighting specialists of tomorrow	Page 90
	Our training strategy	Page 92
	In-house academy	Page 93
	Health – our most precious asset	Page 96
	Attractive offers for employees	Page 102
	SUSTAINABLE CITIES AND COMMUNITIES	
	Our responsibility for society	Page 104
	For the cities of the future	Page 106
EPILOGUE		
	GRI Index	Page 113
	Our reporting and materiality analysis	Page 116
	Publisher, responsible persons, management, contact, reporting period, organisational profile	Page 118
	Corruption prevention, involvement of stakeholders	Page 120
	KPI-Table	Seite 122
	Imprint	Page 124



PROLOGUE

- The TRILUX Group
- About this report

THE TRILUX GROUP

TRILUX SIMPLIFY YOUR LIGHT is the most simple and reliable path to customised, energy-efficient and future-capable lighting solutions. In the dynamic and increasingly complex lighting market, customers receive optimal advice, ideal orientation and perfect light for their individual applications.





To consistently ensure this, TRILUX makes the most of a broad portfolio of technologies and services as well as efficient partners and companies within the TRILUX Group. As a lighting specialist, we bring together individual components to create customised complete solutions – and always ideal for customer requirements and the field of application. This allows complex and extensive projects to be simply and rapidly realised from a single source. In addition to quality and efficiency, the focus is always on simple lighting design, easy installation and easy use of the products and services.

TRILUX employs almost 5,000 people worldwide with company headquarters in Arnsberg, Germany.

The TRILUX Group has six production locations in Europe and Asia, and supports international customers via 30 subsidiaries which include twelve legally independent subsidiaries in France, Spain, the UK, the Netherlands, Belgium, Switzerland, Austria, Italy, Poland, Slovakia, the Czech Republic, Hungary and Dubai, as well as numerous international sales partners.

The Light division includes the brands TRILUX SIMPLIFY YOUR LIGHT, Oktalite and Zalux. Associated companies are Seitec, ICT, Crosscan, Led Luks, the online platform watt24 and Monolicht. Our Innovation Center, as a department for research and development, brings together the company's innovative strength under the TRILUX umbrella.

The TRILUX Akademie is active worldwide with ten branches in Austria, the Netherlands, Belgium, Great Britain, France, the United Arab Emirates, Switzerland and Cologne. We have digital branches in Poland and Spain that provide expertise on topics, trends and innovations in the lighting industry (both internally and externally).

For more information visit www.TRILUX.com

ABOUT THIS REPORT

Our Sustainability Report documents the management solutions and measures we use to implement our holistic sustainability concept. It was prepared with reference to the GRI standards and according to the Corporate Sustainability Reporting Directive (CSRD) and the specific European Sustainability Reporting Standards (ESRS) in order to implement the mandatory CSRD in advance, which will come into force in 2025. This report focuses primarily on the Arnsberg and Cologne sites.

202-1-d

On our behalf, ClimatePartner Deutschland GmbH Munich prepared the Corporate Carbon Footprint (CCF) in accordance with the guidelines of the Greenhouse Gas Protocol for our German sites in Cologne and Arnsberg. Our subsidiary Zalux writes its own sustainability report.

Analysed and calculated

Carbon emissions were calculated using consumption data and emission factors for conversion into CO₂. A distinction is made between primary and secondary data when collecting and assessing the quality of data. Primary data refers to the emission values of a supplier that result from its specific energy and material consumption, whilst secondary data is model-based information determined on the basis of emission factors for various materials, for example via databases such as Ecoinvent, DEFRA and Agribalyse.

Plain and simple

Our Corporate Carbon Footprint (CCF) was created in accordance with the guidelines of the Greenhouse Gas Protocol. It shows all emissions as carbon equivalents. This means that in addition to CO₂, the six other greenhouse gases regulated by the Kyoto Protocol are also taken into account in calculations: CH₄, N₂O, HFCs, PFCs, SF₆ and NF₃. These are converted into the global warming potential of CO₂ and form CO₂ equivalents (CO₂e). For linguistic reasons, however, we use the term CO₂.

Current and ongoing

This Sustainability Report is a follow-up report to our voluntary report from 2019. The reporting period is 2021/22. Where no current data was (yet) available in individual areas, existing data from 2019 was used. In future, the data records will be updated annually and data collection will be extended to the international subsidiaries. This allows the progress of the measures and the achievement of the set goals to be accurately depicted.

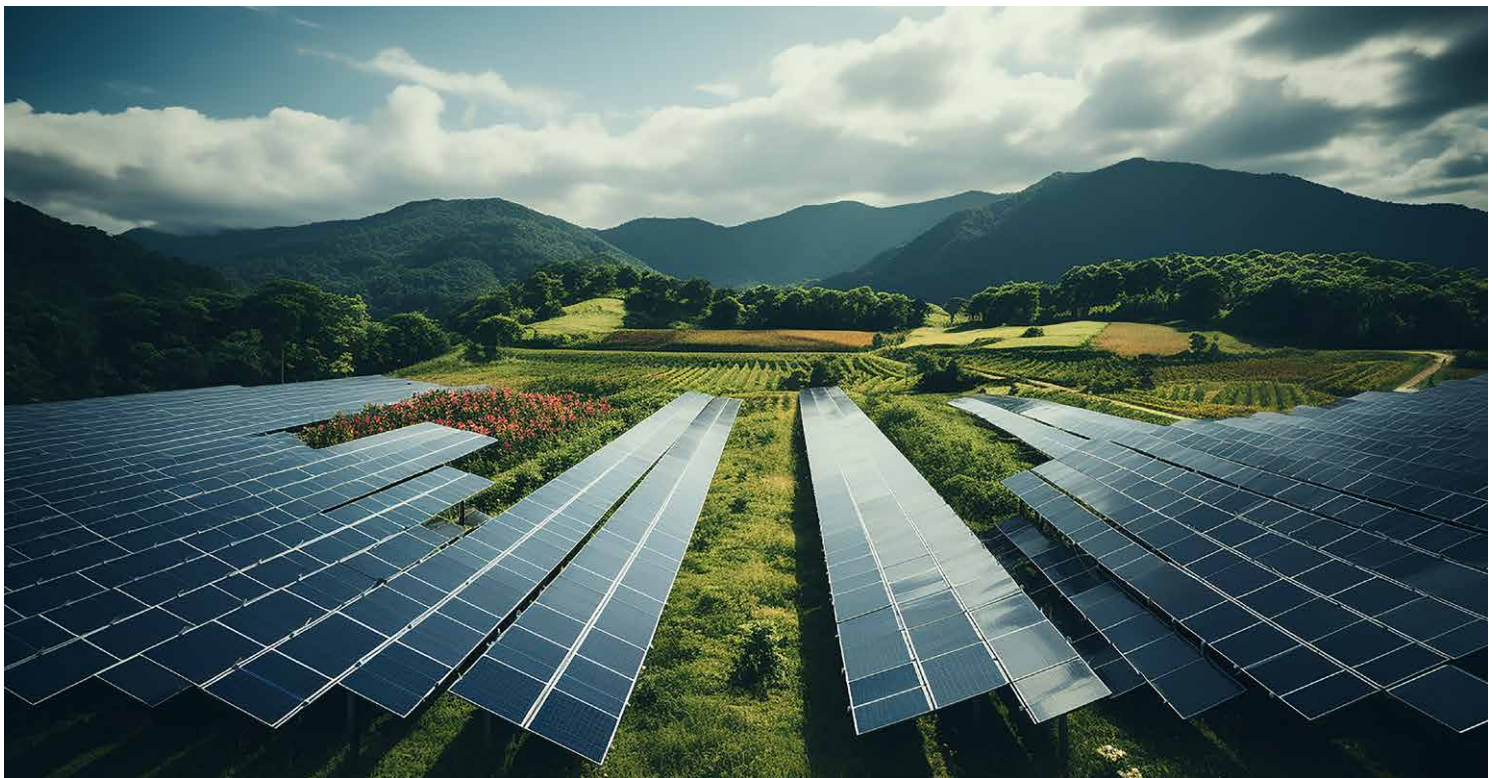
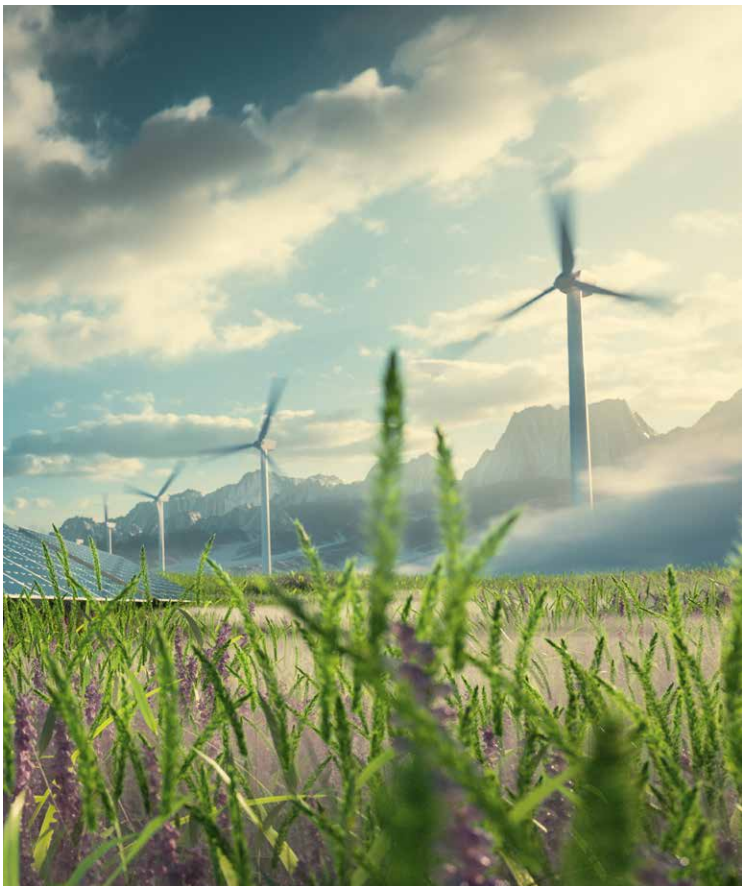
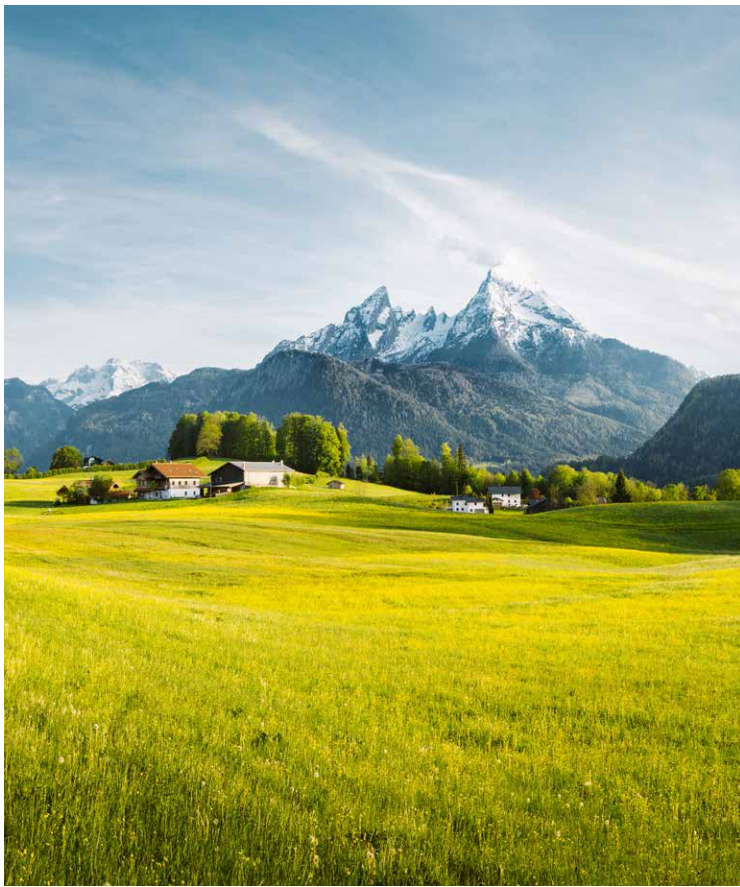
WHEN LESS IS MORE: This report will not be printed and is only available as a PDF for downloading or receiving via e-mail. This conserves valuable resources and avoids carbon emissions. It is simple, lean, reduced to the essentials and not integrated into a separate website. Why? To save energy. Dispensing with complex online graphics, text and image files protects the environment. After all, use of the internet accounts for around 10 % of global electricity consumption. If the internet were a nation, it would be the fifth or sixth largest energy consumer in the world [source: mittelstand-digital.de]. The more data, the higher the energy needs. We want to make an example for others to follow, and are doing so here.



ACTION

- Climate protection measures
- Sustainable consumption and production
- Industry, innovation and infrastructure
- Dignified work and economic growth
- Sustainable cities and communities





CLIMATE PROTECTION MEASURES

Intention: to implement measures for protecting the global climate, to which the global community of states committed itself in 2015 in the Paris Climate Protection Agreement. This calls for global warming to be limited to significantly below two degrees compared to the pre-industrial age. In 2018, 197 signatory countries adopted a joint 'rulebook' to review the achievement of the national targets and strategies set. At the 2021 World Climate Conference in Glasgow, these countries agreed on an accelerated global energy transition and the goal of limiting global warming to 1.5 degrees.

OUR AMBITIOUS CLIMATE TARGETS

TRILUX is making solid strides forward. The company's production sites in Germany are to be climate-neutral (Scope 1 and 2) as early as 2025. Residual emissions are then to be offset via certified climate protection projects until the far-reaching transformation concept takes effect in 2040.



GRI 305-1

GRI 305-2

GRI 305-3

From the initial idea for a luminaire and production to international supply chains, installation and recycling, we pursue a Group-wide sustainability strategy. Back in 2019 we set ourselves the target of achieving climate neutrality at our German production sites by 2025. In the meantime, our knowledge as well as administrative law have deepened. We continue to prioritise the reduction of Scope 1 and 2 – based on the Science Based Targets initiative (SBTi) – as well as the voluntary target in Scope 3.

The SBTi is the science-based, independent initiative for setting reduction targets for companies in line with the UN climate targets of the Paris Climate Agreement. By joining, member companies commit to developing scientifically based climate strategies.

One thing is clear – we as a production company will never be able to operate entirely without emissions. We are therefore developing a **transformation concept for 2040*** to show how we can position ourselves to achieve even lower emissions and be more self-sufficient after 2025. In a next step, from 2025 onwards, we will agree a joint objective with colleagues at our European production sites and subsidiaries. Spain, the UK and Benelux are already on their way to becoming even more sustainable locations.

In the meantime, the focus is on reduction combined with compensation from 2025 for the remaining emissions. We are currently discussing suitable projects.

OUR THREE MOST IMPORTANT GOALS:

1. REDUCTION OF SCOPE 1 AND 2 (ANALOGUE TO SBTi):

- **At least 2.5 % to 4.2 %** per year absolute reduction
- This will correspond to a reduction of **at least 15 % to 25.2 % to 2025**

2. VOLUNTARY COMMITMENT TO REDUCE SCOPE 3:

- **2.5 % per year** in areas to be defined

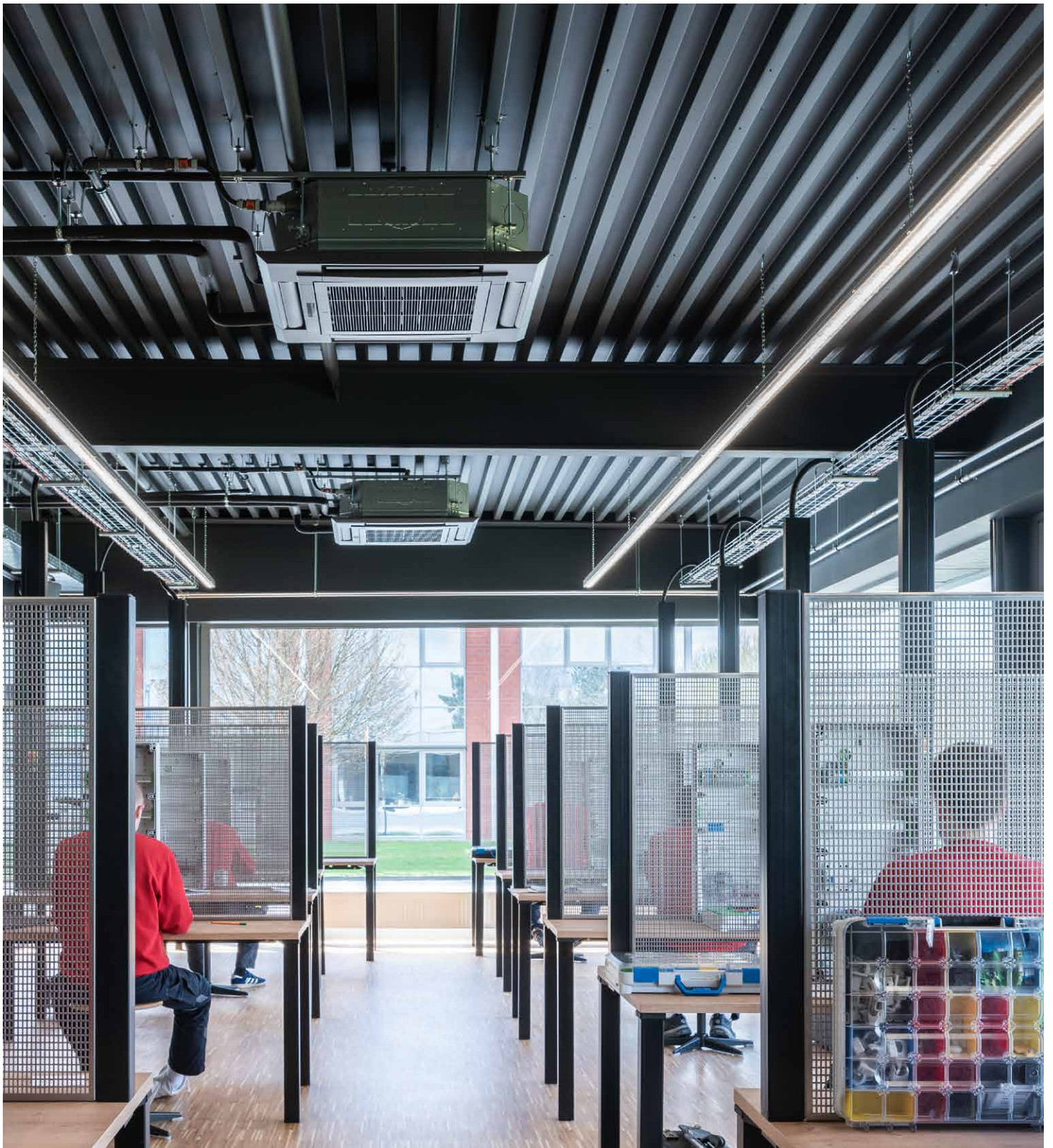
3. ENERGY EFFICIENCY:

- Further **increase in the proportion of renewable energies** in our total energy consumption

See page 35 for more details (Our carbon footprint – from data to decarbonisation)



* funded with 50 % of eligible investment costs by the Federal Ministry of Economics and Climate Protection in the period 06.02.2023 to 05.02.2024. The project developer is VDI/VDE-IT. The transformation concept includes a minimum target of a 40 % reduction in greenhouse gas emissions compared to the current situation within the next ten years after submission of the application.



OUR SUSTAINABILITY STRATEGY

As an innovative, pioneering and partnership-based supplier, TRILUX focuses on maximally efficient product development, effective light management and dependable lighting design. These are our most important fields of activity.





TRILUX pursues a wide-ranging sustainability strategy based on ecological, economic and social responsibility, which is deeply rooted in the company's DNA and reflected in various corporate areas and divisions.

THESE ARE THE CENTRAL ASPECTS OF OUR SUSTAINABILITY STRATEGY:

- 1. CORPORATE RESPONSIBILITY:** TRILUX sees the respectful treatment of all employees and partners as an essential criterion for sustainable action. The company is committed to its employees and to society, nature and the environment.
- 2. INNOVATION AND TECHNOLOGY:** TRILUX focuses on the consistent development of sustainable innovations and technologies in the field of lighting. As a pioneer in LED transformation, we consistently set benchmarks for efficiency, quality and technology.
- 3. CIRCULAR ECONOMY:** TRILUX researches and carries out measures for the essential circular economy. Topics such as energy and material efficiency, climate protection, biodiversity and recycling are paramount.

Our vision for a better future

In a world constantly in flux, it is crucial that companies develop a clear vision for the future that focuses not only on the company's growth and profitability, but also on the environment, society and the people it affects. We are aware that our activities impact the environment, society and people – it is therefore our responsibility to ensure that these effects are as positive as possible.

For this reason, we have developed a mission statement for TRILUX that is based on the impact-intensive Sustainable Development Goals (SDGs) of the United Nations. For us this means using resources responsibly, creating qualitative living and working environments and taking a bold and creative approach as a pioneer in the industry.



SDGs as the basis

The Sustainable Development Goals (SDGs) are 17 universal goals set by the United Nations to promote sustainable development throughout the world by 2030. The targets range from eradicating poverty and hunger to promoting gender equality and protecting the environment. We made a conscious decision to initially integrate five SDGs into our sustainability strategy in order to focus our efforts and make them measurable in terms of their impact. These are:

- SDG 8: Dignified work and economic growth
- SDG 9: Industry, innovation and infrastructure
- SDG 11: Sustainable cities and communities
- SDG 12: Sustainable consumption and production
- SDG 13: Measures for climate protection

Actions for sustainability

These goals not only reflect our values and commitments as a company, but are also closely linked to our area of business and our industry. By focusing on these SDGs as a first step, we can make a positive contribution to society while also strengthening our business and making it fit for the future. Of course, this does not mean we ignore the other SDGs – we derive specific measures and projects from the content of the SDGs to allow us to sustainably implement our strategy.

Specific measures and projects

We are committed to investing heavily in product efficiency to optimise energy consumption and reduce our environmental impact. One of our most important concerns is to optimise the usage phase of our lighting solutions, because our investigations have shown that this contributes significantly to carbon emissions. TRILUX, with its investments, also concentrates on the core issues of sustainability. We are also aware of customers' concerns regarding environmental product declarations (EPDs), energy savings in production cycles and packaging. We prioritise these issues and make sure that our efforts are focused on initiatives that come to the good of both the planet and our company.



Maximum quality standards

TRILUX focuses on outstanding lighting technology and quality of light, and prioritises areas such as customised optics and maximum quality of material. We are also integrating modern Industrial Internet of Things (IIoT) technologies.

Compliance with environmental and safety standards in accordance with REACH¹, SCIP² and RoHS³ is a matter of course for us to ensure the responsible handling of chemical substances.

Waste avoidance, recycling and reusing valuable raw materials determine our day-to-day work and our product ranges, which follow these criteria: servicing, longevity, pay-per-use concepts, refurbishing obsolete luminaires and authoritative packaging concepts.

International commitment

We consistently participate in international (sustainability) research projects with science and industry. Examples of this are REPRO-LIGHT (re-usable and re-configurable parts for sustainable LED-based lighting systems, see page 75), SUMATRA (sustainable materials – from recycling back to application, see page 58) and the architectural practice GRAFT with whom we conduct materials research.

Compliance with the ZVEI Code of Conduct which we signed in 2012 and have continuously developed further underlines our ethical commitment. This was renewed in 2022. We are also involved in association work such as Lighting Europe and various ZVEI sustainability working groups.

¹ REACH stands for Regulation concerning Registration, Evaluation, Authorisation and Restriction of Chemicals. The REACH regulation is the European chemicals directive for the registration, evaluation, authorisation and restriction of chemicals.

² Article 33 of the REACH Directive stipulates information obligations along the supply chain for 'substances of very high concern' (SVHC) contained in articles. Since 5 January 2021, this and other information should also be entered into the 'SCIP database' by all involved parties. SCIP stands for 'substances of concern in articles, as such or in complex objects (products)'. The European Chemicals Agency (ECHA) made this SCIP database available online at the end of October 2020. In Germany, the regulation on SCIP notification obligation was brought into force at the end of October 2020 via the new Section 16f of the Chemicals Act.

³ RoHS is the abbreviation for 'Restriction of (the use of certain) Hazardous Substances in electrical and electronic equipment'. EU Directive 2011/65/EU therefore regulates the restriction of the use of certain hazardous substances in electrical and electronic equipment.

DERIVING OUR 2025 SUSTAINABILITY STRATEGY

Protecting our climate and resources is of the utmost importance to TRILUX, which is why we focus on and drive such factors forward – for us and for others.



GRI 2-6

GRI 2-13

Corporate responsibility, climate protection and compliance with social and environmental standards are not only a matter of course for TRILUX, but a top priority. The sustainability targets and measures are managed centrally by the Group's executive management. The highest controlling body is the Supervisory Board, chaired by Michael Huber, who is also a shareholder.

Our sustainability strategy was developed in close cooperation between the Executive Board, the management and the company's newly established sustainability division, and all relevant departments were involved. The concepts developed are continuously refined in order to consistently meet changing requirements. The head of the sustainability division reports on the status quo to the Executive Board at least once per quarter. Work currently taking place focuses on:

- Climate neutrality for the German TRILUX and Oktalite production facilities by 2025 (see above)
- Efficient products in the fight against climate change
- Sustainable corporate growth
- Development of recyclable products and processes
- Creation of environmental data sheets

In the fight against climate change

TRILUX products are used in all areas of professional applications. They ensure safety in production, logistics and trade, provide ergonomic light in offices, create ideal conditions for health, education and sport, display merchandise in sales spaces and present exhibits in galleries and museums in the best possible light. Luminaires from TRILUX illuminate roads, paths and squares, are installed around buildings and highlight architecture.

However, artificial lighting also contributes to greenhouse gas emissions. This is why we always follow the principle of 'only as much light as necessary and as little as possible'. With our striving for efficiency and by influencing our customers' energy consumption we already make a significant difference in the fight against climate change. We support customers in achieving their economic and ecological goals – by offering highly efficient, durable lighting solutions and services.

Extended risk management

Entrepreneurial activity is always associated with risks. TRILUX has established the certified ISO 9001 quality management system at its headquarters in Arnsberg so that we can recognise, minimise and, ideally, eliminate potential risks. TRILUX also runs a systematic risk management system based on the ISO 31000 standard.

Back in 2011, the TRILUX Group identified its primary risks for the first time as part of DIN EN ISO 9001:2015 and documented them in its quality management manual. Since then, the highest-level risks to the company's existence and success have been recorded, assessed, managed and monitored at regular intervals as well as controlling the effectiveness of the implemented measures.

Accordingly, the Rimiks X software was set up in the company's legislative area in 2022 to identify risks in company processes (analogous to ISO 31000).





An internal risk register records significant risks and risks that could endanger the company's existence.

This contains for example:

- Strategic risks
- Financial risks (capital commitment, liquidity, currency fluctuations, interest rate fluctuations, bad debts etc.)
- Risks due to violations of regulations, laws, specifications and standards
- Product risks (product liability cases, complaints etc.)
- Market risks (trends, technology, design, service, image, market shares etc.)
- IT risks (data security, data protection, IT misuse etc.)
- Change of ownership in the supply chain (insolvencies, ability to deliver)
- Personnel risks (shortage of skilled labour, fluctuation, personnel costs, age structure, succession planning etc.)

The management regularly reviews current risk assessments to obtain an overall assessment of the risk situation, and the insights gained are then integrated into our strategic decisions.

TRILUX analyses and evaluates traditional financial risks using e.g. scenario analyses for different development paths, and a cyber policy was taken out in 2017 to protect against IT risks.



Current potential risks

In 2021 and 2022, potential risks were identified such as:

- Climate change, especially weather phenomena such as heavy rainfall, flooding, storms and extreme temperature fluctuations, but also transitory risks (temporary or without long-term effects)
- Failure to duly enter the circular economy
- New EU regulations, including with regard to digital product data sheets
- Insufficient recognition of geopolitical risks and changes
- Supply bottlenecks (local disruptions, natural disasters, epidemics or pandemics)
- Market access
- EU legislation
- Insufficient market or customer access
- Continued price reductions due to high competitive pressure
- Insufficient diversification in the product mix
- Excessive concentration on specific markets and resultant dependence on these

WE KNOW HOW THE ENERGY TRANSITION CAN BE ACHIEVED:

TRILUX has always developed energy-saving technology. In fact at one time it gave us our name: the (at that time) new fluorescent lamp had a higher luminous efficacy than all previous light sources and made our luminaires three times more efficient – hence 'TRILUX'.



We have taken initial concrete measures to counter such potential risks. These include greenhouse gas (GHG) accounting, drawing up a wide-ranging climate strategy and the first Group-wide circular economy projects, and we are also involved in research into recyclability and recycling concepts that help us develop innovative solutions.

Other important aspects of our sustainability management are the continuous implementation of specific guidelines and implementing the Supply Chain Due Diligence Act. Over the next two years we will continue to adapt the necessary processes for the Corporate Sustainability Reporting Directive (CSRD), which was adopted by the EU Parliament in November 2022 and published the following December, and the European Sustainability Reporting Standards (ESRS), which were officially adopted in July 2023, and implement the EU taxonomy processes.



OUR CONSISTENT PATH

Energy and material efficiency are very important in terms of sustainable lighting, at both product and manufacturing levels. TRILUX lighting solutions are trailblazers in this field.

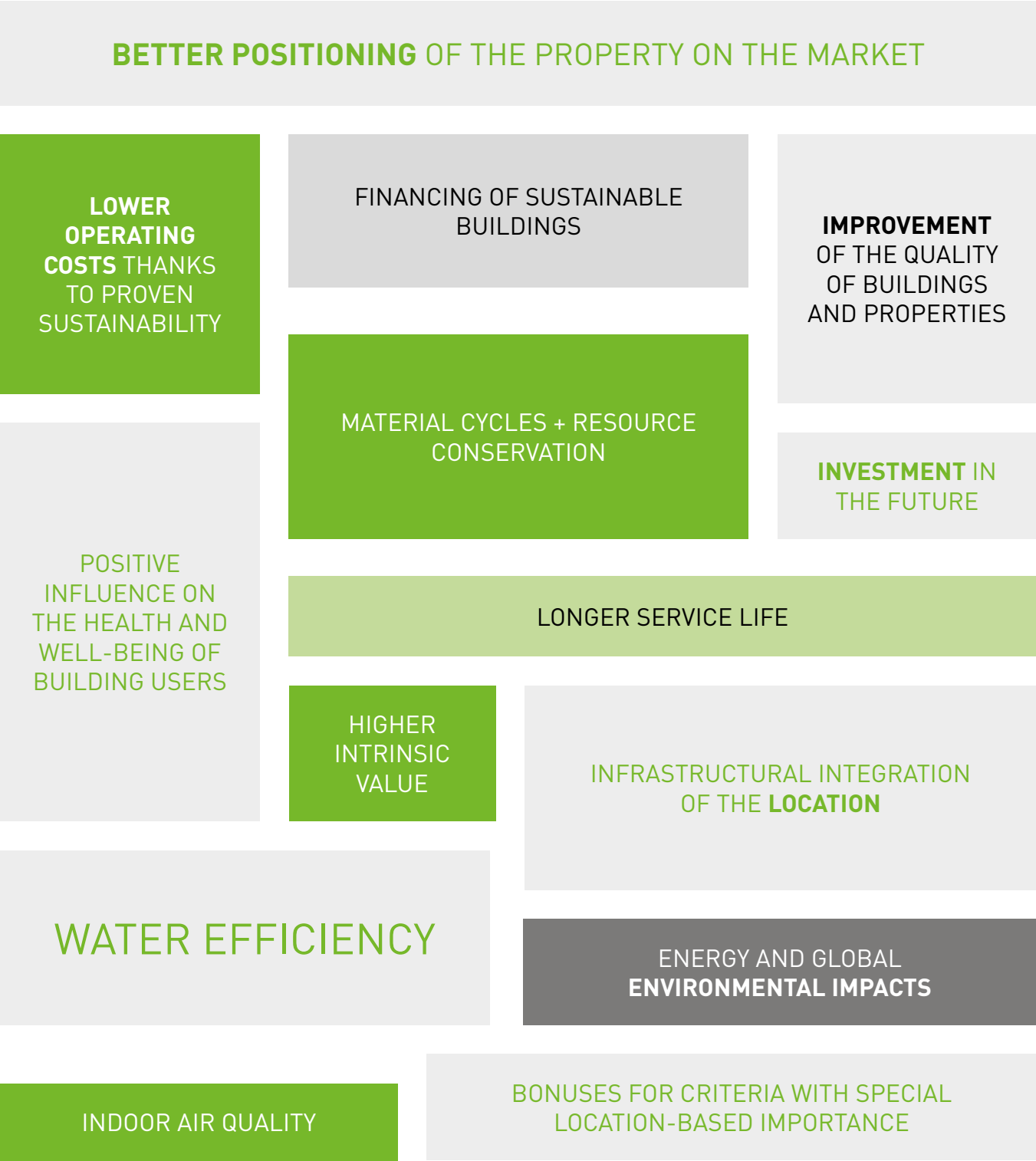
- **We set the standards** for energy consumption and service life, thus making an important contribution to minimising the carbon footprint with use of our luminaires. The LED transformation alone has been proven to achieve energy savings of 50 %.
- **Sustainable product design includes** the highest quality of light and materials, a high level of convenience for users and low use of resources.
- **Intelligent light management** allows the duration and intensity of lighting to be perfectly adapted to individual requirements and energy consumption to be reduced by at least an additional 30 %. Innovative light management systems also avoid unnecessary artificial light.
- **Because people are always the main factor at TRILUX**, we develop lighting that does more than just illuminate indoor and outdoor spaces. Human Centric Lighting (HCL, see page 46) for example changes its spectral composition during the course of the day in the same way as sunlight, bringing natural lighting conditions indoors. This increases the quality of life and work and also ensures the sustainability of the building. We are investigating the effects of HCL on health as part of comprehensive research projects, such as the “OLIVE - The Health Light” project. Find out more at: <https://www.trilux.com/de/blog/forschungsprojekt-olive/>
- **Our lighting ideas also minimise** the impact of light on flora and fauna. For example, insect-friendly light with specific light colours that attract fewer flying creatures at night.
- **Building certifications** are becoming increasingly important due to subsidy incentives and legal requirements for sustainability (the Renewable Energies Act). TRILUX solutions guarantee top scores with BREEAM (the international evaluation system for ecological and socio-cultural aspects of building sustainability), LEED⁴, WELL⁵ and DGNB⁶.
- **We thus support our partners** in implementing their climate strategies by reducing the greenhouse gas emissions caused by buildings. In addition, sustainable architecture has a competitive advantage over conventional buildings – it not only blends attractively and harmoniously into the surroundings but also respects nature.

⁴ LEED (Leadership in Energy and Environmental Design) is an internationally recognised certification system for ecological building. It certifies, via independent third parties, that a building has been constructed and designed in an environmentally friendly way. The programme is supported by the USGBC (United States Green Building Council), the independent body generally regarded as the most important source of standards for sustainable construction.

⁵ The International Well Building Institute (IWBI) is the system provider for the WELL Building Standard, the first assessment system to focus exclusively on the goal of positively influencing the comfort, health and well-being of users through the design of buildings and interior spaces.

⁶ The German Sustainable Building Council (DGNB) has developed a certification system to make sustainable building plannable, measurable and comparable. This planning and optimisation tool supports all parties involved in construction in implementing holistic sustainability quality.

BENEFITS OF BUILDING CERTIFICATION





- **Our high-quality product design** is easy to install, durable, low-maintenance and recyclable.
- **Customised financing concepts** can also be supplied by TRILUX on request. For example 'renting instead of buying' (Light as a Service [LaaS], whereby luminaires remain in our possession for sustainable recycling, see page 58), 'pay per use' (use of light for a consumption-based monthly fee), leasing, or via savings on operating costs. Tried-and-tested models are available for every application and area of use, including subsidy management.
- **Refurbishment solutions** with the latest state of technology (wireless networking, installation kits, blanking units) ensure the future viability of a building.
- **Insect-friendly lighting** minimises the impact of light on flora and fauna, for example using light colours that attract fewer insects at night.
- **The consistent conservation of resources** for TRILUX does not end on its own premises. To improve the environmental friendliness of our products and processes, we constantly search for optimisation potential along the entire value chain. We continuously reduce single and project packaging (e.g. bundles, LED shuttles) to avoid empty volumes and thus save on transport routes.
- **Less packaging material** makes it easier for electrical contractors to unpack, which saves time and facilitates subsequent disposal of the material. This immensely speeds up the entire installation process.
- **The testing and utilisation of the R phases of the cycle model** comprises all work steps. The R phases are Refuse, Rethink, Reduce, Reuse, Repair, Refurbish, Remanufacture, Repurpose, Recycle and Recover.

BEST EXAMPLES OF ECONOMICAL LIGHTING

1

E-LINE has been setting lighting industry standards for 30 years. With the E-Line Next LED continuous line system, the next generation of our best-selling modular system was launched to market in 2019. It's even more flexible, efficient, simple and sustainable. Featuring lighting technology with outstanding energy efficiency of up to 190 lm/W. Efficiencies of up to 207 lm/W are also possible with the new E-Line Pro continuous line, and with its high market penetration it makes a significant contribution on the path to climate neutrality.

REFURBISHING IS GOOD FOR THE CLIMATE. A conventional luminaire emits around one tonne of carbon dioxide over its service life. An LED luminaire, however, only half of this. TRILUX annually brings 5,000,000 LED luminaires to market. This saves around 2,500,000 tonnes of CO₂ each year. This amount is roughly equivalent to the CO₂ emissions of 500,000 cars per year (mid-range, petrol, 15,000 km mileage) or 0.6 % of Germany's total savings target by 2030.

2

3

TO DRIVE FORWARD THE CONVERSION OF EXISTING BUILDINGS and outdoor areas, we make upgrading with refurbishing solutions especially easy. For example with luminaires perfectly adapted to their predecessor models thanks to identical drill holes and feed points. This means refurbishment without needing to replan, drill or paint. If the required DALI control lines for the light management system are missing, the system can also be easily networked by radio without interfering in the building fabric.

THE SAVINGS POTENTIAL IS EVEN HIGHER if a light management system is integrated because smart lighting control ensures massive savings. At the same time, the service life of the luminaires is also extended. As light management systems (LMS) are not yet a matter of course on the market, we have developed a turnkey solution with our LiveLink system, which can be installed quickly and easily. The system is also ideally adapted to our luminaires. (see page 46)

4

WE ARE COMMITTED TO THE LIGHTING INDUSTRY

To fulfil our responsibility in the lighting market, we are involved in numerous committees and research groups, and we derive new products and services from their findings.





The TRILUX Group is excellently networked in numerous sustainability organisations. Together with industry associations, scientific and research institutions and in cooperation with other manufacturers, we drive forward technical developments worldwide, develop standards and political framework conditions, and discuss and evaluate these. For example:



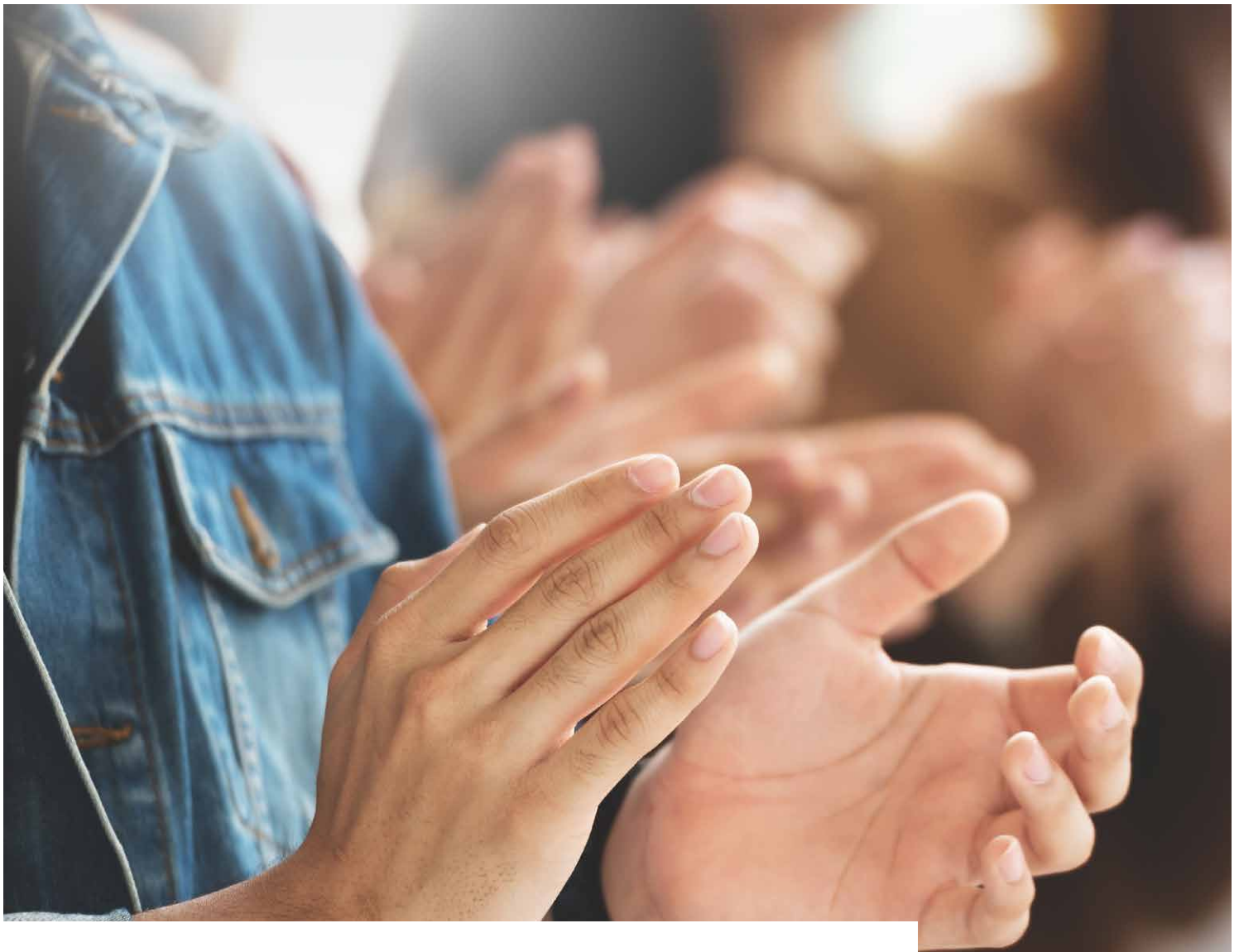
GRI 2-28

We support associations such as ZVEI (see page 21) and LightingEurope⁷ as well as initiatives such as CENELEC⁸ and THE CLIMATE CHOICE⁹, and we regularly take advantage of the training and dialogue opportunities these associations offer to drive forward our sustainable development.

⁷ LightingEurope is the voice of the lighting industry based in Brussels and represents 31 companies and national associations. Together, these members represent more than 1,000 European companies that manufacture luminaires, lamps and related components. They represent around 100,000 employees in Europe and achieve annual turnover of around 20 billion euros. LightingEurope is committed to efficient lighting that benefits the comfort, safety and well-being of people and the environment. The organisation also promotes a positive business and regulatory environment to ensure fair competition and growth in the European lighting industry. LightingEurope works with European legislators to share members' technical expertise and help shape a healthy regulatory framework with simple rules.

⁸ CENELEC has been designated by the European Commission as the European Standardisation Organisation. The private-law association under Belgian law is a non-profit technical organisation and its members are national standardisation organisations from 34 European countries.

⁹ THE CLIMATE CHOICE, based in Berlin, is currently the leading climate intelligence platform for companies to decarbonise the supply chain. It helps to collect, manage and report climate-relevant data in an uncomplicated way.



AWARDS CONFIRM OUR ACTIONS

High standards of sustainable management have an impact on ourselves, our customers and society, and our commitment has been honoured many times over.



To drive forward our sustainability goals we have also put our company to the test in 2021/2022 – at EcoVadis, the world's largest and internationally recognised provider of sustainability ratings with a network of more than 75,000 rated companies in more than 160 countries. The platform examines and evaluates how well companies have integrated the principles of sustainability/CSR into their business and management systems.

The Sustainability Scorecard from EcoVadis specifies performance using 21 indicators in four areas: environment, labour and human rights, ethics, and sustainable procurement. TRILUX has achieved **silver status**.



2021 – ECOVADIS BRONZE



2022 – ECOVADIS SILVER



Cooperation with ClimatePartner on the climate strategy



Climate targets aligned with SBTi



SUSTAINABLE DEVELOPMENT GOALS



SCIENCE
BASED
TARGETS

DRIVING AMBITIOUS CORPORATE CLIMATE ACTION



ClimatePartner



**SUSTAINABLE
PROCUREMENT PLEDGE
(SPP)**

We have **Gold status** in the Climate Readiness Check, which we have been implementing since 2021 (at that time still 'Silver') with the renowned online platform THE CLIMATE CHOICE. Among other things, climate targets, strategic orientation, measures taken to reduce negative environmental impacts and transparency in communication are reviewed. The overall rating for TRILUX is 25 % above average which puts us among the top five companies on the rating platform.

We of course do not rest on our laurels, but continue to work on our sustainability. However, the external assessment helps us to evaluate our current status and identify potential for improvement.

It goes without saying that many of our successes are based on our products. Take TUGRA for example – the luminaire features resource-saving production, quality factors such as efficiency and service life and a modular design for simplified maintenance, upgrading and retrofitting. Plastic-free packaging and project-specific bundles ensure less waste. Fresh on the market, TUGRA has already won several awards for its innovative design, for example the Red Dot Design Award 2022, the iF Design Award 2022 and the German Innovation Award 2022.

A RESOUNDING SUCCESS

Our E-Line NEXT LED won the 3rd German Sustainability Award in the field of design in 2022. The overall concept convinced the jury: our highly efficient continuous line system makes lighting more climate-friendly, environmentally friendly and future-proof. We incorporated our entire sustainability expertise into the innovative E-Line NEXT LED continuous line. Some ground breaking features:

CONSERVATION OF RESOURCES

Resource-saving construction

ECONOMIC

Use of precious materials are largely avoided

COMPATIBLE

Backwards compatible gear trays

EFFICIENT

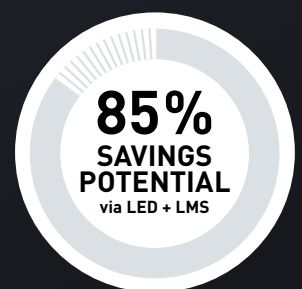
Excellent energy efficiency of up to 190 lm/W and reduction in the consumption of abiotic resources by more than 61 % compared to previous version

DURABLE

Long service life and suitable for easy refurbishing

SMART

Interfaces for smart light management and monitoring



LED AND LMS

Achieve up to 85 % energy and CO₂ savings



The prestigious award was presented at the 15th German Sustainability Day on 1 December 2022 in Düsseldorf.



www.trilux.com/e-line-next-led

OUR CARBON FOOTPRINT – FROM DATA TO DECARBONISATION

We work tirelessly to minimise the impact of our business activities on the planet. But data comes before deeds. We therefore commissioned ClimatePartner to prepare a complete greenhouse gas balance for our company sites in Cologne and Arnsberg in 2021 and 2022, and this is now updated annually.

The process proved to be extremely insightful and helped us identify areas where we needed to improve our database. We used these findings to specifically optimise our data collection and management.

Professional review as a basis

We are confident that we will achieve our interim goal of climate neutrality at our German production sites by 2025 (see page 12), because we work hard on decarbonisation. In 2022 we once again conducted a professional review to be able to take specific further reduction measures. In 2021 this took place during the pandemic where Germany was in its second lockdown until May 2021. The WHO only lifted the international health emergency on 5 May 2023. Production at TRILUX though was never idle, with office staff and sales teams working in mobile offices for many months.

The limits of the review

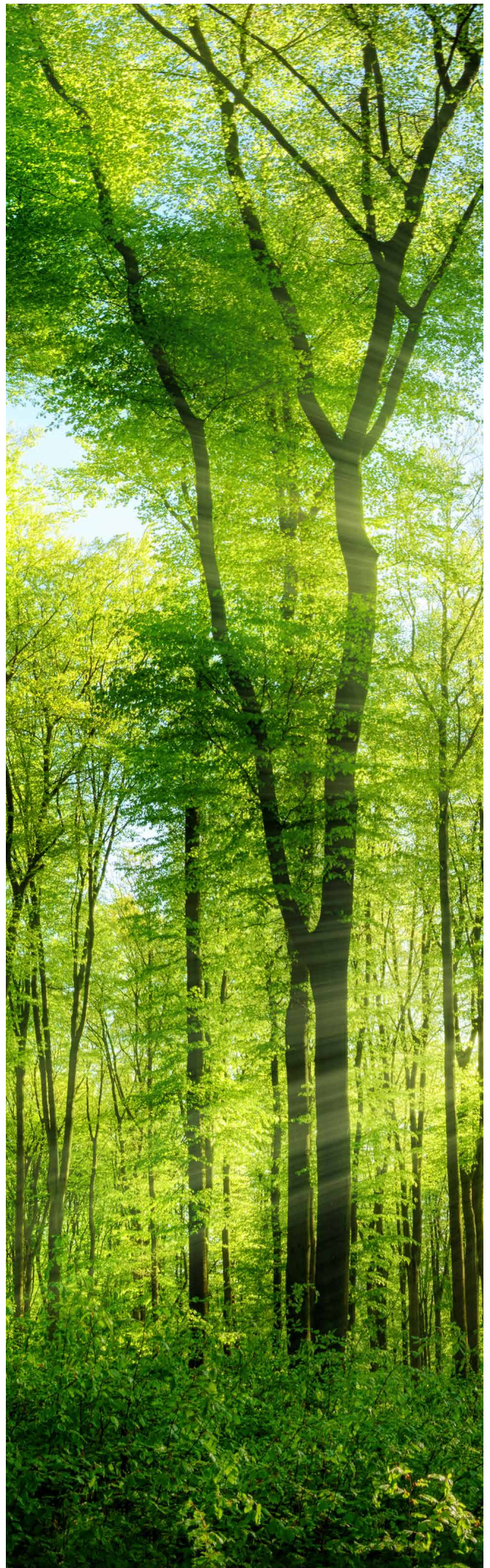
The current data collection is limited to direct and indirect emissions at the Arnsberg and Cologne sites. Emissions from manufactured products, their components and emissions in the utilisation phase have not yet been taken into account in this analysis. We record the emissions of our products separately.

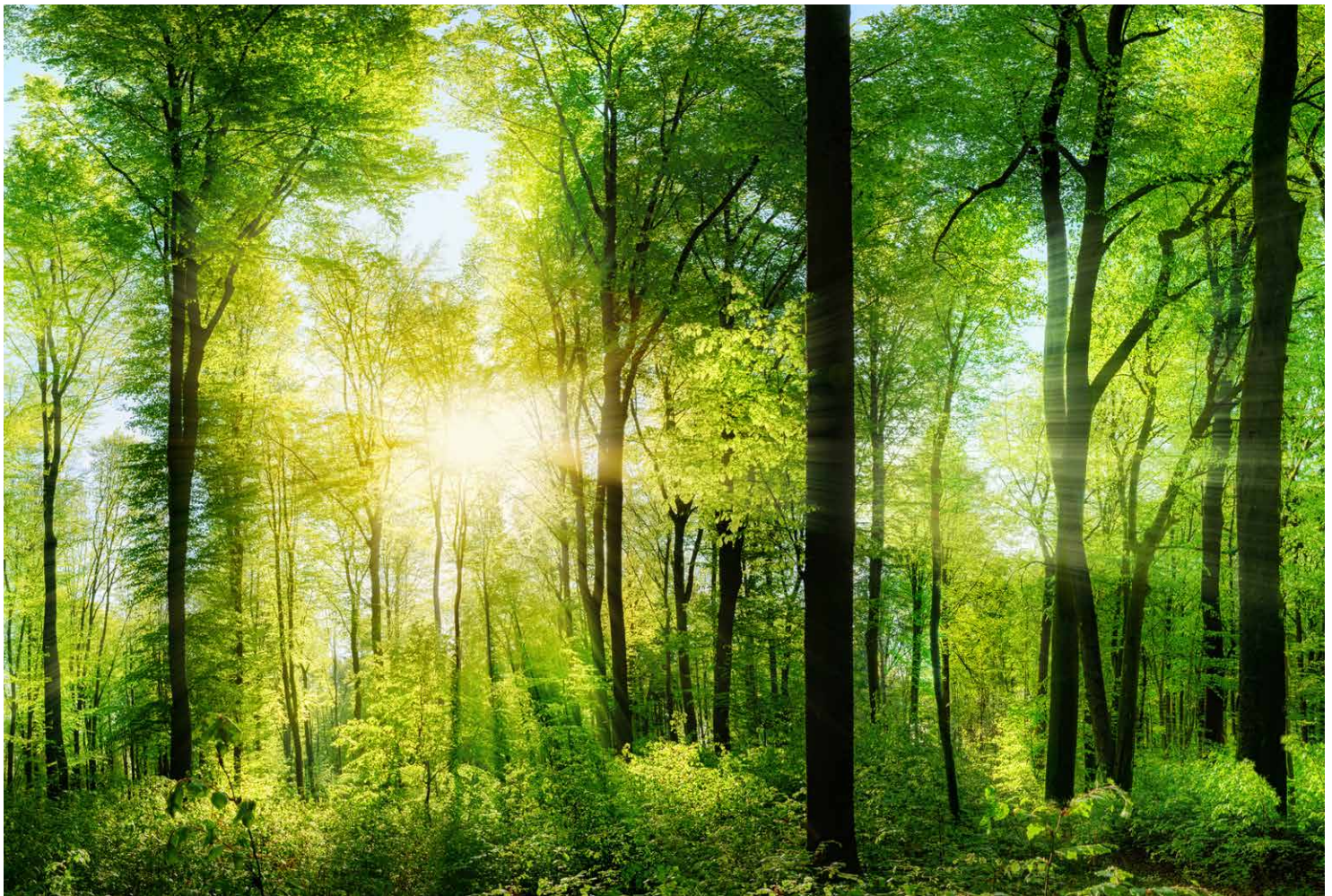
Time period: 1 January - 31 December 2022

Locations analysed: Arnsberg and Cologne

Data basis: Primary and secondary data

Environmental data on the annual performance of TRILUX GmbH & Co. KG Arnsberg can be found in the appendix.





11,149 tonnes of CO₂ – the corporate carbon footprint of our Arnsberg and Cologne sites in 2022.

The following data was collected:



SCOPE 1
(direct emissions)

Includes all emissions generated directly by TRILUX GmbH & Co. KG, e.g. by the company's own plants or vehicle fleets



SCOPE 2
(indirect emissions)

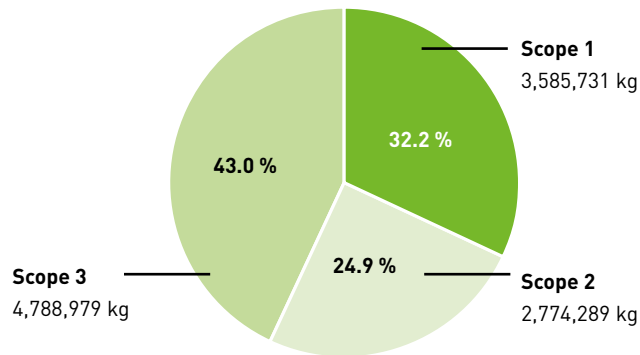
Lists emissions caused by purchased energy, e.g. electricity and district heating



SCOPE 3
(indirect emissions)

Includes all other emissions not under the direct control of the company such as business travel, employee travel to work and home office, upstream chain emissions (electricity, heat, fuels), production and operational waste, water, purchased goods and services (print products, office paper, external data centres and catering)

Total emissions in 2022



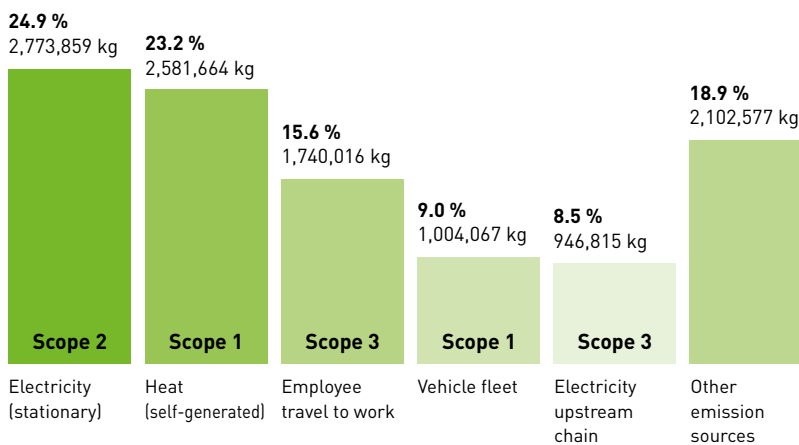
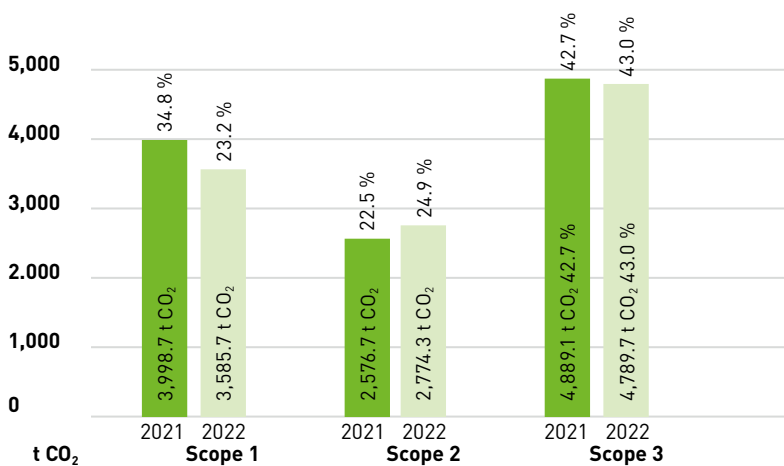
All site-specific CO₂ emissions were taken into account.

What are upstream chain emissions?

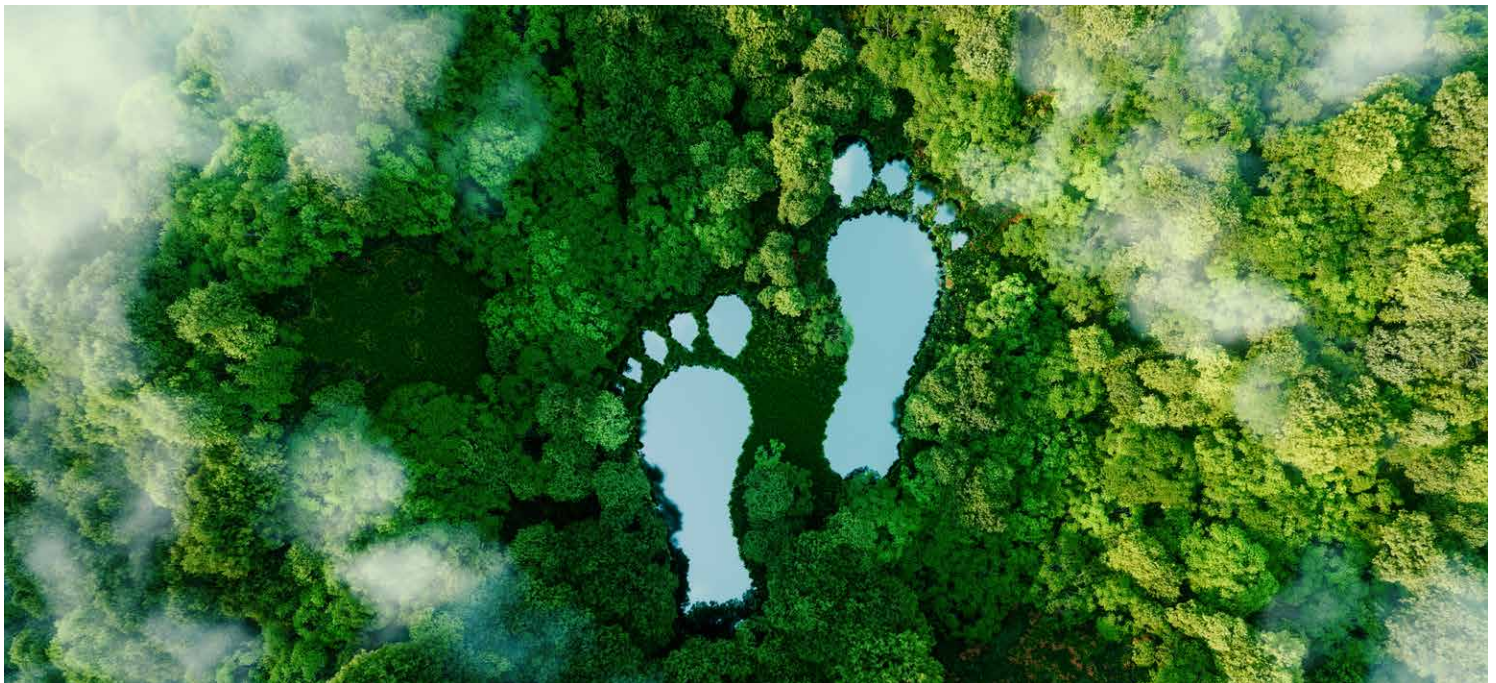
The upstream chain comprises the CO₂ emissions generated during the production, processing, transport and storage of energy.



Total emissions, 2021 compared to 2022

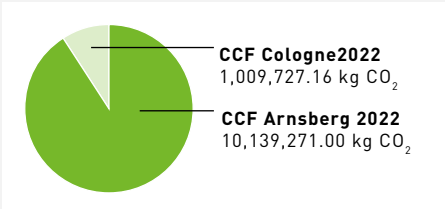


Note: 'Other sources of emissions' include waste from operations, purchased goods and services and business travel. Raw materials and components for the manufacture of products were not taken into account.

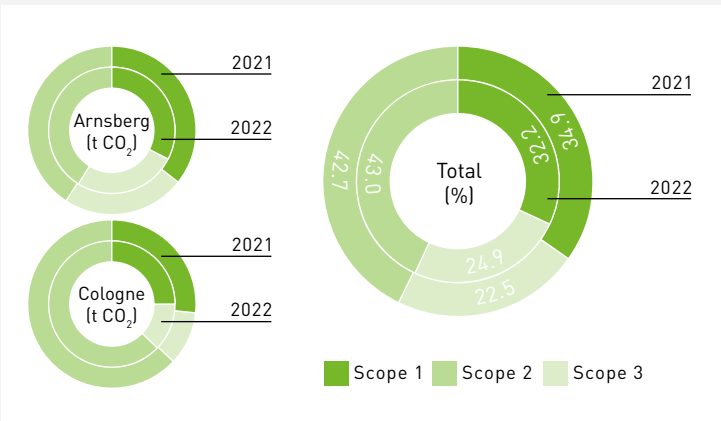


Total emissions of all individual calculations for comparison

CCF 2022	kg CO ₂	%
CCF Arnsberg 2022	10,139,271.00	90.9
CCF Cologne 2022	1,009,727.16	9.1

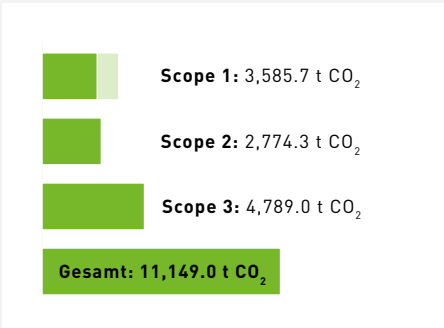


Total emissions per site, 2021 compared to 2022



Scope 1 and 2: emissions from bought-in energy 2022

Emission categories	Emissions (t CO _{2e})	Share (%)
Scope 1	3,585.7	32.2
Heat (self-generated)	2,581.7	23.2
Vehicle fleet	1,004.1	9.0
Scope 2	2,774.3	24.9
Electricity (stationary)	2,773.9	24.9
Electricity (vehicle fleet)	0.4	0.0
Scope 3	4,789.0	43.0
Overall result	11,149.0	100.0



Scope 1 and 2 balance: insight gained

1. In 2022, emissions from electricity and heat account for 48 % of total emissions. In 2021 this was 49.4 %.
2. The main emission source is electricity at just below 25 %.
3. This is followed by heat with 23 %.

Scope 3 balance: insight gained

1. The main source of emissions is employees travelling to work. At 17.8 % it accounts for the majority of these emissions.
2. This is followed by upstream chain emissions at 17.5 %.

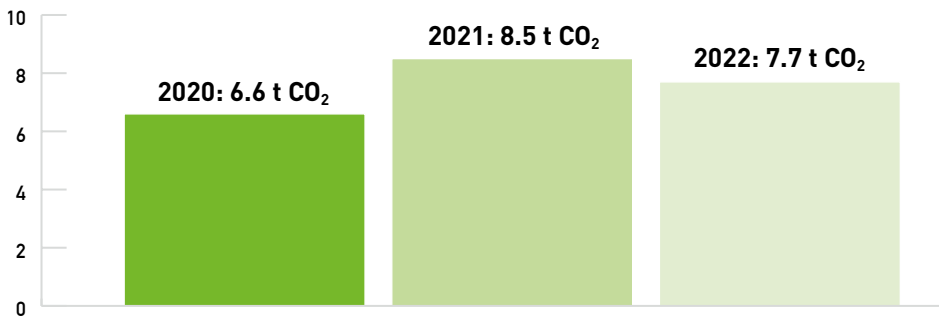
7.7 tonnes of CO₂

are incurred on average for every TRILUX and Oktalite employee in Arnsberg and Cologne in 2022. In comparison: One person in Europe produces an average of 8.7 tonnes of CO₂.¹⁰

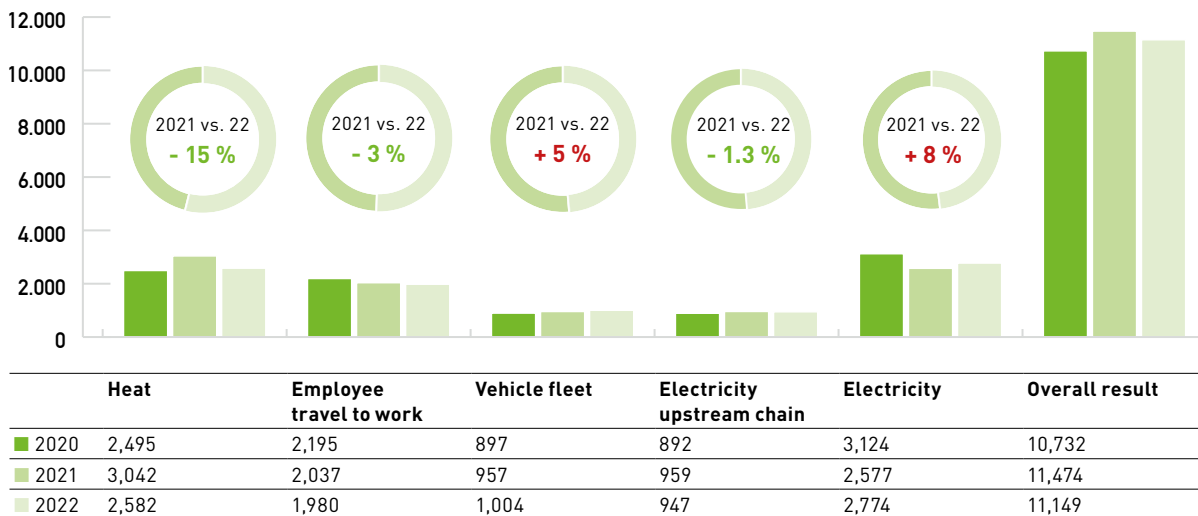
CO₂

Note: for better readability, Scope 3 emissions from the upstream chain of electricity, heating, cooling and vehicle fleet were summarised under fuel and energy-related emissions.

Emissions per employee, year-on-year comparison



Development of the five main emission sources from 2020 - 2022



325 tonnes less:

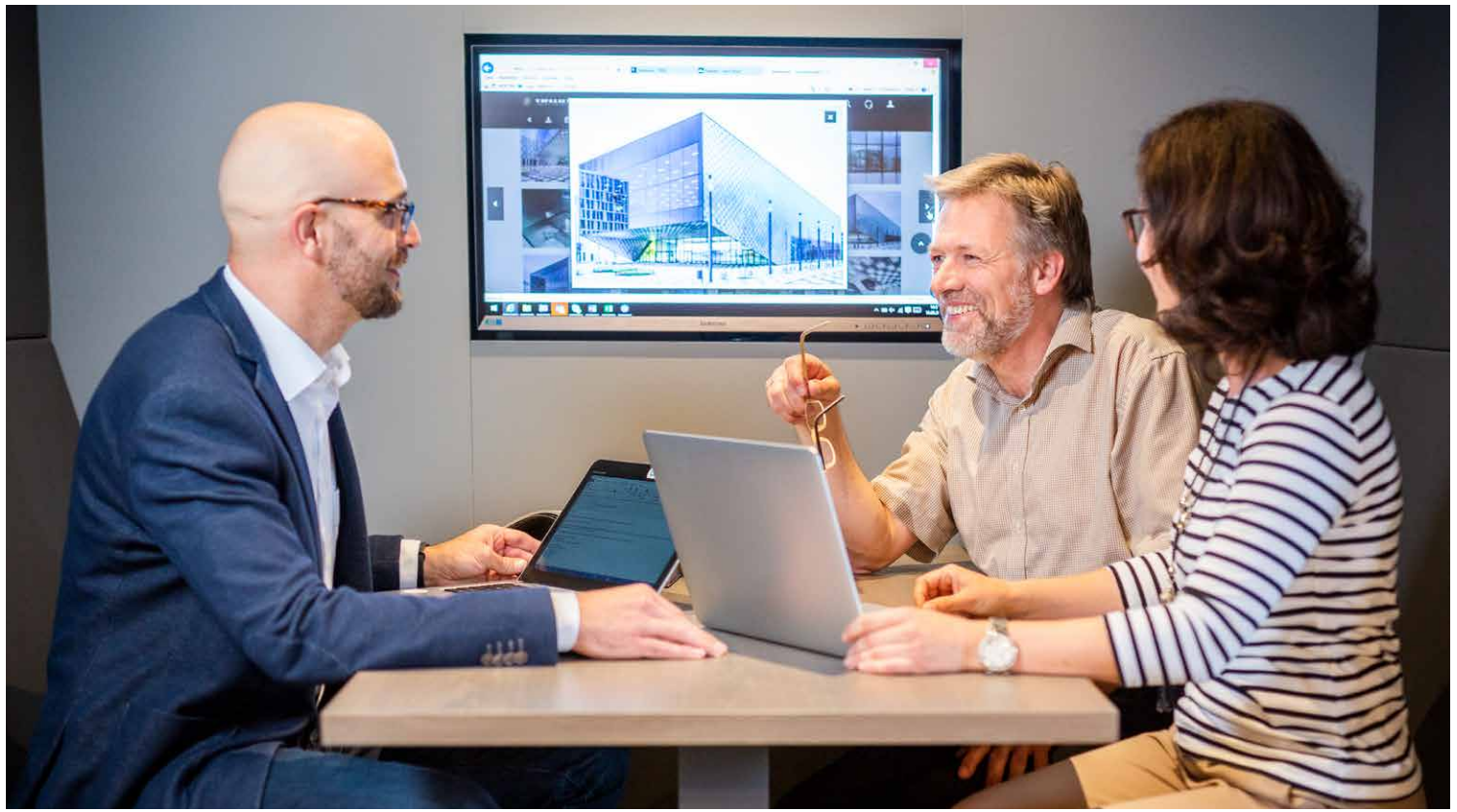
our Corporate Carbon Footprint (CCF) in 2022 compared to 2021 despite increased production and more employee mobility.



Conclusion, 2021 compared to 2022

- Total emissions reduced by 3 %.
- Heat emissions reduced by 15 % compared to the previous year.
- Employee travel-to-work emissions reduced by 3 %.
- Fleet emissions increased by 5 %.
- Upstream chain emissions for electricity reduced by 1.3 % due to lower consumption.
- Electricity emissions increased by 8 %

¹⁰ EEA 2019, European Environment Agency: EEA greenhouse gas – dataviewer, EU-27 value for total emissions with international transport, <https://www.eea.europa.eu/dataand-maps/data/data-viewers/greenhouse-gases-viewer> (accessed 31.01.2022)



EXPLANATION OF CHANGES

The coronavirus pandemic influenced data collection: many employees worked outside the locations for extended periods and we saved much travelling to and from the office with far less business trips.

Our new calculation is based on 'normal operation' for the first time, with better and more comprehensive data quality.

In 2022, CO₂ emissions were 3 % lower overall than in 2021. The reasons:

- Return to office buildings but the offer of mobile working continues to be utilised. Thus fewer employees travel daily to offices, which reduces their individual carbon footprint. Nevertheless, we have also taken home office emissions into account which are 2.2 % of our total emissions (240.4 t).
- We have been able to steadily reduce our internal electricity consumption thanks to energy management and continuous improvement measures. It fell further in the period 2021 to 2022 (-1.3 %). Despite this, emissions have risen slightly (+8 %) as the emissions factor of our electricity provider has increased. We have also again expanded our delivery capability as part of our customer focus.
- Our natural gas consumption has fallen by 15.13 % compared to 2021 thanks to efficiency measures such as the extended monitoring of energy consumption, raising employee awareness, optimising heating control and the milder weather conditions. This is the largest reduction in emissions in comparison and is therefore fundamental for the 3 % overall reduction.

We are constantly working to improve data quality, and to this end we mainly collect primary data, i.e. consumption values measured directly by us for the greenhouse gas balance. In coming years we will expand the calculation of Scope 3 emissions to include our products. This holistic approach will create further transparency and forms the basis for the evaluation of future reduction measures.

GRI 201

We describe the economic situation of our company in our separate financial and management report.



REDUCTION BEFORE COMPENSATION – OUR IMPROVEMENT MEASURES

Avoiding and reducing emissions is an essential part of climate protection, and ambitious and continuous reduction is crucial. TRILUX reduces CO₂ wherever possible.

We start with ourselves and analyse everything in detail – in buildings, in production, in materials and their procurement, in offices and in product development. As our products emit more than 90 % of greenhouse gases during their utilisation phase, the greatest reduction potential is in their efficient design. In addition, we have already optimised many business processes with the help of digitalisation and are continuing to develop in this regard.

We are not (yet) offsetting unavoidable emissions via compensation projects. We believe: avoiding CO₂ emissions is more sustainable than offsetting them through climate protection projects. We want to maximise the savings potential that we ourselves can achieve.

TRILUX has set itself the ambitious target of significantly reducing its own direct greenhouse gas emissions (Scope 1) and indirect emissions from the purchase of electricity and heat (Scope 2) in line with the targets of the Science Based Targets initiative (SBTi) (see page 16). The SBTi targets are scientifically sound and accord with efforts to limit the global temperature increase to a maximum of 2 degrees Celsius.

To this end, we utilise and implement energy-efficient technologies, renewable energies and other emission-reducing measures.

Examples:



RENEWABLE ENERGY

- In 2022, we launched our transformation concept at the Arnsberg site to further save energy and reduce electricity consumption. As part of this, the outdoor lighting system around the plant there was upgraded and equipped with lighting management. This saves up to 64 per cent energy per year.
- The photovoltaic self-consumption system on the field next to the ZALUX factory in Alhama de Aragón in Zaragoza, Spain, is 7,500 square metres in size. It was put into operation in summer 2022. Since then, the 286 solar panels with 147 kilowatts have covered 20 percent of the energy requirements of the Alhama I plant. In 2022, the energy produced amounted to 100 megawatt hours (MWh), which corresponds to almost 25 tonnes of CO₂ according to the official emission factor. A prime example of our subsidiary's sustainability performance.
- Energy-efficient information technology - We replace IT hardware every 3-5 years via our leasing partner. They refurbish the devices and resell them. In this way, we ensure that we only use energy-efficient devices. In addition, selected servers already run entirely on green electricity.



REFORESTATION PROJECT

- As the exclusive network partner for the "Forest of the Future Arnsberg" research project in the Arnsberg district of Rumbeck, TRILUX is providing financial and active support to the Centre for Forestry and Timber Management at the NRW State Forestry and Timber Agency in the creation of a resilient mixed forest for future generations. After months of preparation, the planting of the 12,000 square metre area with the first trees of eleven different species began in early December 2022. This culture serves as a "real laboratory" for the forestry scientists to obtain meaningful data on the growth, miscibility and care of the adaptable and more resilient trees for the whole of North Rhine-Westphalia. The nature project is scheduled to run for ten years. A mixed oak forest was planted as a forest development type on three partial areas of 4,000 square metres each. The natural reforestation without active planting is being documented on a fourth sub-area.



MORE CLIMATE-FRIENDLY MOBILITY

- Our emissions calculations showed that employees' journeys to their workplace play a major role: They account for almost 18 per cent of our total emissions per year. In 2022, we therefore introduced a tool on our intranet TRIXI for organising car pools and carpooling.

ZALUX NEXT strategy

With the ZALUX NEXT 2026 project, our subsidiary aims to become even more digital, innovative and sustainable. This includes the implementation of future technologies and other actions for the circular economy:



- Digitalisation of production management.
- Optimisation of the plastic injection process reduces energy requirements by up to 80 %.
- Converting to LED lighting including light management throughout the factory saves up to 70 % energy.
- Recyclable materials without synthetic colourants increase recyclability, allowing components to be used in new production. The luminaires can be fully maintained with minimal effort.
- CO₂ footprint maps for each individual product are being developed.
- Waste is reduced throughout the 42,000 square metre plants.

The carbon footprint of our products

Energy efficiency and the conscientious use of resources were already on the minds of the founding Lenze family in 1912. To this day TRILUX is constantly on the lookout for new materials, new processes and new ways of utilising products, and especially at the end of service life.

For three years, TRILUX was part of the European REPRO-LIGHT research project involving experts from the lighting industry. The research results contribute to making lighting (even) greener and provided surprising findings. For details see page 75.

In the life cycle assessment analysis of a typical luminaire – our E-Line and E-Line NEXT – the environmental impact during the life cycle, including subsequent disposal, was quantified. The assessment included the energy requirements of the production process, the utilisation phase and materials used, especially copper, steel and plastic as well as the most valuable ADP materials. ADP is short for Abiotic Depletion Potential, the abiotic consumption of resources, and this value represents non-renewable material resources consumed by the product.

Numbers instead of words

As a manufacturer we act in a climate-responsible manner, and sustainable, economical lighting makes a substantial contribution to climate protection. Strong key figures:



- A conventional luminaire emits around **1 tonne of CO₂** over its lifetime. An LED luminaire, with **0.5 tonnes**, only half as much.*
- Oktalite and TRILUX are currently bringing **around 5 million** of these onto the market.
- We thus already save **2.5 million tonnes** of CO₂ annually.
- In many cases Oktalite spotlights are already designed so that they can be disassembled into their individual components and recycled. The recycling rate of individual spotlights is currently as high as **81 %**.*
- If the consumption of primary energy over the entire life cycle of a luminaire is considered, the utilisation phase accounts for the largest share by far: operation of the luminaire accounts for around **90 %** of energy consumption and less than **10 %** is used for raw materials, transport, production and recycling. This fact is confirmed by extensive audits in which external experts have determined the carbon footprint of TRILUX products. For more information see page 36.

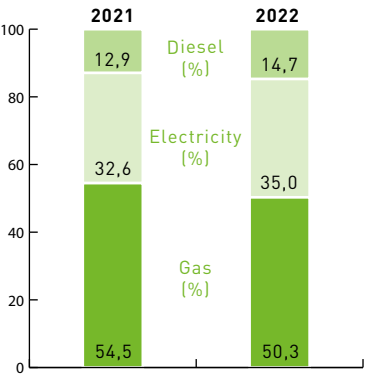


* Quality of light with savings potential – TRILUX Simplify Your Light

OUR ENERGY BALANCE

The lighting industry is one of the more energy-intensive sectors of the economy, and this makes it all the more important for us to leave no stone unturned when it comes to reducing our needs. For example by increasing the use of renewable energy sources.

Distribution of the energy intensity of our company in Arnsberg and Cologne



Energy intensity (kWh)	2021	2022
Gas	14,986,101	12,719,436
Electricity	8,955,787	8,842,351
Diesel	3,537,030	3,711,160
Total	27,478,918	25,272,947

302-1 a 302-4

FUEL CONSUMPTION

TRILUX meets its energy requirements in Arnsberg and Cologne from non-renewable sources with natural gas. In 2022, thermal energy consumption from non-renewable sources totalled 12,719.44 kilowatt hours. In 2021 this figure was 14,986.10 kilowatt hours of natural gas.
→ This means a reduction of 15.13 %.

302-1 c 302-1 i 302-1 ii

ELECTRICITY CONSUMPTION

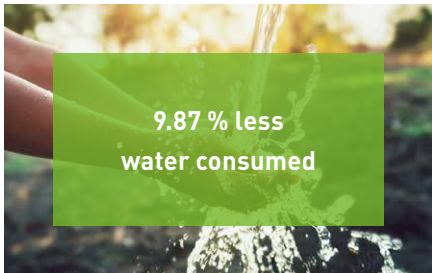
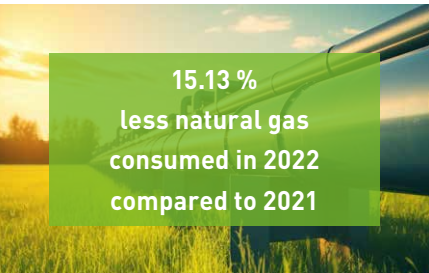
In 2022 we achieved a reduction in electricity consumption to 8,082.42 kilowatt hours compared to 8,195.93 kilowatt hours in 2021.
→ This means a reduction of 1.38 %.

The share of electricity generated from renewable energies was 58.9 % in 2021. In 2022 the figure increased by 4 % to a total of 62.9 %.

WATER CONSUMPTION

In 2022 we used 11,425 cubic metres of water. In 2021 this was 12,676 cubic metres – a reduction of 1,251 cubic metres.
→ This means a reduction of 9.87 %.

Measurably more economical



OUR PRODUCTS AND SERVICES IMPROVE THE CARBON FOOTPRINT OF CUSTOMERS

TRILUX plays a major role in the EU's Green Deal and has thoroughly analysed the package of measures concerning the potential for its own business activities. We then translated this into specific internal and external fields of action.

The European Union has decided that the European continent should be climate-neutral by 2050. In order to achieve this important goal, it has presented the European Green Deal, a package of measures aimed at a profound ecological turnaround. Whether energy generation, industry, operating buildings, mobility or agriculture – green technologies, sustainable products and applications, new business models and the circular economy are to bring fundamental climate and resource protection in all areas of society.

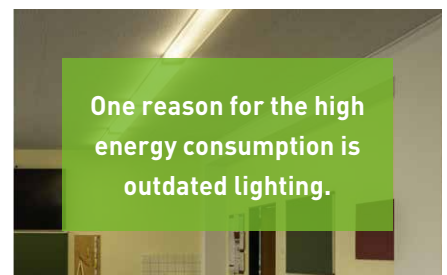
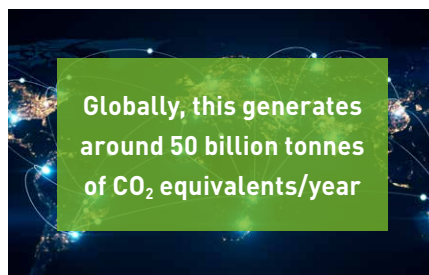
GRI 302-5

GRI 302-1

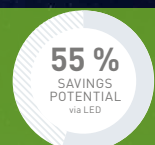
GRI 302-2

TRILUX is already a pioneer when it comes to the end use of its products. LED luminaires and lighting control systems are the basis for lighting solutions with high quality of light, an exemplary energy balance and a long service life. In this sense, climate and resource protection are intrinsic to the core business of TRILUX. Nevertheless, we are continuously looking for optimisation potential at all levels to minimise our ecological footprint.

What you should know about artificial lighting



Up to 55 % of energy can be saved simply by converting conventional systems to LED technology. In Germany, that would be 38 terawatt hours (TWh).





GRI 302-4

EFFICIENT LIGHTING CONTROL

The energy efficiency of LED luminaires is not the only instrument that TRILUX offers for sustainable lighting applications. LED luminaires in conjunction with a light management system (LMS) feature particularly high energy-saving potential. With its LiveLink system, TRILUX offers the entire spectrum of lighting control for almost every indoor and outdoor lighting application.

The system makes it easy to plan and operate complex lighting systems: light is switched and dimmed for example depending on presence (people, vehicles etc.), the available daylight or a suitable time schedule.

LIGHT MANAGEMENT AT THE TOUCH OF A FINGER

Reduce costs, achieve sustainability targets, increase quality of light and improve employee satisfaction all at the same time? All possible with our LiveLink One app, to be launched in August 2023.

Whether in huge logistics halls, glazed office complexes, universities or underground car parks, light management is an enormous plus in all applications. It reduces energy consumption and improves the quality of light through Human Centric Lighting, which brings natural sunlight into interior spaces.

TRILUX has developed its new 'LiveLink One' app to minimise the complexity and risks involved in configuring the light management system. When the system starts up the app automatically recognises networked luminaires in the building, including push-buttons and sensors – and immediately puts everything into operation in a preset basic configuration. Electrical contractors can then configure the luminaires for specific projects.

The app is available on all platforms and devices. There are two technological variants: wired systems with DALI control lines, and Bluetooth-based solutions in which the luminaires communicate wirelessly. While wired DALI solutions feature international standardisation, networked Bluetooth systems are particularly suitable for refurbishment projects without DALI control lines. The following versions are available:

- **LiveLink Basic** for anyone wanting to save energy quickly and easily. The controller has integrated daylight and presence sensors and can control up to 20 connected luminaires.
- **LiveLink WiFi** groups and controls the luminaires flexibly. Individual light scenes can be programmed and called up via time control. Connecting to the cloud provides practical analysis, monitoring and control options.
- **LiveLink (Casambi)** is ideal for all refurbishment projects without Dali control lines and networked via Bluetooth. Whether DALI-typical features such as sensor control (presence and daylight control), general light, luminaire groups, light scenes, HCL or cloud, even emergency light components can be easily integrated.
- **LiveLink SwarmSens (Bluetooth)** is the first choice for saving energy in car parks while maintaining a high level of security. The system can manage over 4,000 luminaires, including in corridors and stairwells. Requisite sensors (daylight and presence) are already integrated into the luminaires. Smart functions such as running light, luminous intensity, general light level and sensor threshold values (motion and light sensitivity) can be quickly programmed.
- **LiveLink Connect (DALI)** extends LiveLink WiFi and is ideal for sports facilities. Up to six controllers can be connected to independently control different hall zones. The master controller implements control for all areas.
- **LiveLink Premium (DALI)** is completely server-based. The system can read in lighting design data (Dialux and Relux) via the interface to the building management system and the number of devices in the network is irrelevant and can be expanded as required.
- **LiveLink Workplace (Bluetooth)** efficiently coordinates standing luminaires and desk luminaires and synchronises all HCL curves in the room or space. Useful for new work-style workstations without fixed desks: users can configure and save their favourite light via app and take it with them to any workstation in the space.
- **LiveLink Retail (Bluetooth)** networks, controls and monitors all luminaires in retail outlets. DALI control lines are superfluous because each luminaire already has the necessary intelligence factory-installed. Controllable via app, push-button, sensor or via the cloud. Thanks to its high level of flexibility, merchandise can be ideally displayed even if the product range changes or the sales rooms and shop windows are redesigned. The system can store and play light scenes, whether for sales areas or spaces for customer events. HCL and day-adaptive control are included. Future-fit? LiveLink Retail can integrate IoT components into the lighting network.



* Sustainable lighting solutions – innovations and technologies – sustainability – company – TRILUX Simplify Your Light

THE RESULT

Lighting is only switched on when actually needed, and does not always provide maximum brightness but desired brightness. As an integrated component, an LMS can contribute to the control of an entire building, but lighting solutions in which LED light sources are controlled strictly as required by an LMS also save up to 85 % energy compared to a system with conventional light sources.

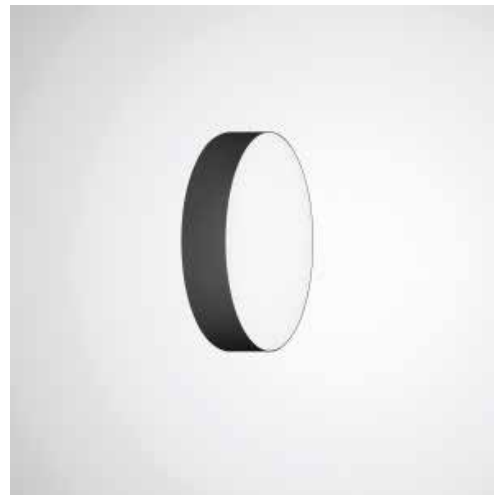
The integrated presence detection and daylight control alone can save 50 % in electricity compared to an uncontrolled lighting installation.* Additional services such as energy monitoring and predictive maintenance offer further potential for conserving resources.

The lighting infrastructure can be controlled with tools such as remote scene activation to e.g. automatically switch off unnecessary lighting. Data on energy consumption, presence detection and potential daylight usage can also be planned using scene timers to optimise energy consumption. The various formats of the available data can be visualised, analysed, created for the energy manager and saved. This energy saving data and cost savings are used for return-on-investment calculations or to calculate CO₂ equivalent savings, and the data itself helps companies to achieve their environmental goals.



ALL-ROUNDERS – THE OLISQ LUMINAIRE RANGE

Tenders for construction projects are increasingly demanding that installed luminaires comply with the EU Ecodesign Directive. This requires lighting for public buildings and offices to illuminate rooms in accordance with standards, consume little energy, harmonise with the architecture and be repairable. In addition, at the end of the luminaire's service life, all components should be recyclable in line with circular economy principles.



- We designed the Olisq as a functional luminaire for public buildings such as educational and healthcare facilities, production sites and office buildings. The range comprises three designs with nine sizes. The round Olisq R was launched at the beginning of November 2022, followed by variants in 2023.
- The luminaire has a long service life of up to 100,000 hours (L80) and is extremely energy-efficient with luminous efficacy of up to 140 lm/W. From the design stage it was optimised for minimum use of materials.
- The luminaire diffuser is made of plexiglass, the branded polymethylmethacrylate (PMMA) of a German manufacturer. The material features very good light transmission and reflection factors, optical properties, durability and recyclability.
- To ensure that no raw material is lost during production, all cutting waste is ground and fed back into the production process. The diffusers contain up to 40 % ground material. This comes in part from other TRILUX series in which the same material is used.
- Thanks to matching drilling and feed points, obsolete luminaires and various other brands can be replaced 1:1 with the contemporary Olisq in building refurbishments without the need for drilling and rewiring during installation.
- All parts can be assembled, disassembled and replaced individually without tools. At the end of the product life cycle, components can be separated by type and returned to the appropriate material cycles. This means Olisq complies with the Ecodesign Directive and the subsidy conditions and is highly cost-efficient for users.
- The wall and ceiling luminaire is extremely robust and highly resistant to stress cracks and heat. For areas demanding even greater impact resistance, TRILUX also offers a version made of impact-modified Resist zk40 plexiglass. This is ideal for e.g. school corridors, sports facilities (for security reasons) and stairwells in car parks to protect from vandalism.



ALL-ROUND REFURBISHMENT SERVICE

New EU legislation and high energy costs are creating strong pressure to refurbish conventional lighting systems, and the Ecodesign Directive has banned the sale of T5/T8 fluorescent tubes, widely used in Europe, since September 2023. The new RoHS Directive (Restriction of Hazardous Substances in electrical and electronic equipment) also bans mercury in discharge lamps from 2023 to protect health and the environment.

What initially sounds like a burden for many companies is, seen closely, a unique opportunity: converting to smart LED solutions quickly pays off both economically and ecologically. It also opens up completely new ways of controlling and monitoring as well as Industrial Internet of Things (IIoT) applications.

**Savings of up to 85 %
possible together with smart lighting control.¹¹**

With our products, modernisation can often be carried out quickly and easily via one-to-one replacements during ongoing operation, and we have put together a refurbishment action team for the purpose. The positive results for customers:

- **Up to 85 % in energy and CO₂ savings** The refurbishment of conventional lighting with LED luminaires cuts energy costs by up to 50 %. In combination with light management this is up to 85 %.
- **Future-proof** With the ban on the sale of T5 and T8 fluorescent tubes a long-term supply of the required light sources is no longer guaranteed, but is with new light sources.
- **Financial support** In Germany the Kreditanstalt für Wiederaufbau (KfW) supports e.g. the energy-efficient refurbishment of non-residential buildings via the Federal Subsidy for Efficient Buildings. When converting to energy-efficient LED luminaires for example, 15 % of the eligible expenditure is subsidised. There are also many regional funding programmes. TRILUX provides appropriate advice.
- **Better light** With LED solutions, the spectral composition of the light can be designed to enable outstanding quality of light and Human Centric Lighting (HCL). After all, the bottom line is that we make light for people, whether in industrial halls, offices, sales spaces, healthcare or educational facilities. A professionally planned lighting concept forms the basis for optimally coordinating the dynamic lighting parameters and ultimately utilising all the benefits of HCL, which in turn enables a healthy biological rhythm and satisfied employees who are supported in their daily work. The advantages also come into play with industrial lighting. In addition to occupational safety and optimum visual conditions, employees' well-being and ability to concentrate are (measurably) improved.

¹¹ E-Line Next LED: a modern LED continuous line system for industry (trilux.com)

CULTEGA LED – BETTER QUALITY OF LIFE AT DESKS

The Cultega LED desk luminaire has been combining excellent quality of light (CRI>90) with a purist, appealing design since 2022. Thanks to three robust joints and asymmetric distribution, all parts of the desk are optimally illuminated. Light colour and brightness can be set individually, either by push-button or app. An HCL curve is pre-integrated and ready to call up.

A unique feature: like all 'mobile' TRILUX luminaires, Cultega LED can be synchronised with the ceiling lighting via the innovative Lightgrid control system, even if the desk luminaire is controlled by DALI and the ceiling lighting by KNX (an intelligent bus system for electrical installations for networking all home / building system technology components). The automatic coordination of mobile and fixed lighting solutions reduces energy costs because the ceiling lighting dims down to the standard level when desk luminaires are switched on. The quality of light is also improved, for example through automatic synchronisation of HCL curves.





EFFICIENCY CALCULATOR FOR A GREAT OVERVIEW

The TRILUX online efficiency calculator provides comprehensive comparisons of the cost-effectiveness and sustainability of our lighting systems. This allows up to five systems to be compared in terms of energy consumption, carbon emissions and total annual costs.

EFFICIENCY EXAMPLES FROM THE TRILUX REFURBISHMENT PORTFOLIO

Sonnos LED – no more halogen downlights

The RoHS Directive prohibits the placing on the market of halogen pins (G4, GY6.35, G9) from September 2023. In the long term this makes the refurbishment of existing halogen downlights (between 800 and 3,800 lumens) unavoidable, but with Sonnos LED it is easier than ever.

Arimo G2 – planar light

Upgrading traditional 'louvre luminaires' is on the to-do list of many companies. As a result, TRILUX has once again optimised its Arimo G2 lay-in ceiling luminaire for easier refurbishing projects. Among other measures, the frame fit has been further developed for difficult refurbishment cases. It can now be easily inserted even into warped module ceilings.

Mondia LED – for walls and ceilings

The Mondia LED wall and ceiling luminaire combines high efficiency and quality of light with an attractive design for a low-cost start to LED technology. Applications: offices, educational, health and care facilities.

Siella LED – for modern office environments

The simple entry-level LED solution for the office sector. Available as a square recessed or rectangular surface-mounted version – optionally with UGR19 and microprismatic optic for VDU workstations or with UGR22 and translucent optic for all other areas.



FORWARD-LOOKING ANALYSES

The TRILUX research division devotes itself intensively to life cycle analysis. As LEDs degrade over time they would normally have to be regularly replaced to maintain maximum energy efficiency, and this would waste valuable resources. Our idea: give an LED module or LED luminaire a second life. Lighting applications vary. One project requires a luminous flux of 1,500 lumens, while 900 is sufficient for another. If an LED module has exceeded the optimum of its sustainable operation in the initial application, it could provide exactly the right operating parameters for a second use with different requirements. The reuse of luminaires and modules takes sustainability far beyond energy saving.

TOP VALUES FOR CERTIFICATION

Our current top of the class in terms of sustainability is the E-Line NEXT LED continuous line. Thanks to its particularly high efficiency (up to 190 lm/W) and quality, E-Line NEXT LED is the best-selling trunking system in Germany and Europe. Above all, however, in many projects it helps towards top scores in sustainable building certification.

- For example the **New Logic III central warehouse**, also known as 'The Tube' in Tilburg (NL) achieved a BREEAM-NL final score of 99.48 % with four stars and an 'Outstanding' rating. This makes it one of the most sustainable logistics properties in the world. The installed E-Line Next LED and LiveLink Premium light management system make an important contribution to this success.
- The **Futurium**, a centre for shaping the future in Berlin, was also awarded a record score, gaining the gold certificate in the Assessment System for Sustainable Building for federal buildings. The compliance score of 89.8 % was the highest score ever achieved at the time of certification in 2018. TRILUX realised a remarkable lighting solution for the building that enters into a close symbiosis with the architecture and uses partly inter-active lighting control algorithms.
- With a BREEAM score of 98.87 %, the six-storey **V-OFFICES** complex in Krakow is the most efficient office building in Poland – and one of the most sustainable in the world. According to the BREEAM International building classification it is the second best office building in the world, and the iconic construction with its striking V-shape and 24,700 square metres of rental space has been consistently designed for ecology, ergonomics and well-being on all levels. As a complete supplier for the lighting, TRILUX ensures maximum efficiency, excellent visual comfort and minimised light pollution with more than 1,500 luminaires for indoor and outdoor use, including light management. These are all factors that flow into the BREEAM score.
- A prime example of energy efficiency and user comfort is **TRIPOLIS** in Amsterdam (NL), realised by TRILUX to June 2022 and the largest construction project in our company's history. The task was to transform the listed site with 49,000 square metres of office space into a state-of-the-art, attractive working environment that sets new standards for indoor climate and sustainability. A total of 10,000 TRILUX luminaires are installed in the interior spaces, with sensors that TRILUX developed together with the company Chess Wise installed in 3,000 of these. This Tri-sensor measures data such as temperature, air flow and CO₂ content in the air and delivers the most precise results on the market to date for accurately regulating heat, air and light in a room and providing a healthy working environment that fosters creativity.



OUTLOOK

THE LARGEST EMISSION SOURCES FOR GREATEST REDUCTION POTENTIAL

TRILUX has already come a long way on its journey to becoming a sustainable company, but many more ideas are waiting. The following fields of action promise the greatest decarbonisation potential for our company and are the focus of further planning.



ENERGY MANAGEMENT CONCEPTS

- Transformation concept for heating energy
- Optimisation of energy consumption- and recovery systems
- Integration of renewable energies (photovoltaics)

LOGISTICS PROJECTS

- Optimisation and reduction of packaging
- Improving packing densities
- Testing the use of electric vehicles

EMPLOYEE MOBILITY

- Expansion of e-charging stations for cars
- Online platform for carpooling

EXPANSION INTO EASTERN EUROPE

Another major project to reduce our carbon footprint is the new plant in Poland. Near Lublin, around 160 kilometres south-east of Warsaw, a new TRILUX site is currently being built on an area of 23,000 square metres. The building complex is designed from the outset according to the highest sustainability criteria. Production, logistics, assembly, product development and IT services will be realised at the location and completion is planned for summer 2024.



Eastern Europe has long been one of the focal points of our international growth strategy, being an important market for us in which, with our local sales team, we are highly successful. We aim to significantly strengthen this position in the Central Eastern Europe (CEE) sales region. The reason for this is that being close to our customers allows us to respond much better to their individual needs and industry trends.

By increasing our internal capacities via this site we will bring back development and assembly activities that we previously carried out with external partners – this reduces costs and increases our flexibility. This, in turn, means we are better prepared for unforeseeable crisis situations, such as the coronavirus pandemic and the war in Ukraine. Like many other manufacturing companies, we have felt our dependence on Chinese suppliers as a result of such factors. However, we cannot and do not want to cope with supply bottlenecks, and instead we will be taking more control of development and production in the future. Independence is an important value and the basis of success for an owner-managed mid-sized company, and the recent conflicts in Asia represent an incalculable risk for European companies. We want to be prepared and are firmly convinced that we are not dependent on our existing partnerships. The way forward is to insource product series from these assembly partners, and we need this third location for the purpose. It will be a useful addition that puts us in an even better position for the international market.

We will take on new staff, which we also want to recruit in the country itself, and we are already offering qualification programmes and retraining courses for interested employees who can imagine relocating. Up to two hundred colleagues are needed.

The new plant in Lublin will increase our competitiveness in the long term and thus also help to secure jobs at the other production sites. This makes the new building an important part of our sustainability strategy.

SUSTAINABLE CONSUMPTION, SUSTAINABLE PRODUCTION

Intention: modernisation of our economy towards an economy that simply uses resources instead of consuming them – from a linear to a circular economy. This includes advancing the transition from an economy based on fossil and finite raw materials to one based on renewable raw materials that respects the earth's resilience capacities.



FOR NATURE AND OUR ENVIRONMENT

Climate change is one of the greatest challenges of the 21st century. Our business activities also have an impact on the environment. Greenhouse gas emissions, waste water and waste are produced, which is why we have been focusing our actions for years on the avoidance of CO₂ emissions and towards forward-looking environmental and resource protection.



We use energy, water and materials as efficiently as possible. With our holistic climate strategy, we identify all reduction potential in the production facilities and consistently pursue its implementation. For example, water consumption is measured and continuously reduced at all TRILUX locations. Waste-water is discharged exclusively into municipal waste-water systems in accordance with official regulations and is ensured by regular water quality tests by the Ruhrverband. In Arnsberg we also operate our own water treatment plant to equalise pH values.

SUMATRA PROJECT – RESEARCH FOR THE FUTURE

This first initiative in the German Ministry for Economic Affairs and Energy research area on resource efficiency in the context of the energy transformation started on 1 June 2021 and ran until September 2023. TRILUX was the project coordinator and partners were the Fraunhofer Institute for Reliability and Microintegration (IZM) and the companies Interseroh and Osram. Kardoff Ingenieure Lighting Design were involved as an associated partner. Together, we wanted to develop (even) more sustainable LED lighting systems and we focused not only on energy efficiency but also on the abiotic consumption of resources, i.e. the valuable materials used. We will communicate specific results in the next report.

GRI 301-3

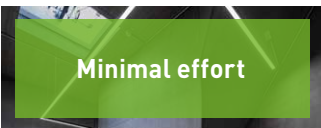
The first important basis was life cycle assessments which we drew up and analysed with the Fraunhofer Institute. They show the components and life cycle phases that have the highest environmental impact and therefore offer the greatest reduction potential. Just how seriously we take this is demonstrated by the fact that we had to abandon our first concept for a prototype luminaire: the life cycle assessment had shown that the design decisions made would not have led to any environmental benefits. A second concept, on the other hand, will have a more sustainable ecological balance, as also confirmed by those responsible.

The second important basis for sustainable luminaire design was research into the recycling process and the recyclability of our products. In the SUMATRA project we initiated a discussion with recycling companies for the first time. The objective: to design our luminaires in such a way that they facilitate the recycling process and achieve a high recycling yield. The product life cycle was examined with the aim of minimising material consumption through new, alternative usage concepts.

TRILUX is already one of the industry pioneers in this field with forward-looking service solutions such as 'light as a service' and 'pay per use'. The principle is that lighting remains the property of TRILUX at the end of the contractually agreed utilisation and is then recycled in an ecologically optimal manner. This also includes, via alternative application scenarios, the targeted utilisation of certain components or the recovery of raw materials.



Strong performance: light as a service



Rent customised light in best TRILUX quality. TRILUX takes on all tasks relating to planning, installation and operation, including disassembling the old system.



Off-balance sheet realisation without own investments protects liquidity. The constant rental rate over the entire term offers maximum planning security.



Rent plus operating costs for the new energy-efficient light are usually significantly lower than the operating costs of the old system, with the latter being tax-deductible.



TRILUX bears the product and liability risk and guarantees smooth operation of the system. Service and maintenance work is included in the rent.

MINIMISING THE USE OF MATERIALS AND RAW MATERIALS

TRILUX succeeds time and again in improving the quality, performance and functionality of its products, as well as successfully increasing resource efficiency with these methods.

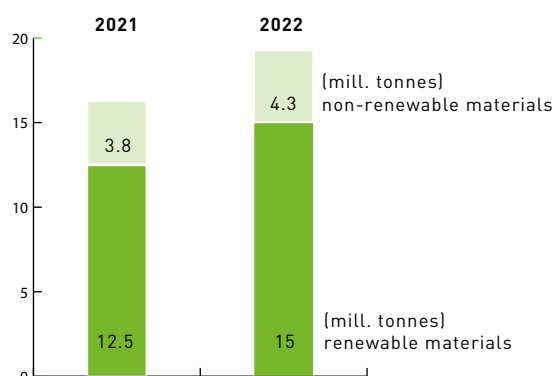


Products generating no waste and not becoming waste themselves: the epitome of a circular economy. For us, this means constantly reducing the amount of raw materials and materials used in our luminaires without compromising on quality and function. It goes without saying that we also want to avoid the use of hazardous, critical and particularly valuable substances.

GRI 301-1-a

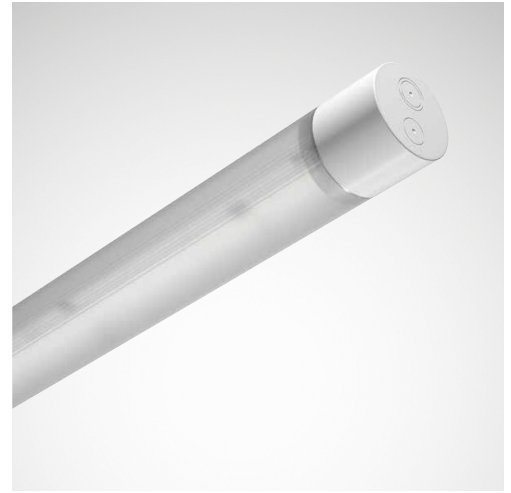
GRI 301-2

- In 2021 we used **16.5 million tonnes of pure raw materials** to manufacture and package luminaires at our German production sites. Of these, **12.5 million tonnes were non-renewable materials** and **3.8 million tonnes were renewable materials** (packaging), which corresponds to a **share of 23.2 %**. Added to this were other components, composite materials and purchased parts.
- In **2022**, **19.1 million tonnes of pure raw material** were used. Of these, **15 million tonnes were non-renewable materials** and **4.3 million tonnes were renewable materials** (packaging), which corresponds to a **share of 22.2 %**. This was added to by other components, composite materials and purchased parts.



OUR TUGRA: VISIONARY

Since the end of 2022, the TUGRA luminaire has been showing what the future of lighting will look like. It already fulfils future requirements for architectural design and smart building, and is the perfect symbiosis of sustainability and smartness. With this open system, everything is interchangeable so that the luminaire can be used over a very long life cycle. In co-operation with the NOA design studio, it took two years to develop. With over 250 design awards and more than 120 patent applications, the product design agency is currently one of the leading agencies in the building sector and we have been working together since 2017. The project was a team effort by TRILUX Germany and ZALUX Spain, where TUGRA is produced.



The innovative luminaire features maximum efficiency (189 lm/W), a multi-award-winning cylindrical design and a smart IIoT concept, along with unrivalled flexibility. It can be used as a single luminaire or light line and, with its high standard protection rating and extremely versatile range of configurations, provides ideal light in every area of functional industrial architecture ranging from car parks, warehouses and production facilities to computer workstations. Everything is possible – surface-mounting, wire suspension, wall mounting, on continuous line profiles via mounting rail accessories or with tube clips in more unusual locations. This simplifies the planning and installation process.

TUGRA is available with an integrated LiveLink WiFi control unit for more advanced light management, and cloud functions and Human Centric Lighting (HCL) can also be implemented in no time at all. TUGRA is also happy to take on many additional tasks: emergency lighting components, 230 V power supply for external consumers and data exchange with downstream systems can be integrated.

One of TUGRA's unique characteristics is its future viability – cameras, loudspeakers and WiFi repeaters can be easily integrated into the lighting network via function modules with standardised interfaces, even retrospectively.





SOME SUSTAINABLE FACTS

THREE MATERIALS

Available in PC, PMMA or innovative bio-based plastic

NO COLOURANTS

Only pure materials without colourants that can be optimally recycled

ACCESSIBLE

Completely accessible: defective parts can be replaced with minimum effort

PACKAGING

Project-specific packaging and bundles minimise waste and plastic-free packaging protects the environment

EFFICIENT

Efficient installation by one person and ideal for 1:1 refurbishments in record time

ROUND

Cable channel for through-wiring with clearance for additional cables (e.g. data cables)

IP66

Optimally protected against dust, heavy splash water and high water temperature

IMPACT RESISTANT

High protection against damage and vandalism thanks to IK10 impact resistance

IP69K

The IP69K version fulfils high industry standards and HACCP requirements for the food industry



www.trilux.com/tugra

NEW PRODUCT AND MATERIAL CYCLES

GRI 301-3

TRILUX acts as a pioneer in the industry when it comes to designing innovative sustainable business models, bringing them to market maturity and applying them. The three central approaches here are extended product life cycles, reuse and recycling. With 'pay per use', customers no longer buy lighting technology but pay monthly rent for a fully planned and installed LED system, including maintenance.

In addition to the many sustainability benefits that this full-service concept already offers during operation, a primary factor is that TRILUX remains owner of the luminaires. After disassembling the products, we lighting experts thus decide whether they are suitable for further use in a second project, whether they can be completely overhauled and updated with new components or how individual assemblies and components can be reused. Dismantling instructions are also available for all TRILUX products to simplify the dismantling of luminaires for repairs or other recycling management purposes.

E-Line, the circular champion

This is precisely why we have further developed E-Line. One of its strengths is its enormous ease of refurbishment, which means it can replace outdated, inefficient T5/T8 trunking in no time at all. The conventional E-Line predecessor model can be converted to LED technology in just a few seconds by replacing the lamp module without tools. In this way, we accelerate the market transformation towards sustainable variants.

E-Line NEXT LED is also available in a particularly long module length of 2.25 metres especially for larger projects. This above-average luminaire length enormously reduces installation work and packaging and saves 30 % in control gear units.

E-Line NEXT LED is also exemplary when it comes to packaging waste: instead of shipping the support profiles individually packaged or as a bundle on pallets, we can also deliver them – pre-assembled with almost no packaging – on our LED shuttle, a five metre long transport system with wheels. This significantly cuts the amount of waste, saves time when unpacking and disposing of waste and speeds up mounting work by up to 15 %.



OUR INTERNAL PACKAGING GUIDELINE



At TRILUX we don't like unnecessary packaging. All unavoidable packaging is based on efficient resource management:

- 1

Substitution of plastics wherever possible.
- Innovation through reusable, recyclable or compostable plastics.

2
- 3

Use of high levels of recycled material.
- The ecological footprint must not increase.

4
- 5

Correct sorting for better recycling.
- Optimisation of the take-back process for reuse.

6



We implement these three measures:

1. Reduced packaging: We have developed a reusable wooden crate for our ARIMOF M84 and LuceoS luminaires that saves 21 kilograms of packaging per crate. This also reduces installation time for electrical contractors by up to 30 %. 40 crates for larger projects are available for our clients. A leading German supermarket chain has already saved 5.1 tonnes of packaging.

2. No packaging: The TRILUX E-Line LED Shuttle was invented especially for delivering our continuous line system. 52 kilograms of packaging material are saved per shuttle use.

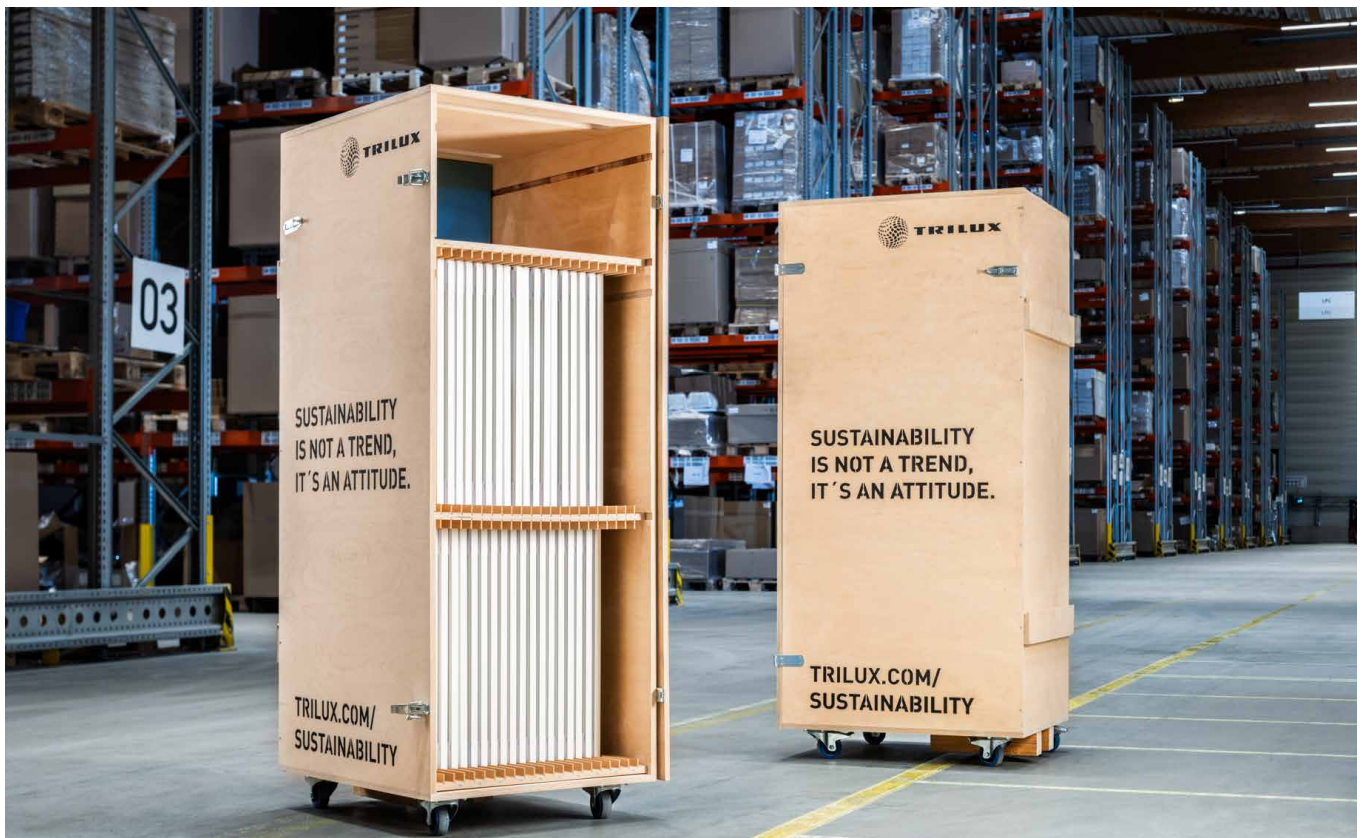
3. Bulk packaging: We use drastically less cardboard for the bulk packaging of our TRILUX ARAGON FIT and OLEVEON FIT surface-mounted luminaires. There are two variants:

Packaging 15: 175 grams of cardboard packaging per luminaire. This corresponds to a 45 % reduction in the amount of cardboard for a large pack of 15 luminaires.

Packaging 63: Saves 375 grams of cardboard packaging per luminaire. This corresponds to a 96 % reduction in the amount of cardboard for a large pack of 63 luminaires. This also minimises the time needed for unpacking.

With E-Line in 2022, we achieved **80 tonnes of actual savings** for 1.5-metre inlays and **100 tonnes** of actual savings for 2.27-metre inlays.

Overall, up to 21.6 kilograms of packaging material per unit can be avoided thanks to bulk packaging for all stackable luminaires, and TRILUX offers this service throughout Europe. A leading car manufacturer in Germany has already been able to avoid 8.1 tonnes of packaging as a result.



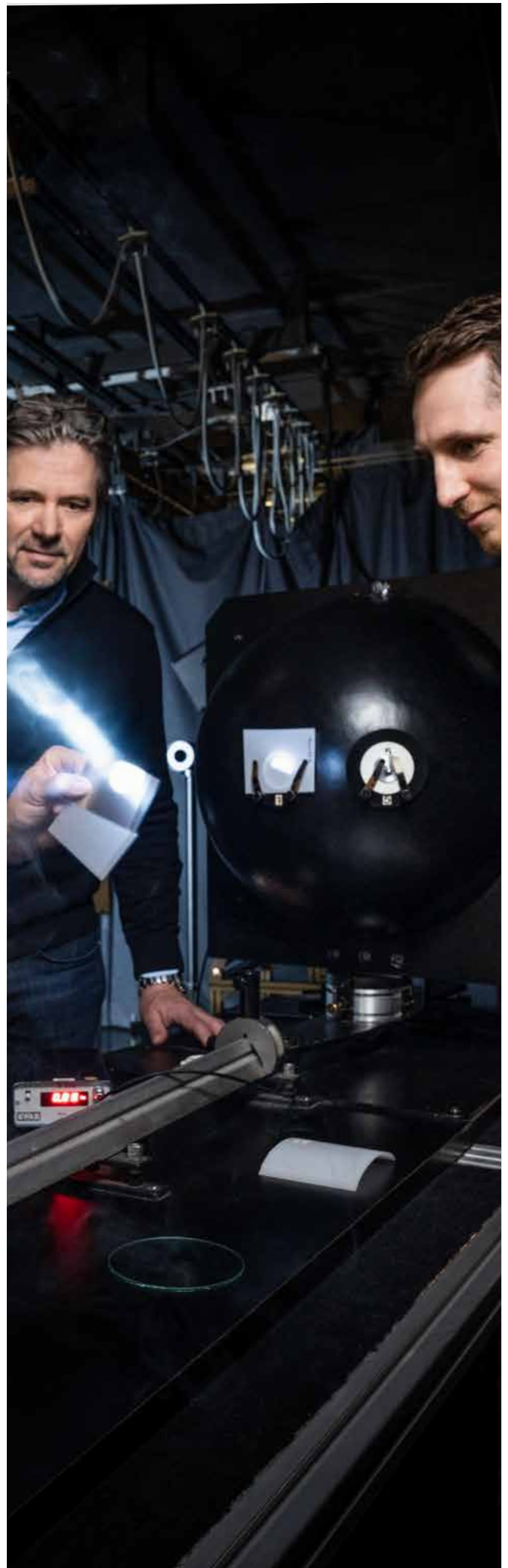
ANALYSES BY INDEPENDENT LABORATORIES

GRI 306-2

In order to save or replace materials, we need to know the exact composition of the components we use. To exclude hazards for people and the environment, all TRILUX products fulfil the requirements of the European Product Safety Directive and are of course RoHS-compliant.

The laboratory analyses also allow evaluations with regard to due diligence obligations in the raw material supply chain. In this way, conflict raw materials such as tin, gold, tantalum and tungsten or critical raw materials declared by the EU can be identified. TRILUX uses this data to continuously optimise its products in terms of ecological, economic and social sustainability.

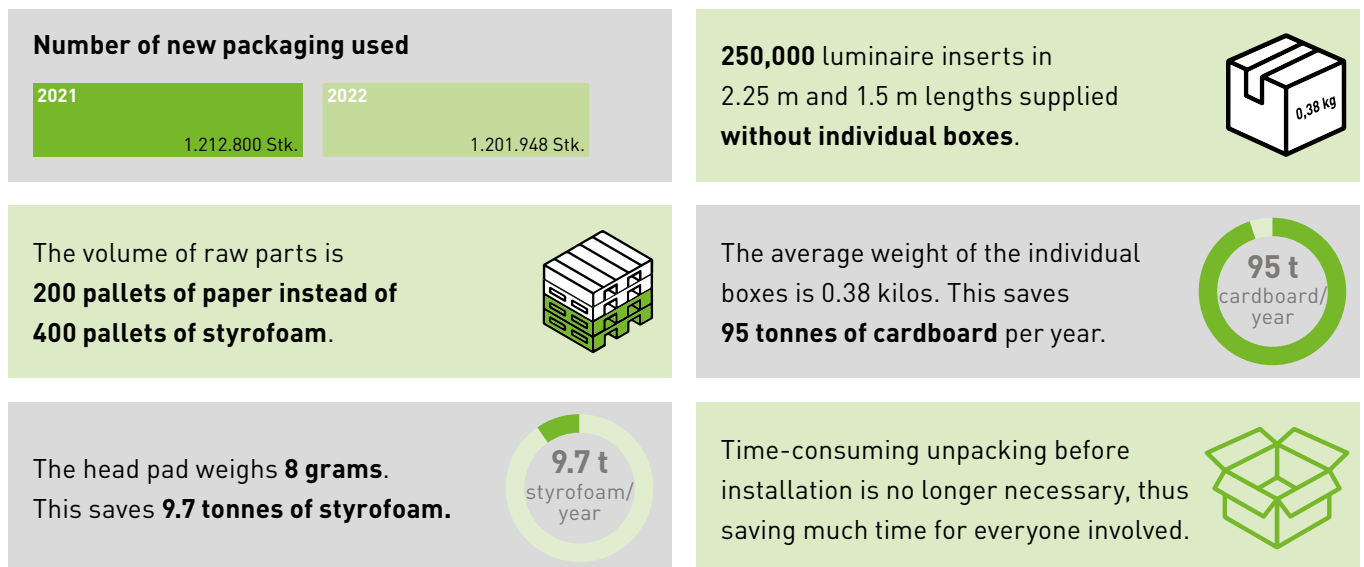
We invest a great deal of effort and expertise in these detailed material analyses and their evaluations. CO₂ balances and the ADP (abiotic resource consumption) are standard. The application of various assessment criteria such as global warming potential, ozone layer depletion potential, fresh water aquatic ecotoxicity and acidification provides a complete picture of the environmental impact. We derive effective measures from this.



OPTIMISING ALL PACKAGING

Reducing and avoiding material waste is part of our everyday work. A prime example: the packaging for the E-Line NEXT does not use expanded polystyrene (EPS), which most people know under the trade name of polystyrene. Instead, we use cardboard. This is because polystyrene is not biodegradable and recycling it is very costly, as it must be disposed of as "hazardous waste" in accordance with the European Waste Catalogue Regulation. The consequences of discarded Styrofoam coffee cups, for example, can be seen in the sea: marine animals that swallow it. animals that swallow it can suffocate. In addition, the sometimes toxic substances get into their tissue. This is then ingested by people who eat fish. Styrofoam is also made from polystyrene beads, which are made from petroleum. Just under three litres of crude oil are needed to produce one kilogram of polystyrene.

Instead, TRILUX has been using cardboard since 2022. The cardboard upholstery is coated with a wafer-thin film to prevent scratches to the optics. This film, called Walki-Line Ultra, only accounts for around two per cent of the total weight of the upholstery and can be disposed of in the paper bin. We have had this certified. The upholstery is assembled by a robot. One transport pallet can hold 6,000 pieces of the new packaging. This increases the capacity utilisation of each individual lorry. That saves a lot of CO₂ when fewer lorries are needed. Interesting facts:



OUR ECO-EFFICIENT USE OF MATERIALS

GRI 301-1

By implementing a circular economy, we can reuse valuable materials. Firstly, we reduce our ecological footprint. Secondly, we achieve economic benefits. It is therefore highly relevant for us to quantify and transparently communicate the use of materials.

All the materials we use are divided into different categories, including raw materials, auxiliary and operating materials, semi-finished products or parts and packaging materials. Raw materials such as aluminium, steel and plastic granulates are used in large quantities, while packaging materials such as cardboard, film and wood also make up a significant proportion.



AVOIDING WASTE IS ESSENTIAL

GRI 306-1

TRILUX continuously analyses all stages along the value chain with the aim of identifying and utilising as many options as possible for recovering and recycling valuable and auxiliary materials.

Recovering raw materials from discarded products protects the environment. In production, for example, excess acrylic glass is regranulated and reused to not produce any further waste. Recycling also has other advantages: Recovery is often more energy and cost efficient, and recycled materials are also usually sourced locally. Anything that cannot be recycled or reused is correctly disposed of. All waste is already collected internally by type. This mainly involves metal, plastic and cardboard waste.

ENSURE CORRECT DISPOSAL AT ALL TIMES!

When it comes to waste the TRILUX motto is 'avoid before recycling before disposal'. This rule applies to all substances and materials, but is particularly strict for those categorised as hazardous to humans and the environment. If the use of such substances cannot be avoided, their correct disposal must be ensured. To fulfil all legal and regulatory requirements, we have been cooperating with the waste disposal and recycling specialist REMONDIS for several years. This company also carries out the transport of so-called hazardous waste for us. Our legally compliant and exemplary approach to waste management (separate collection rate in accordance with the German Commercial Waste Ordinance) is checked and confirmed annually by a recognised expert from ENVIZERT (an environmental verifier and publicly appointed/sworn expert based in Coesfeld, Germany). No non-conformities or significant leaks of harmful substances were detected.

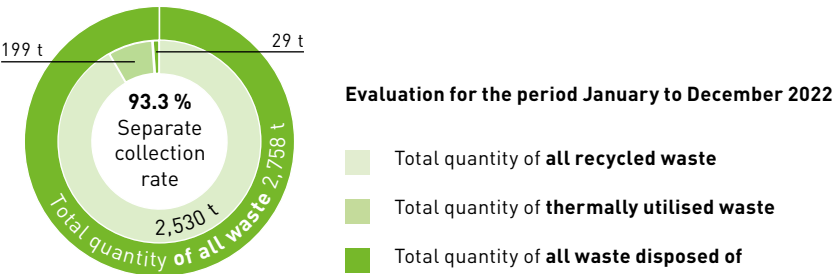
Monthly review

We ensure that our waste is handled in accordance with contractual and legal obligations by checking receipts on a monthly basis and by visiting our service provider’s disposal sites.

REMONDIS checks invoices, credit notes and the corresponding weighing slips and waste disposal certificates. To ensure the accuracy of data, check weighing processes are carried out every month at the collection point at the side gate of the TRILUX plant in Arnsberg. TRILUX uses these procedures to systematically record and monitor waste-related data in order to obtain an accurate mapping of waste management and identify possible improvement measures.

GRI 306-5

In 2022, TRILUX forwarded **2758 tonnes** of waste for disposal in Cologne and Arnsberg. This included **24 tonnes** of hazardous waste.

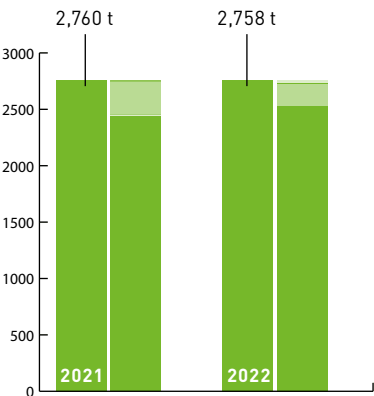


GRI 306-3

GRI 306-4

GRI 306-5

Total weight of our waste volumes in comparison



Waste utilisation and disposal

Since 2022, we have been classifying separately for incineration and disposal. In 2021, both methods of waste disposal were categorised as incineration.

	2021	2022
Recycling of non-hazardous waste	2,437	2,528
Recycling of hazardous waste	18	1
Incineration of non-hazardous waste	287	199
Incineration of hazardous waste	17	-
Disposal of non-hazardous waste	-	6
Disposal of hazardous waste	-	23

WE COLLECT 93 % OF ALL WASTE FROM THE COMPANY SEPARATELY.

GRI 307-1 | GRI 306-2

SAFE MANAGEMENT OF ELECTRONIC WASTE

The German Electrical and Electronic Equipment Act (ElektroG) applies to the majority of TRILUX products. As the German implementation of the European WEEE Directive (Waste of Electrical and Electronic Equipment), it regulates the placing on the market, return and disposal of electrical and electronic equipment. TRILUX has concluded a contract with Cologne-based Interserroh-Dienstleistungs GmbH to fulfil take-back obligations resulting from the legislation in Germany. This company handles return, recycling and disposal.

GRI 306-2-a

WE ARE RECYCLING PROFESSIONALS

The TRILUX Group has been continuously reducing its waste volumes for years. We start at the product creation stage to reduce packaging waste, and recyclability is a key criterion in the choice of materials and design.

Clear rules for suppliers

TRILUX obliges all suppliers to take back their packaging. To simplify recycling, they must also label their products and components concerning recyclability.

Important to know

In order to continue reducing our company footprint, we need to know the carbon footprint of each individual product. With the help of granular data on materiality and carbon emissions, products can be further optimised in terms of various sustainability aspects.

Saving tonnes of paper

Of course, our sustainability strategy does not only focus on our products and manufacturing processes – we see it as a holistic commitment that encompasses all areas of the company. Since February 2022, TRILUX has been cooperating with its neighbouring hygiene paper group Wepa Professional.



We collect used towel paper in our washrooms in Arnsberg. Röhrtaler Wertstoff GmbH, which is also based locally, collects the used paper in Hüsten, takes it to Wepa in Müschede and feeds it back into their paper production cycle. The common goal: to keep 100 % of valuable paper fibres in the cycle. This saves the environment around 90 % of CO₂ emissions and significantly reduces levels of waste: we expect to save almost 14 tonnes of paper per year in the future. In 2022, 3.3 tonnes of paper towels were returned to Wepa.

Careful handling of solvents

We use large quantities of metal in the lighting industry. This presents us with special challenges, which we of course do not leave unsolved.

- Solvents are used to degrease and clean metal parts such as sheet steel. At TRILUX, these substances are reprocessed in a closed circuit with fully automatic filter systems and fed back into the cleaning process.
- The resulting oil sludge is retained in separators. We dispose of residues separately from other waste types.
- TRILUX coatings are based on solvent-free powder coatings.

SAVING MEASURES TO PROTECT RESOURCES Our cooling systems with closed water circuits significantly reduce the amount of water required in production. We use hot water boilers with flue gas heat exchangers and automatic, pressure-dependent and speed-controlled circulation pumps, which achieves considerable energy savings.

Further data collection

To make our production even more sustainable, we naturally also want to increase the proportion of recycled raw materials. These are not yet available in the quantities and qualities required for automated production. We are in close dialogue with our supply partners in this regard, and for the future we plan to consistently request specific KPIs on the recycling content of raw materials. We are working on obtaining this information in order to measure and document our progress towards a closed-loop circular economy.

**TRILUX IS COMMITTED TO THE CONTINUOUS IMPROVEMENT
OF ITS ENVIRONMENTAL PROTECTION PERFORMANCE AND THE
CONSISTENT AVOIDANCE OF ENVIRONMENTAL POLLUTION.**

**WE ENCOURAGE OUR SUPPLIERS AND SERVICE PROVIDERS
TO ACT IN PARTNERSHIP WITH US IN ACCORDANCE
WITH THESE PRINCIPLES.**



GRI 204-1

RESPONSIBLE PROCUREMENT PRACTICES

Thanks to hard work, we were lucky to be able to deliver even at the height of the coronavirus pandemic. This was also often due to long-standing, partnership-based relationships with our suppliers, and we have built up and maintained these trusting partnerships over decades. Our partners are mainly based in the European Union.

A significant advantage for the entire TRILUX Group is the 'Made in Europe' designation, i.e. independence from Chinese suppliers thanks to our subsidiary's production facility in Zaragoza among other locations. The supply chains in Europe are short and stable, and the entire Spanish product portfolio is geared towards sustainability and savings and is voluntarily certified by an external laboratory.



SELF-COMMITMENT IN THE CODE OF CONDUCT (COC)

The TRILUX Group takes its social responsibility towards customers, business partners and employees and its responsibility towards the environment and ethical requirements in business very seriously. In order to document this philosophy and action to the outside world it has taken up a wide-ranging self-commitment: we have signed up to the Code of Conduct of the German Electrical and Electronic Manufacturers Association (ZVEI) (see page 21) and the German Mechanical and Plant Engineering Association (VDMA), and have declared compliance with their CoC to be binding for all branches and business units. We specify the same from our suppliers further down the value chain.

The regulations contained in the ZVEI-VDMA Code of Conduct represent an important element within the TRILUX compliance programme and are anchored in guidelines, information documents and training courses. Important principles are e.g.:

- Compliance with the core work norms for labour and social standards of the International Labour Organisation
- Upholding and promoting human rights in accordance with the UN Charter on Human Rights
- Compliance with all laws in the field of activity
- Fair competition
- Environment- and resource protection

TRILUX reserves the right to check compliance with the CoC by means of audits, with these assessments including explicit evidence of sustainable behaviour in economic, ecological and social terms. Strict guidelines are in place for the selection of business partners, and their evaluation is based not only on quality- but also on sustainability criteria.

410-1

414-2

The TRILUX compliance programme

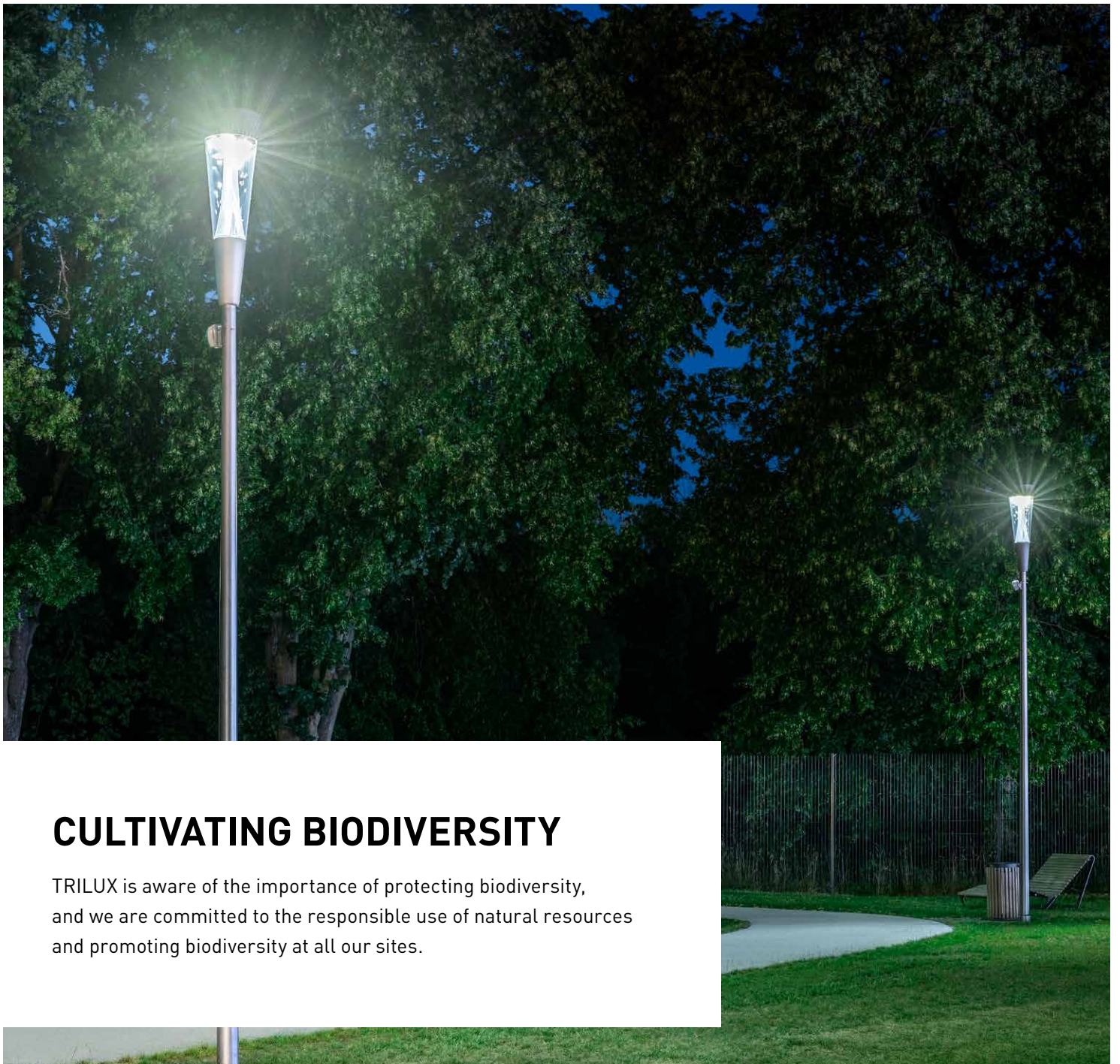
The extent of our regulations focuses on the areas of **corruption prevention, antitrust law** and **export responsibility**, and the TRILUX Akademie offers e-learning courses on precisely these topics.

The multimedia course provides knowledge about the most important laws and rules, sensitises course participants to typical risks and shows how to deal with them. Correct behaviour in conflict situations can also be trained as part of interactive exercises.

A TRILUX guideline is also part of the course which formulates rules and regulations that help all employees to act in everyday business in compliance with the rules. We are not aware of any violations of the requirements set out in the compliance guideline.

There is a reliable reporting and verification system in place for the compliance training.





CULTIVATING BIODIVERSITY

TRILUX is aware of the importance of protecting biodiversity, and we are committed to the responsible use of natural resources and promoting biodiversity at all our sites.

The Arnsberg site covers an area of 114,000 square metres and in Cologne the site has 7,000 square metres. Neither is located in the immediate vicinity of a protected area or an area of high biodiversity value. They are therefore categorised as low in both cases.

We do not yet systematically collect biodiversity data, but we will systematically build these up over the next few years.

GRI 304 GRI 304-2

Insect-friendliness is a relevant topic in the context of ecological sustainability, and is of importance in connection with our range of outdoor lighting. Road luminaires have a direct effect on flora and fauna, both in natural spaces and towns and cities, and we are therefore analysing the effects of light on nature and species conservation. The top maxim for all new installations and modernisations is ‘as much light as necessary, as little light as possible.’ Compared to other lighting technologies, LED luminaires are best suited to fulfil this requirement because their light can be directed particularly well via reflectors and lenses and can be switched and dimmed as required. There are also variants with insect-friendly light spectra.

The power of attraction of light

Artificial light sources attract insects and bats in particular, but also birds, and with serious consequences: fast-flying insects are injured or killed on impact with the luminaire housing. In other cases, animals enter the luminaire housing and die there. If insects move near bright luminaires they are easier for their predators to see, and as not all insect species are equally attracted to light, the balance between populations can be disturbed.

Misdirected birds

Many migratory birds fly at night. Light sources can clearly irritate them and throw them off course. It is assumed that this is because birds can perceive their orientation aid – the earth's magnetic field (magnetic field lines) – with the help of photoreceptors in the eye. These receptors are adjusted to natural light conditions, i.e. to darkness at night, and if bright artificial light hits the bird's eye, this sensitive system becomes confused and disturbs its orientation.

Avoiding light corridors Illuminated roads and paths can be high barriers for animals. So-called light corridors reduce their habitat, which can hinder their search for food. Fragmented biotopes can lead to small, isolated populations of a species and thus to disadvantages in reproduction. However, they can also produce species compositions with unfavourable predator-prey relationships. A light barrier can also be a problem for fish during their spawning migration. This should therefore be taken into account with bridge lighting.

Disturbed rhythm of life

Lighting can cause nocturnal animals to wake later, leaving them less time to forage for food. This applies to light in front of the flight exit holes of bats, but has also been proven for certain amphibian species. It also occurs that songbirds lay their eggs earlier than their natural rhythm under the influence of road luminaires. This can mean that the young animals' food requirements do not start at the same time as food being most available.

We focus on intelligent species protection

LED light can protect nocturnal animals and insects. Short-wave light in the blue and UV range is tempting for many species. Warm white LEDs (3000 - 2700 Kelvin colour temperature) with only a low short-wave radiation component on the other hand are insect-friendly. Research projects confirm: competently planned outdoor lighting with LEDs means a lower hazard potential compared to conventional lamps.

Our animal-friendly luminaires

LED post luminaires are ideal for animal welfare because wattage classes within the luminaire series can be very finely graded. This means that a model with the right luminous flux is available for any project-specific requirement. Avoiding unnecessary light emissions requires well-chosen luminaire locations and suitable reflectors and lenses.



Examples:



Lumantix K



Cuvia

- Adaptive lighting in the late evening hours directs the light in a more targeted and environmentally friendly way.
- Luminaires with a high indirect light component that are visible to insects from a greater distance make sense.
- Additional anti-glare plates or tubes can be used for special project requirements.
- It is also helpful to use low mounting heights, i.e. low posts, with compliance to all standard specifications and visual requirements.
- To prevent insects from burning, the surface temperature of the luminaire housing should not exceed 60 °C.
- A well-sealed housing prevents animals from entering the luminaire and dying.

INDUSTRY, INNOVATION AND INFRASTRUCTURE

Intention: to build a sustainable, resilient and reliable infrastructure, promote inclusive and sustainable industrialisation and foster innovation. However, since global warming and environmental pollution began with the industrialisation of Western countries, the transition to environmentally friendly production processes is necessary. In order to improve research and promote innovation, funding for science should be increased.



PROGRESS STEP BY STEP

As the German market leader for technical lighting, we not only want to maintain an overview in a highly dynamic market, but also act with foresight. This is why we invest heavily and continuously in research, development and innovation.

30 % energy savings

could be achieved in a case study with daylight control and presence detection. In addition, the calculated service life of the LED is increased by up to 37,000 operating hours.



TRILUX consistently pursues all options for action in order to perfect its product portfolio in terms of efficiency and sustainability. At the same time, we are constantly on the lookout for new technologies, processes and business models that promote climate and resource protection.

With this in mind, the company took part in the European REPRO-LIGHT research project from October 2017 to September 2020. Its aim was to accompany Europe's lighting industry on its path to a more sustainable and competitive future and to prepare it for a circular economy.

In addition to the carbon footprint of TRILUX LED luminaires, the analyses focused on abiotic resource consumption (ADP, see page 65), acidification potential and eutrophication (accumulation of nutrients in bodies of water).

A look at the CO₂ emissions gave a result that we were already familiar with: the energy consumed in operating the luminaire accounts for over 90 % of total greenhouse gas emissions across all its life cycle phases.

From insight to product

The assessment according to the ADP gave a different picture of the impact on the environment: 77 % was due to the production phase and only 23 % was related to the utilisation phase. At 75 %, the LED modules accounted for by far the largest share of the ADP of the production phase of the entire luminaire.

In view of this balance, the TRILUX research division devoted itself intensively to interpreting the life cycle analyses. From this, we developed our rental models and the E-Line NEXT continuous line luminaire.

E-LINE NEXT CONSUMES MORE THAN 61 % FEWER ABIOTIC RESOURCES THAN ITS PREDECESSOR MODEL.

Reduction of valuable raw materials

This latest version of our industry leader is more than 61 % better than its predecessor in terms of abiotic resource consumption. We largely avoid the use of precious materials, especially in the LED module.

In conventional LEDs, gold wires are used to connect the chip to the connection frame. With flip-chip LEDs, contact is made from the chip to the connection frame via contact surfaces. Therefore, no gold bonding wire is used. Gold is one of the conflict commodities, the extraction of which poses a particular threat to the environment and human rights. Using less of the precious metal is therefore important for our sustainability efforts. TRILUX uses flip-chip LEDs throughout the 'Performance' product category of the E-Line.

Own research: Pacelum (Zalux Farming)

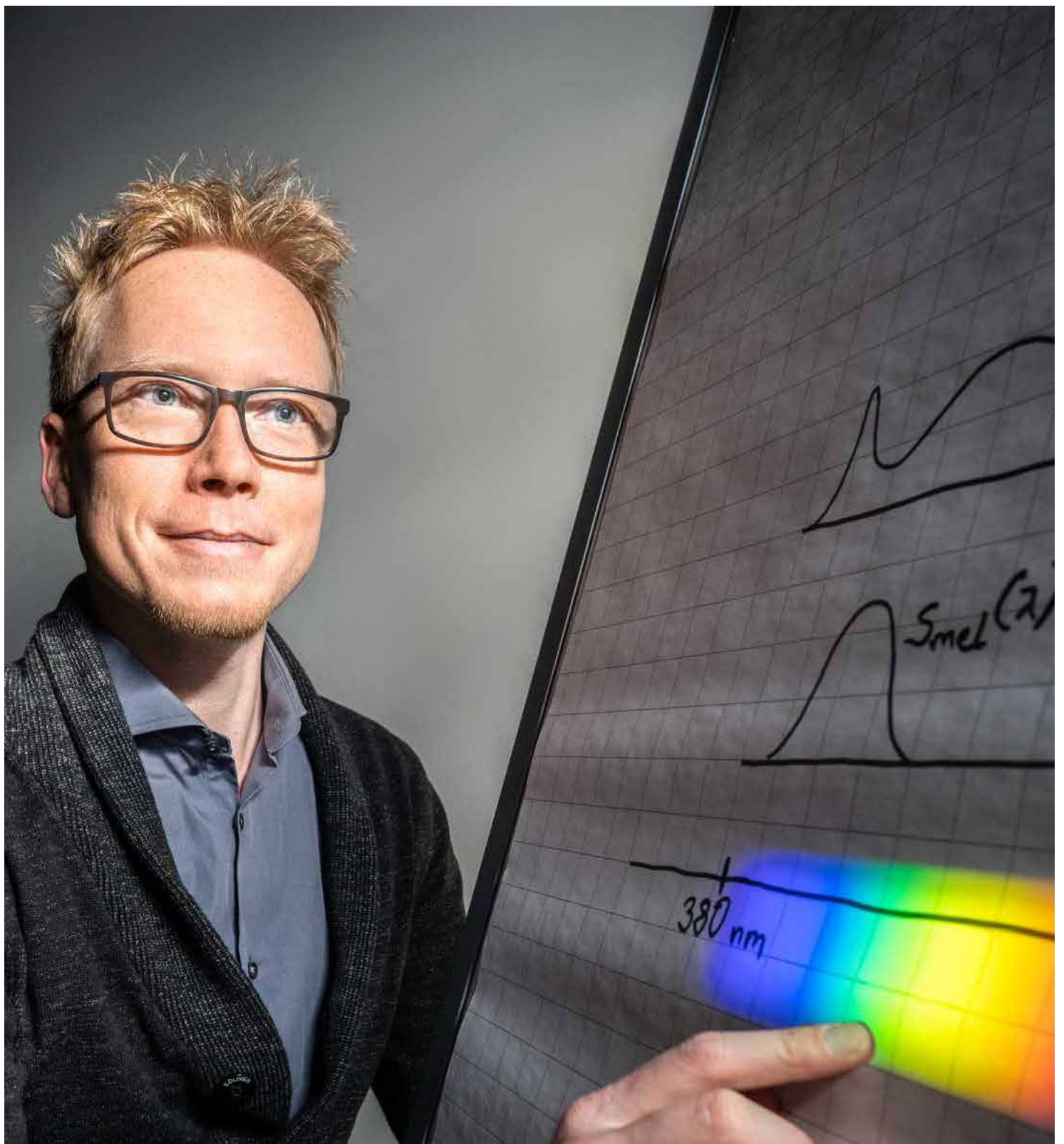
Lighting for agriculture: with the founding of the Pacelum business unit (plant and animal centric illumination) in 2018, TRILUX bundled its expertise in lighting systems for animals and plants. Since August 2020, Pacelum (Zalux Farming) has been a wholly independent TRILUX subsidiary in Cologne. This step will enable the company to act faster, more flexibly and more individually with high growth potential.

The use of innovative, biologically effective lighting solutions for flora and fauna is diverse. Greenhouses, animal stables and aqua farms, for example, require highly specialised light.

Salad in a Swiss tunnel

To investigate the effectiveness of the light under realistic conditions, we've been growing lettuce plants in the world-renowned Hagerbach V-S-H test tunnel in Flums Hochwiese, Switzerland, since 2018. In extensive series of tests we examine various theories, models and simulations designed to optimise underground growth.





COOPERATIVE RESEARCH LEADS TO INNOVATION

We see ourselves as a driver of sustainability for our own business activities, but also for the lighting industry. This is why we maintain intensive cooperation, partnerships and networks and are involved in committees and scientific circles.

We have been developing luminaires based on standardised lamps for one hundred years, but since entering the LED era in 2012 we have been setting the standard in the former lamp sector. TRILUX became an electronics specialist. During this phase, we founded our Innovation and Technology Center (ITZ) to master LED technology.

We quickly standardised LED modules for our luminaires internally, and in 2015 we developed our first own LiveLink light management system. This expanded our expertise to include software development and laid the basis for launching digital services in 2017. Today, we are an application-based solution provider.

Shorter product life cycles, the blurring of boundaries between the standard portfolio and customised solutions, strong competition with increasing product similarities, new regulations, laws, standards, the closing of innovation gaps, avoiding insular knowledge and safeguarding existing expertise are current and future tasks in the development sector.

To master these challenges, we are bundling the expertise of the former ITZ research & development areas, lighting series development and special luminaires production (SOF) into 'Innovation & Development' (IDEO).

WORKING WITH UNIVERSITIES

We work continuously with various universities on research and development topics.

Some current examples.

- TU Darmstadt: LED technology and its reliability
- Berlin Technical University: Outdoor lighting
- University of Applied Sciences and Arts (HAWK) Hildesheim: lighting design, perception of lighting
- Cologne International School of Design (KISD): product design
- Hamm-Lippstadt University of Applied Sciences (HSHL): materials for optics, especially their durability
- Ilmenau Technical University: intervention (experimental) study on the (positive) influence of light on employees in three-shift systems with night shifts and in two-shift systems with early and late shifts in comparison to employees from other areas of the company such as administration without shift work. The study is intended to provide knowledge about the effects of using dynamic lighting systems in the workplace. This intervention will provide an important data basis for simple and innovative measures to improve health in the workplace for employers, employees and decision-makers in the field of health and safety at work. The final report will be published in spring 2024.

ZALUX is collaborating with the University of Zaragoza and the Instituto Tecnológico de Aragón (Itainnova) on 'Eco Design' luminaire design – based on ecological criteria and, primarily, research into sustainable plastics. For further research and development work, ZALUX is involved in an agricultural pilot project at the La Almunia School of Engineering, a faculty of the university. The project includes e.g. indoor cherry orchards. All of these projects and products are tested and supported in the laboratories at Alhama II.

STRATEGIC PARTNERSHIPS

Warema: 'Wellumic' is the result of our collaboration with the company Warema. The innovative light management system coordinates artificial lighting with the roller shutter system on windows to achieve optimum lighting conditions with minimum energy consumption. The control system allows optimum utilisation of the available daylight, and at the same time it prevents rooms (especially in summer) from heating up too much as a result of heat input from sunlight and having to be cooled in an energy-intensive manner. Practical tests and preliminary scientific trials were accompanied by the Fraunhofer Institute in Stuttgart.

VfL Wolfsburg: As the German market leader for technical lighting, TRILUX is a long-standing lighting partner of VfL Wolfsburg football club and part of its climate partner network. The contract was recently extended until 2025. We are successively converting the entire stadium to smart, energy-efficient lighting, which enables us to achieve low energy consumption, a long product service life and low maintenance requirements. In return, the Volkswagen Arena provides the perfect backdrop for us to experience innovative TRILUX lighting solutions live and in action – from Human Centric Lighting in the players' dressing rooms to dynamic light show goal celebrations in the VIP lounge.

Fiber Unlimited: A particular industry topic is efficient and secure data transmission in networked lighting systems, and not only for light management but also for WiFi, Bluetooth and camera networks. So-called plastic optical fibres (POF) are even superior to fibre optic cables in many respects: they are extremely flexible and robust and can be connected in seconds. Compared to classic UTP networks (star topology), POF solutions (daisy-chain topology) save around 90 % cable and 80 % hardware in the patch room. This reduces working times by up to 95 % and lowers overall costs by more than 70 %. This is why we have been working with Fiber Unlimited, the Dutch specialist for plastic fibre optic cables, since 2022.

Together, we have already developed a customised POF network module for the E-Line Next LED continuous line system, which can be used to flexibly implement light management and IIoT applications. The first client was the Dutch logistics specialist Nedcargo for the lighting refurbishment of its approximately 20,000 square metre logistics warehouse in Soesterberg. Nedcargo now expects energy savings of up to 35 % compared to the obsolete system.

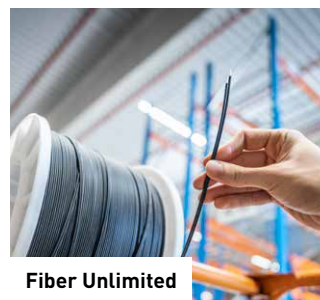
Monolicht: Since January 2022, the Swiss custom luminaire specialist Monolicht has been part of the TRILUX Group as an independent subsidiary. Valuable synergies come about through cooperation between the two companies. We look for the optimum solution for every customer, project and light point and, if necessary, bring in services from the entire Group, with extra requests included. Both companies benefit from excellent networks in the market. This means that the TRILUX Group is even better positioned for the booming special luminaire market.



Warema



VfL Wolfsburg



Fiber Unlimited



Monolicht

TOGETHER FOR CIRCULARITY

In the search for innovative solutions for smart, sustainable buildings, we work closely with partners from other trades. For example since the beginning of 2021 with Urban Beta – the Berlin start-up has developed its BetaPort (NEXT), a circular, timber-based space solution. Thanks to its modular design it can be flexibly scaled and used in a variety of ways, as an office for example or a mobility hub for expanding the charging infrastructure. Together with the renowned lighting design office JACK BE NIMBLE from Berlin we equipped the BetaPort with smart, energy-efficient, future-proof products and applications.





SYSTEMATIC IMPROVEMENT OF PRODUCTION PROCESSES

Energy-efficient products are one way of minimising carbon emissions as much as possible. The other way is climate-friendly manufacturing processes. We’re working on it.

As a manufacturer of intelligent lighting solutions, TRILUX can undoubtedly achieve the greatest impact towards climate and resource protection via its efficient and sustainable products. However, all processes in production, administration and transport must also become increasingly sustainable. TRILUX works systematically to minimise their impact on the environment and climate.

GRI 2-27

No violations and sanctions

The minimum standard for the TRILUX Group in terms of climate and environmental protection is the respective legal requirements at the locations. All relevant regulations are continuously monitored and compliance is checked through regular audits. These measures work reliably – no legal violations were registered Group-wide in 2021 and 2022, nor were any sanctions imposed on the TRILUX Group in the area of environmental protection.

	Occupational safety management	Environmental protection management	Energy management	Quality management
Germany	ISO 45001	ISO 14001	ISO 50001	ISO 9001

Tested product safety

The safety and health of customers is a top priority for TRILUX throughout the entire life cycle of its products. This ranges from design and development to procurement and production and includes the entire service life up to correct disposal and, ideally, recycling of the raw, auxiliary and operating materials used. We accompany the entire development process with a risk analysis (FMEA), analysing potential risks to product safety, and this assessment is updated regularly.

We carry out safety tests in our own test laboratory over and above legal requirements and specifications. However, products are also regularly tested for their impact on health and safety by independent third parties and accredited test centres. TRILUX products carry national and international safety markings.

PIONEERING WORK FOR SUSTAINABLE INFRASTRUCTURES

Investing in research means investing in the future, our own future and that of the lighting industry. This is why we are pioneers of the Madaster network.



Madaster is the global register for materials, buildings and infrastructure in the construction and property industry. The company name is based on a word mix of 'material' and 'cadastre'. The cloud platform provides insights into which components and materials can be found in which places of a building and what impact they have on the environment. The documentation of materials, components and products makes their value visible and thus their suitability for the circular economy at the end of the existing building's life.

Future-orientated collaboration

The more than 166 members (as of December 2023) make both a financial and a strategic contribution to the further development of the platform and to the design of a material passport (building resource passport) as a market standard. The goal is a circular construction industry. We networkers are convinced that the European Union's goal of reducing carbon emissions by at least 55 % by 2030 can only be achieved if all sectors work in a circular way. TRILUX is the only company involved from the lighting industry.

In Madaster, the Kennedys are creating a digital twin or digital copy of a building or other architectural object. This provides a clear overview of the components and materials used, their CO₂ content and their reusability – with a view to avoiding waste. In connection with the climate crisis, the shortage of raw materials and rising energy and disposal costs as well as construction prices, no one can afford to neglect the recyclable treasures in our towns and cities. If the system continues to establish itself, the participating partners of today will be the recycling companies of tomorrow.

TRILUX specifically contributes its expertise in lighting, smart building and lighting solutions for the circular economy in new buildings and refurbishment projects.

Why call them Kennedys?

The name refers to John F. Kennedy's visionary moon speech: in this 1962 speech in Houston, Texas, the US President wanted to convince the public of the benefits of the moon programme of the NASA space agency. A year and a half earlier, in May 1961, he had declared to the US Congress that the aim was to bring a man to the moon and back to earth safely by the end of the decade. The moon flight was politically and economically indispensable if the USA wanted to maintain a leading role in the world.

But the Apollo program faced enormous technical hurdles and costs. "We chose the moon as a target not because it was easy to reach, but precisely because it was difficult," Kennedy said. Less than seven years later the first lunar landing occurred with Apollo 11 in July 1969, and the television broadcast was watched by 600 million people worldwide.



CONSCIOUS PROCUREMENT PRACTICE

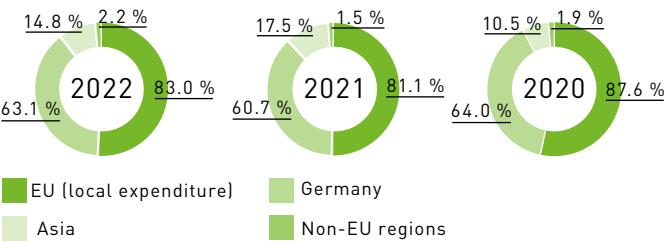
TRILUX is leading by example and is increasingly focusing on local production and material procurement. All parties benefit from this – we, the suppliers and the business locations.



GRI 204-1a

Disclosing the procurement expenditure of important operating sites is part of the reporting obligation. At TRILUX, the following applies for regions ReWe 2020, ReWe 2021 and ReWe 2022:

Procurement budgets for suppliers



This underlines that TRILUX spends the lion's share of its procurement budget of important operating sites on suppliers from Germany and the local EU region.

GRI 204-1-b

GRI 204-1-c

The geographical definition of 'local' for TRILUX refers to European locations, and the definition of 'important operating sites' means the locations Arnsberg, Cologne and Spain. These are central operating sites to which the percentage of the procurement budget spent on suppliers in the local region relates to.

GRI 414

Auditing of the supply chain

TRILUX is committed to the continuous improvement of environmental protection performance and the consistent avoidance of environmental pollution – and also influences suppliers and service providers to act in accordance with these principles.

TRILUX pursues sustainable supply chain management (SSCM) and the entire supply chain is integrated into the ISO 9001-certified quality management system. Strict guidelines are followed when selecting suppliers and an evaluation is carried out that takes into account both quality and sustainability criteria. In addition, we place the highest demands on the energy efficiency of our products and the reduction of GHG emissions during the use phase. The energy efficiency of components therefore also plays a central role in the selection of our suppliers in order to achieve our goals in the long term.

GRI 414-1

GRI 414-2

Only with certificate

In Asia, we favour suppliers who can present an external certificate for social criteria such as the Business Social Compliance Initiative (BSCI) or ISO 26000. This was 68.2 % in 2021, and in 2022 the figure improved to 71 %. The quota relates to the total purchasing volume in Asia.

GRI 408-1

No Child Labour

TRILUX complies with local law at its own operating sites. In preparation for the Supply Chain Due Diligence Act (LKSG), we had key suppliers from potential risk areas outside the EU audited by an external service provider for the first time in 2021, which we repeated in 2022. There were no anomalies or indications of child labour among these suppliers.

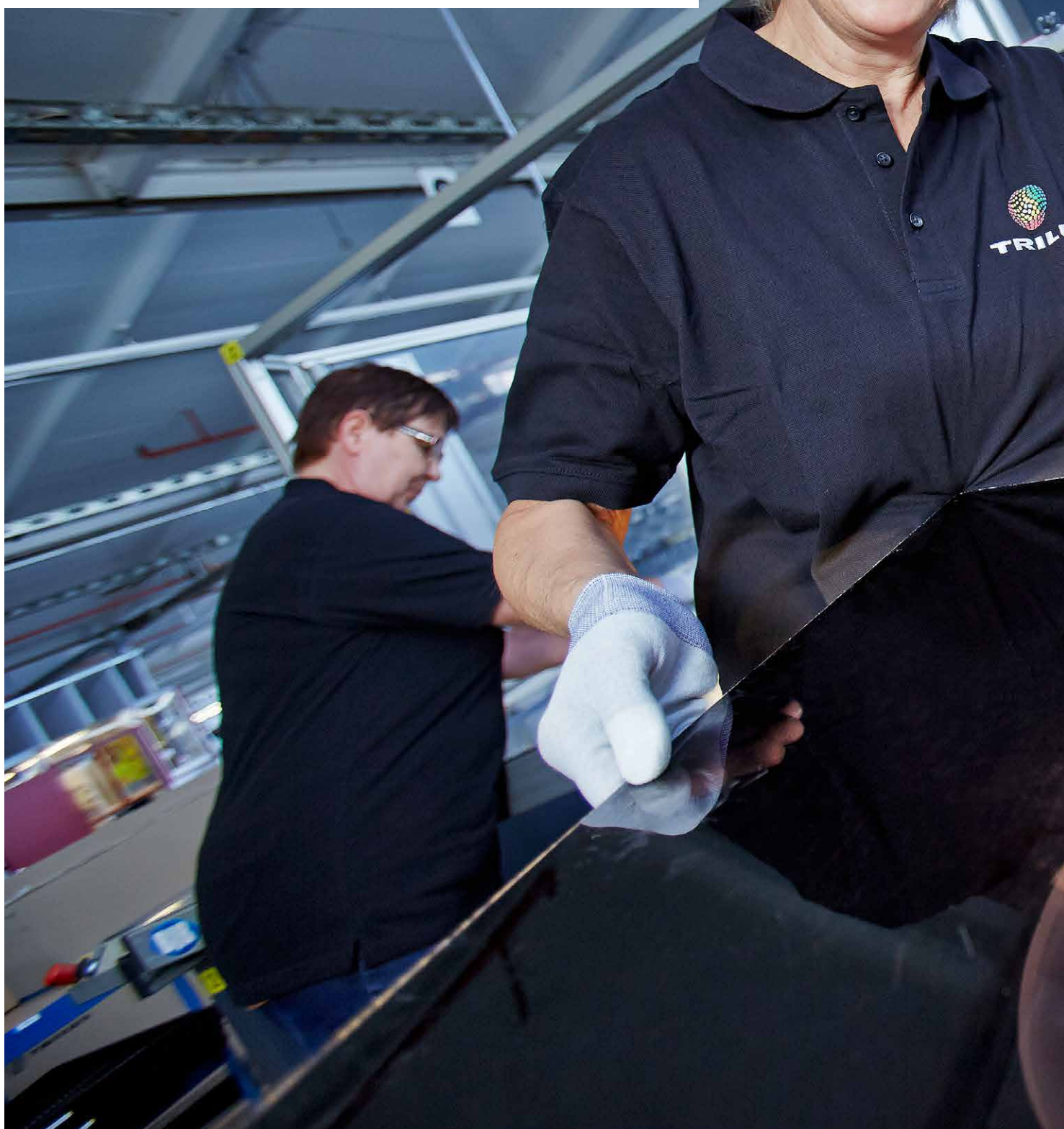
GRI 409

Forced or compulsory labour

In 2021, situational assessments were taken by an external service provider in preparation for the LKSG. For TRILUX they reviewed major suppliers from potential risk areas outside the EU for the first time. There were no abnormalities. Local law applies to our own operating sites and there have been no violations.

DIGNIFIED WORK AND ECONOMIC GROWTH

Intention: visualising a world in which all people can participate in economic prosperity and make their own contribution to it. Permanent, broad-based and sustainable economic growth should promote full and productive employment and decent working conditions for the global population.



FROM PEOPLE FOR PEOPLE

The 5,000-strong #TeamTRILUX makes our company what it is, each and every day. This is why we do our best to offer employees the best conditions and prospects. For us, this is just as natural as our sense of responsibility towards the society in which we live and work.



A holistic approach to sustainability means assuming ecological, economic and social responsibility. TRILUX therefore views the treating of all employees with respect as an essential criterion for sustainable action. Good working conditions, health and safety at work and respect for human rights are the basis for this.

Remuneration that is fair and non-discriminatory for all is important to us, and we also offer various voluntary benefits to promote employee satisfaction. Our commitment in this regard was officially recognised in November 2021 with certification as a 'Family-friendly company in the Hochsauerland district' by the Hochsauerland district business development agency and the Hellweg-Hochsauerland Women & Work Competence Centre.

INTERESTING FACTS ABOUT OUR WORKFORCE

TRILUX employs **AROUND 5,000 PEOPLE**.

1,262 OF THESE WORK IN ARNSBERG (2021: 1;167)



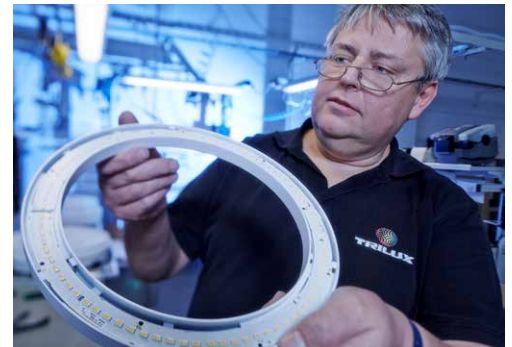
365 people (2021: 338) are female
and **897** (2021: 829) are male.



220 employees are **UNDER 30 YEARS OLD** (2021: 181).
499 are **BETWEEN 30 AND 50 YEARS OLD** (2021: 488)
and **543** (2021: 498) are **OVER 50 YEARS OLD**.

We employ **60 APPRENTICES**. In 2021 this was 32.

Of our **MANAGEMENT STAFF**, 4 (2021: 2)
employees are **UNDER 30 YEARS OLD**,
88 (2021: 92) are **BETWEEN 30 AND 50**
and **90** (2021: 83) are **OVER 50**.



16.6 YEARS – the average
LENGTH OF EMPLOYMENT
in Arnsberg.



The average
age is **46.96** years
old. 2021: **46.91**
years old.

We employ **182** (2021: 177) managers.
Of these, **157** are male (2021: 155) and
25 (2021: 22) are female. This results in a pro-
portion of women of **13.74 %** (2021: 12.43 %).



	COLOGNE		ARNSBERG	
	2022 (in %)	2021 (in %)	2022 (in %)	2021 (in %)
Women in management positions	23.50	20.93	10.00	9.70
Men in management positions	76.50	79.07	90.00	90.30
Of these, under 30	2.00	0	2.30	1.49
Of these, 30 - 50 years old	54.90	55.81	45.80	50.75
Of these, over 50 years old	43.10	44.19	51.90	47.76
Apprentices	3.82 (2.29 male, 1.53 female)	4.20 (2.52 male, 1.68 female)	4.86	2.58
Total under 30 years old	19.85	15.9	17.15	15.46
Total 30-50 years old	54.96	57.98	37.75	39.98
Total over 50 years old	25.19	26.05	45.09	44.56

SOCIAL EMPLOYMENT POLICY

GRI 2-30

For TRILUX, fair working conditions and fair pay for all employees are highly important. We guarantee each and every person compliance with the site-specific minimum wage requirements and thus the payment of a living wage. Our standard starting salaries are always above the statutory minimum wage (in the respective country), regardless of gender and according to job description, and we pay significantly above the collectively agreed rates for temporary and agency workers. Please add sentence: In addition to our efforts, we plan to conduct a living wage benchmark analysis for 100% of our workforce by 2027.

GRI 2-30

- The **Arnsberg site** accords to the collective labour agreement of the metal and electrical industry in North Rhine-Westphalia. We also have our own collective labour agreement for the future: extensive works agreements were drawn up and adopted together with employee representatives for the workforce. The training quota was also once again increased. Three qualification days per year were also agreed for each employee to ensure further training, and if the need exists, additional training programmes can also be taken. Complete the sentence: Further key figures on ethics, employees and working conditions can be found in the annual report of TRILUX GMBH & Co. KG Arnsberg in the appendix.

402-2

- Collective labour agreements also apply to **ZALUX in Spain**. Part-time employees receive the same company benefits as full-time employees on a pro rata basis in relation to work hours. In the production and logistics areas, leased employees are deployed to cover order peaks and to compensate for holiday-related absences with transport, picking and assembly work as well as with operating plant – we have been working with regional personnel service providers for many years for this purpose.
- **Leasing employees** receive industry-specific extra pay in accordance with the collectively agreed benefits of the IGZ and BAP associations. They also receive TRILUX bonuses and performance bonuses above the tariff-based pay scale.

202-2

- **At many locations** TRILUX provides voluntary benefits that go beyond statutory requirements. For example, ZALUX employees can take advantage of special health and pension insurance benefits.

**100 % OF EMPLOYEES AT TOP MANAGEMENT LEVEL
(MANAGING DIRECTORS OF THE COMPANIES) COME FROM
THE COUNTRIES IN WHICH THEIR COMPANIES ARE BASED.**

DIVERSITY AND EQUAL OPPORTUNITIES

For TRILUX, fair and respectful cooperation is an irrefutable value within the corporate culture. This principle includes ensuring that no one is discriminated against on the grounds of gender or sexual identity, origin, religion or belief, disability or age. In this respect, the provisions of the General Equal Opportunities Act form the basis for our responsibility in our dealings with employees. We also share our commitment as a signatory to the Diversity Charter and the United Nations Global Compact.

An increasingly international population as a result of advancing globalisation and migration, demographic change and a shortage of skilled workers mean that a diverse and inclusive workforce is no longer just a question of ethics, but also of a company's future viability. Diversity brings with it strategic and economic advantages.

This is why TRILUX is moving away from traditional personnel structures, proactively addressing new target groups, opening up to career changers and establishing a management culture that sees the individuality of employees as potential.

We see diversity as internationality because our products are used all over the world. TRILUX has a global presence with companies, branches and sales partners in 58 countries, and is also home to immense cultural diversity.



31 NATIONALITIES AND 20 LANGUAGES AT THE ARNSBERG SITE ALONE. GLOBALLY THIS IS MORE THAN 30 LANGUAGES.

203-2

In order to ensure smooth and loss-free communication, an unbiased dialogue based on partnership is essential. TRILUX attaches high importance to the practised responsibility of creating a non-discriminatory culture of cooperation, especially in view of the great influence we have as the largest regional employer at several locations.

However, preventing discrimination and creating equal opportunities is not enough for us. TRILUX sees diversity as a benefit for all stakeholders and therefore does its best to promote it, and inclusion is a matter of essential importance to us. We employ people with physical or mental disabilities in areas such as assembling accessories, and cooperate with Caritas, Germany's largest welfare organisation.

We have already implemented individual measures in terms of diversity management. One example of this is changes in the recruiting process. Here, all job adverts are naturally formulated in such a way that they also appeal to the third gender. In the case of equal qualifications or requirements, preference is given to women when filling vacancies in areas with a low ratio of women.

405-1

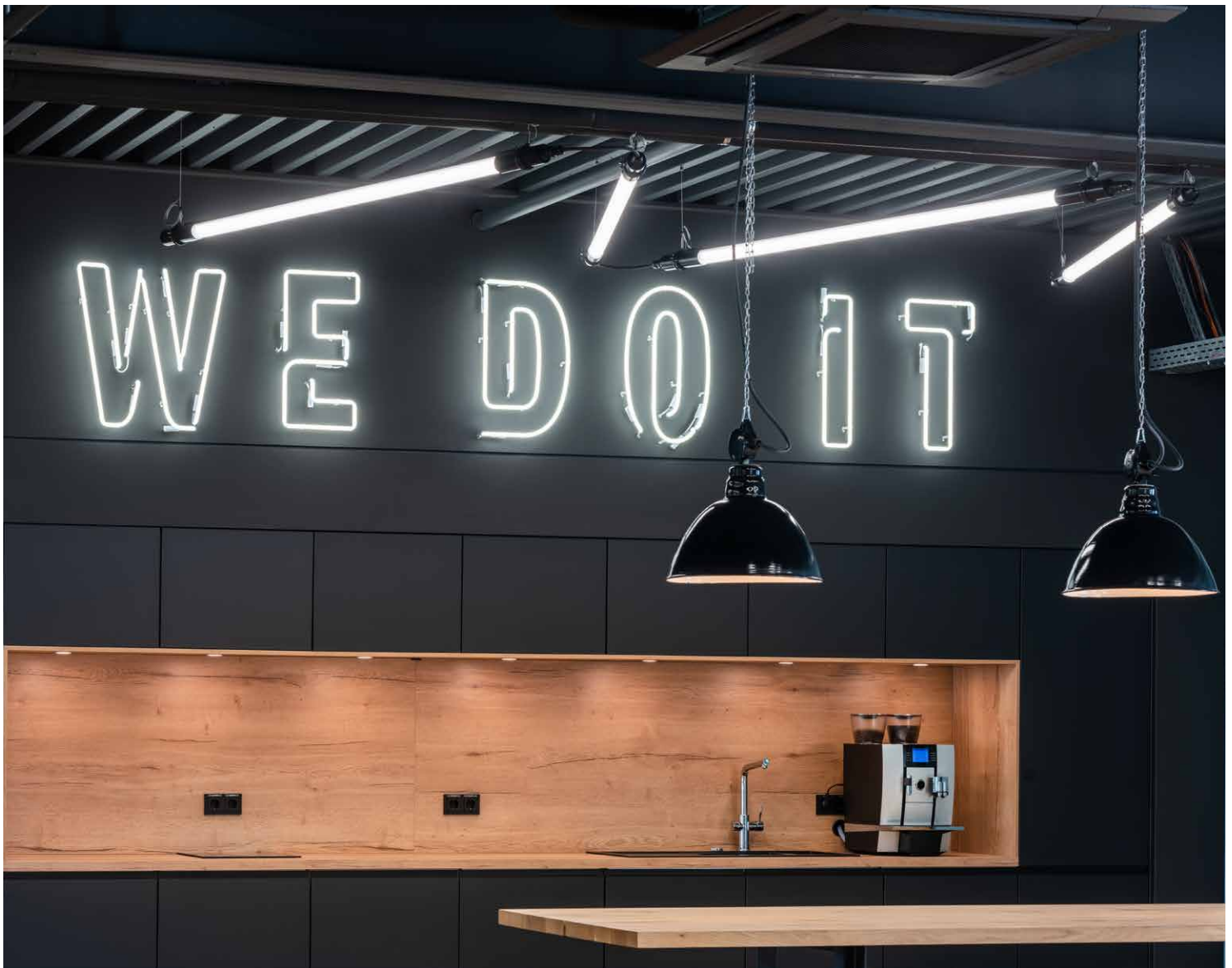
Women form the majority of our personnel development groups (see info box). Women are not yet represented at the top management level, i.e. the Group's Executive Board.



OUR TALENT PROGRAMME The aim of our Human Resources Development Group is to identify committed and motivated employees who, in a process running over two years, will develop their skills. The internal talent management programme attaches particular importance to personal development, self-determining the employee's site of work and career planning. The current Development Group focuses on the circular economy.

Over the 24 months, participants can expect a comprehensive range of interdisciplinary training courses and workshops, intensive individual coaching and strategically relevant projects that are worked on in a cross-divisional and interdisciplinary way. Along the way, we always take time for reflection and feedback discussions.





THE LIGHTING SPECIALISTS OF TOMORROW

For TRILUX, assuming social responsibility has always meant training young people. 60 young people are currently employed in Cologne and Arnsberg, and our educational programme continues to grow.

TRILUX is committed to sustainably securing the next generation of skilled workers in the Hellweg-Sauerland region of Germany, and has been awarded the 'Recognised Training Company' certificate by the Arnsberg IHK (Chamber of Industry and Commerce). Almost every pupil can find a suitable apprenticeship with us, depending on their level of education and school-leaving qualifications. Whether in the commercial, technical/industrial or information technology sector, we provide young people with vocational training in 13 different apprenticeships and dual study programmes, from production to IT. Children of employees are given preferential treatment.

Our own technical training centre imparts a broad range of state-of-the-art technical knowledge. Digitalisation and the Internet of Things have drastically changed some traditional task areas and new job profiles have emerged. This is why we have significantly expanded our range of IT courses and offer new courses in areas such as production technology. eRoc, our electronic robotics centre, also helps apprentices to gain own experience with new technologies such as robotics or e.g. using a 3D printer. They should then share this digital knowledge with other employees.



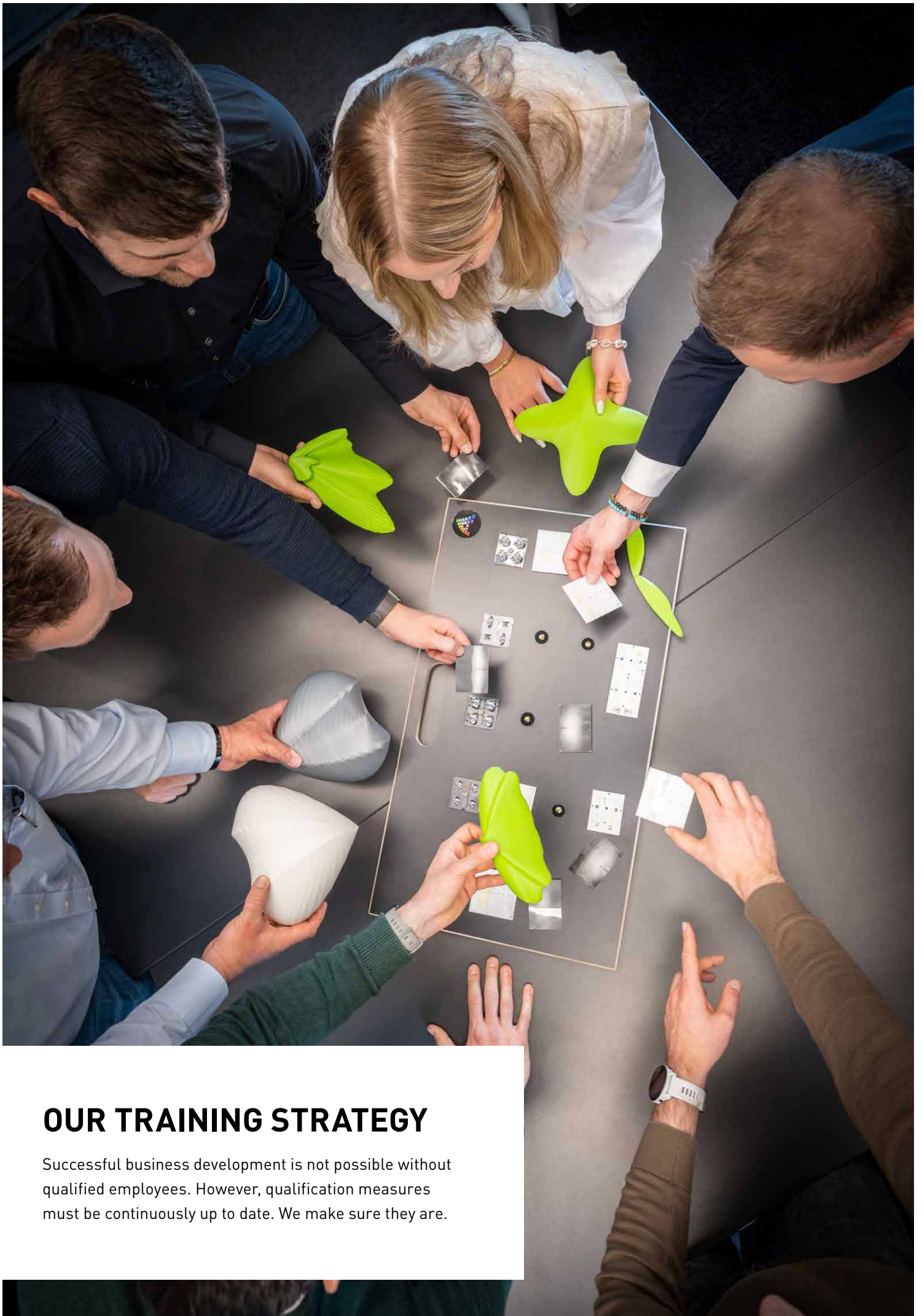
We also offer the **TRILUX next generation** the opportunity to gain experience abroad. Many joint events, trainee trips, interdisciplinary projects and special assignments make the training both educational and varied.

A special project is our ‘**junior company**’, in which all business processes are managed exclusively and on their own by apprentices: they develop, produce and market own products and get to know all TRILUX divisions in every-day work practice.

Young specialists and managers at TRILUX receive **special practical support** in personnel development groups.

For the TRILUX family of tomorrow – our training possibilities

TECHNICAL/TRADE	COMMERCIAL
Electronics technician for operating technology	Industrial clerk
Mechatronics engineer	E-commerce trader
Industrial mechanic	Wholesale and foreign trade management clerk
Toolmaker	Warehouse logistics specialist
Process mechanic for plastics and rubber technology	IT specialist for system integration
Stamping and forming mechanic	IT specialist for application development
Technical product designer	Bachelor of Science – Business Informatics
Production technologist	Bachelor of Science – Software and Systems Engineering
Bachelor of Engineering – Mechatronics	Bachelor of Arts – Business Administration
	Student trainee in e.g. sustainability



OUR TRAINING STRATEGY

Successful business development is not possible without qualified employees. However, qualification measures must be continuously up to date. We make sure they are.

The lighting industry is currently undergoing profound technological and structural change. As a result, the need for up-to-date expertise and new skills is constantly adapting. TRILUX invests intensively here in training and further education as well as in the continuous personal development of all employees.

As key qualifications, our training strategy identifies change competence, methods and tools for project management and mastery of digital technologies. The aim is to empower employees at all hierarchical levels not only to master technological and social change, but to help shape it.

**AN AVERAGE OF 33 HOURS
SPENT BY TRILUX EMPLOYEES
ON TRAINING AND FURTHER EDUCATION IN 2022.**

TRILUX offers employees various feedback and dialogue opportunities **with the aim of achieving high employee satisfaction**. Individual, employee-friendly models for deferred compensation, parental leave, care or part-time work are also available. According to the company agreement (and by arrangement), this also includes working from home and mobile working.

404-1 GRI 404-2

IN-HOUSE ACADEMY

The company’s central training centre is the TRILUX Akademie, providing knowledge transfer without limits.

More than **240,000 participants** have attended the 160 or so events each year since the Akademie was founded in 2011.



60 % of events are offered in digital format, with the trend rising. To this end, the Akademie operates a 200 square metre multimedia studio with film, photo and sound facilities.

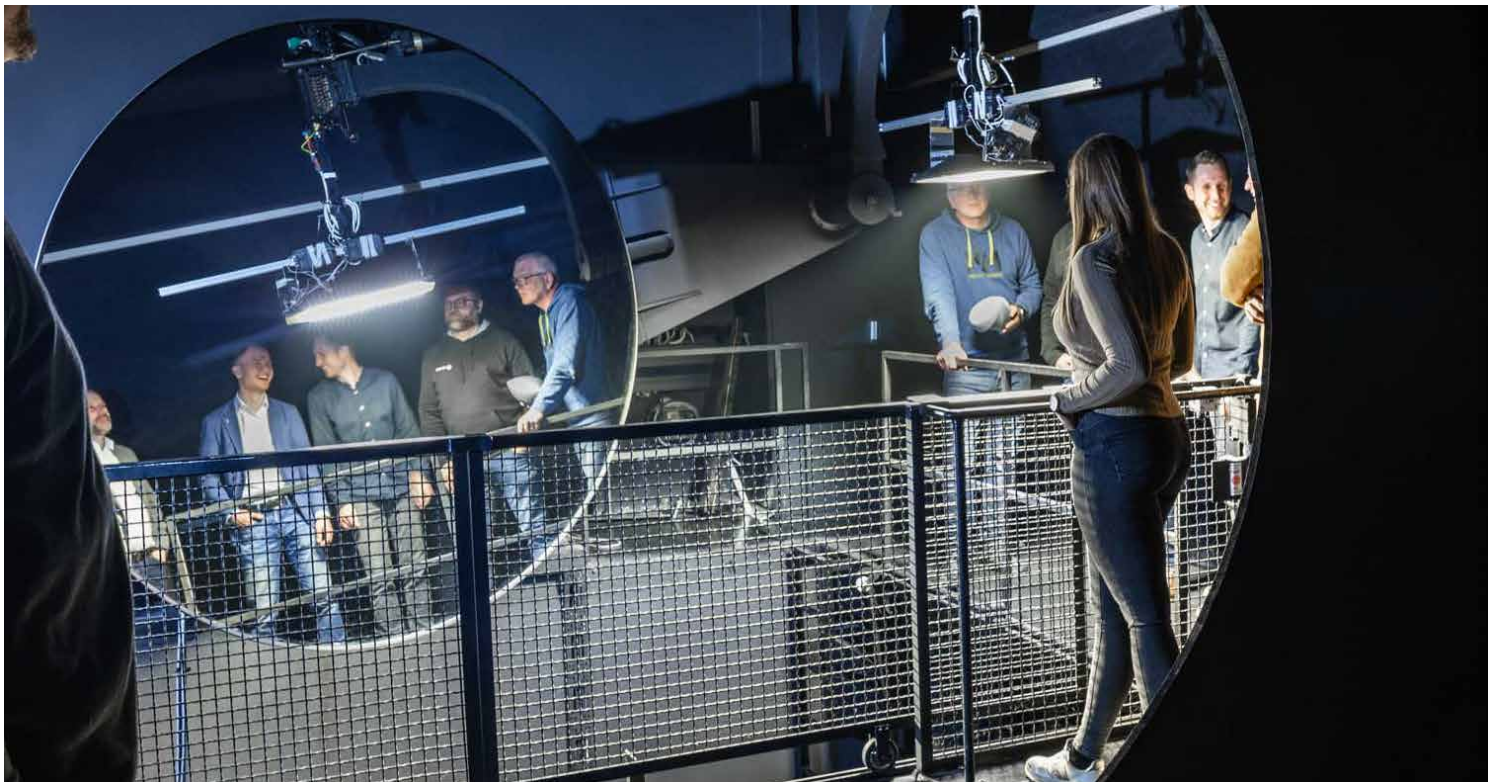


20,356 employees (2021: 15,393) took advantage of the offer digitally and **6,492 learners** (2021: 2,222) in classroom format. This represents an overall **increase of 52 %**.



The **approximately 60 instructors** who support the full-time lecturers are from the TRILUX Group’s internal network. They combine their specialised knowledge with the highest didactic standards. They are also supported by high-calibre contract lecturers.





THE TRILUX EMPLOYEES' INTERNAL TRAINING COURSES OFFER MORE THAN 1,000 OPTIONS FOR PERSONAL AND PROFESSIONAL DEVELOPMENT.

Internal training courses

Topics are offered such as product knowledge, IT systems, leadership skills, sustainability, project management, change management and foreign languages. With its seminars, lectures, conferences and online courses, the Akademie also addresses all other participants in the market – because only in a highly qualified market environment can we, as a high-tech company, remain fit for the future.

- The top 5 internal training topics were 1. training for production employees, 2. product training/launches, 3. language training, 4. leadership programme, 5. soft skills seminars.
- One focus was on qualifying the sales organisation. Ranging from the digital annual kick-off to various product training sessions and pricing topics, knowledge and skills were imparted and practised.

403-4

TRILUX Ideas Management (TIM) is an important component of the learning organisation. With this programme, the company fosters and encourages the commitment and motivation of employees throughout the Group and actively involves them in improving their working environment. In 2022, 326 ideas were submitted. 113 of these have been implemented to date with more to follow, and we have been able to save more than 93,000 euros by implementing these creative suggestions. TIM received 45 ideas on the topic of 'environmental protection' and 38 ideas on 'saving energy'.

The Ideas Management structure thus makes an important contribution to increasing the competitiveness of the TRILUX Group. TIM is an example of the leadership and values culture practised at TRILUX and demonstrates the strong commitment of colleagues to the company.

TRAINING AND INFORMATION PROGRAMMES FOR CUSTOMERS

We impart cutting-edge lighting technology expertise, ranging from electrotechnical principles and new technologies to country-specific specifics, e.g. normative lighting design and subsidy programmes. Our external range of courses is aimed in particular at lighting designers, electrical planners, architects, electrical contractors and all who work professionally with light. It covers a broad spectrum, from the basics for career starters to highly specialised knowledge for seasoned experts.

Our alternative trade fair concept ‘Living Contrasts’, launched in April 2022, was supported with various short presentations on ‘lamp bans and refurbishment’ and ‘quality of light’. The lectures at the Akademie received excellent feedback.

The tried-and-tested digital formats ‘Lighting Designer Update 2022’ and ‘E-Tradesman Update 2022’ were also offered, and the in-person Lighting Designer Updates were very well received. A total of **5,650 external participants** used our range of courses in 2022, with around a third of these from abroad.

In addition to the year-round basic course range, the TRILUX Akademie also develops individual qualification concepts, for example for municipal utilities and building construction offices. There are also special certificate courses where the knowledge acquired is tested by neutral, independent bodies such as the Chamber of Industry and Commerce. The further training programme is certified by ISO 9001 and AZAV (Accreditation and Licensing Ordinance for Employment Promotion), by accreditation as a cooperation partner of DIN CERTCO and by a listing with the DGUV (German Social Accident Insurance) as a training centre for the training of lighting experts in accordance with principle 315-201. As a founding member of the Working Group of Light Academies (ALA), we also work specifically to ensure the quality of further training in lighting and illumination in the market.

In view of constantly rising energy costs and current lamp bans and the associated need for qualified training in the assessment, optimisation and refurbishment of lighting systems, we have once again expanded our range of training courses: the new three-day European Lighting Expert practical course is aimed at beginners and is ALA-certified.

404-2

Good individual training, however, is only one aspect of this sustainability goal. Another is educating people for sustainable development, because through education, people see that actions have consequences – not only for them and their environment but also for others. They can contribute to making the world a better place. This way of thinking is urgently needed to initiate change and solve pressing global problems so that future generations can also live well.



HEALTH – OUR MOST PRECIOUS ASSET

TRILUX makes no compromises concerning safety and protection in the workplace – this issue always has top priority.

The highest standards of occupational health and safety apply at the German sites and all international subsidiaries are obliged to strictly comply with country-specific legal and official regulations. Occupational health and safety management is deeply embedded in all structures and processes. In addition to the mandatory requirements, there is a framework for action that ensures systematic prevention.

High standards and comprehensive packages of measures are in place at our operating facilities to prevent accidents at work and to eliminate health risks. TRILUX has also committed itself to the global 'Vision Zero'. This is a preventative approach to safety, health and well-being and is based on the conviction that all accidents, injuries and work-related illnesses are preventable. Targeted measures are intended to further minimise (accident) risks in the workplace and the risk of occupational illnesses.



WELL EQUIPPED FOR EMERGENCIES

In Arnsberg, TRILUX has an 18-strong company fire brigade with its own fire engine. Their task is to protect the production site and the surrounding area and to support the public fire brigade. The team includes employees from almost all areas of the company, from production to administration.

Our fire brigade is equipped with the web-based GroupAlarm platform, a powerful software for alerting the emergency services. In addition, TRILUX temporarily releases colleagues who are active in the local fire brigade or technical relief organisation.

The company fire brigade is also involved in training fire protection and evacuation assistants, and the number of these is currently well above legal requirements: 281 first aiders, 81 fire safety assistants and 93 evacuation assistants (in 2022).

Almost the entire factory premises in Arnsberg-Hüsten has a sprinkler system.



Certified occupational health and safety management system

Prevention is most effective when organised and implemented according to systematic methods. TRILUX has thus introduced integrated management systems (IMS) for occupational health and safety (in accordance with BS OHSAS 18001) and environmental protection (in accordance with ISO 14001) for all operating sites in Arnsberg, Zaragoza and Alhama de Aragón in Spain, as well as, at Arnsberg, energy management (in accordance with ISO 50001). Establishing this voluntary system began in 2010.

In the first quarter of 2021, TRILUX changed from OHSAS 18001 to the international ISO 45001 standard. This switchover demonstrates the intention to continuously improve the management system for health and safety at the workplace. All employees were reached with the IMS during the reporting period.

GRI 403-5

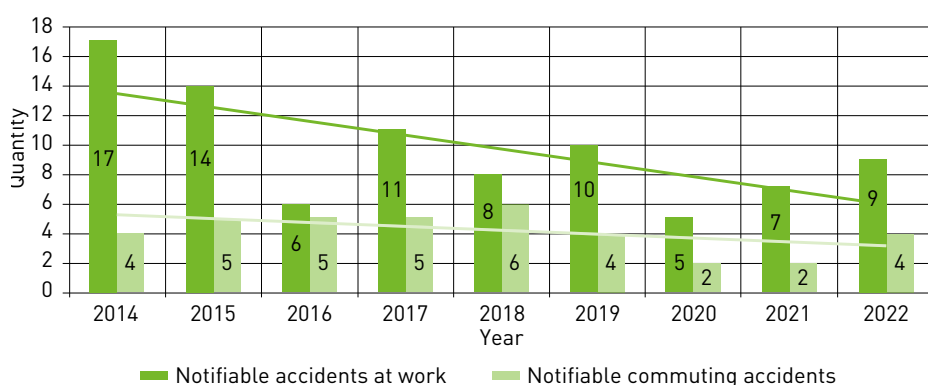
Better and better

For TRILUX GmbH & Co. KG and TRILUX Group Management GmbH, the occupational health and safety management system has been certified by BG ETEM – the Employer's Liability Insurance Association for Energy Textile and Electrical Media Products – since 2012. Regular recertifications confirm the effectiveness and further development in operational practice. As do the occupational safety specialists, the staff commissioned for this report directly to the executive management of the respective companies. All managers are obliged to contribute to the positive development of these issues.

The success of this strategy is confirmed by the long-term decline in the number of reportable accidents at work (see chart below). The reporting obligation applies if the accident causes incapacity to work for more than three days in addition to the day of the accident.

Notifiable events

A commuting accident or accident at work must be reported if it causes a period of absence of more than three days (the day of the accident does not count).





Analysis of hazards

In 2021, TRILUX again took various measures to recognise work-related hazards and assess risks. In a detailed analysis, all workplaces within the organisation were reviewed for potential risks in order to introduce suitable control measures. The risk assessment also included evaluation of mental stress in the workplace.

Regular inspections and audits were carried out by the Health, Safety and Environment (HSEN) team and the company doctor to ensure that workplaces met the applicable safety standards. In addition, safety briefings are held at least once a year and whenever someone starts new employment.



Accident prevention everywhere

Regular training and instruction on occupational health and safety are also a matter of course at our international locations, and additional accident prevention concepts are in place and are continuously adapted.

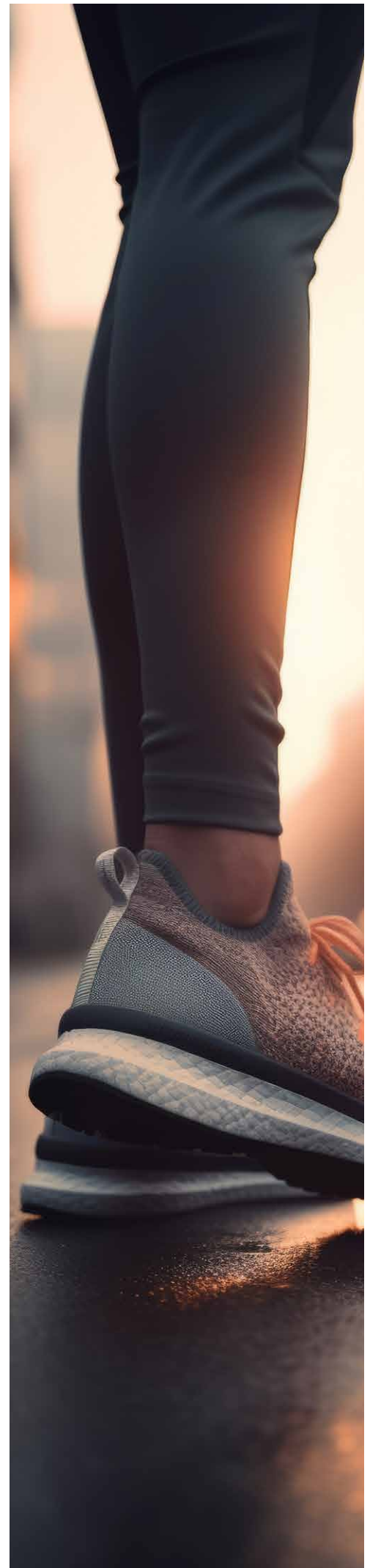
At the same time, TRILUX implemented a procedure for investigating work-related incidents. This is used to identify hazards and assess them in connection with the incidents. The aim is to determine remedial measures and define necessary improvements for the management system.

GRI 403-4



Involving employees

We set up employer-employee committees for health and safety at work (ASA) to sensitise the workforce to the issue and actively involve them. The ASA meetings serve to draw up and implement suitable measures to identify hazards, assess risks and carry out appropriate controls. Participants also discuss accidents, the latest developments in occupational health and safety, the promotion of health in the workplace and the concerns of the company doctor and works council.





Training courses for the workforce

Employees in administration and all those working on computers receive detailed training on 'health and safety in the workplace'. This is conducted annually and usually via our e-learning programme, which ends with a mandatory test. Its results are documented and communicated via the Akademie. All employees in production receive training from their managers, also at least once annually. Forklift drivers also receive centralised training.

The theoretical knowledge of our first aiders and fire safety and evacuation assistants is also continuously updated and expanded, and frequently supplemented with practical exercises. Our Akademie also offers further training on various related topics, with everything during work hours.



Active health promotion

We are constantly working to minimise employee stress and strengthen their personal resources. The basis for this is provided by working conditions that support the physical and mental well-being of employees. To maintain the performance of all employees, TRILUX offers, among other benefits, health promotion, compatibility of family and work, age-appropriate work organisation and various regulations for appreciative and respectful cooperation with the aim of a pleasant working atmosphere.



Voluntary services and programmes

Our health promotion and preservation programme consists of heat therapy, blood pressure measurement with card index, blood sugar measurement, skin screening, orthopaedic foot consultation, participation in the City Run (paid entry fee and jersey), 'Next Generation' health day for apprentices in the first training year, glasses service (private spectacles at TRILUX conditions), in-house flu and corona vaccinations and a corona test station.

Employees are supported not only in their health-promoting behaviour during work hours but in all areas of their lives, and this is why TRILUX also offers training sessions on ergonomic workplace design, stress management and healthy nutrition.



Benefits and provision

TRILUX offers employees in Arnsberg and all employees from leasing companies the 'vitaLUX' health programme all year round, which includes preventive examinations such as skin and vein screening and flu vaccinations, as well as encouragement to do sports and courses on autogenic training and resilience. The programme also includes the topic of social provision with information events, a pension lawyer and pension counselling. 'vitaLUX' has also been organising employee participation in the Neheim City Run for several years.

Employees of Zalux S.A. in Zaragoza can take advantage of an agreement with the major health insurance company DKV medical in addition to benefits provided by the Spanish healthcare system. This offers them additional private insurance benefits. Zalux has also made an agreement with ASPY (External Occupational Health and Safety Service) relating to cost reductions for medical services for employees and voluntary health promotion services.



Good medical care

The company medical centre Westfalen-Mitte e.V. provides company medical care for TRILUX employees as specified by the Occupational Safety Act. The company doctor permanently assigned to TRILUX visits the company regularly and has an own separate examination room. Company medical care for leased employees is provided by their respective companies. To this end, every employee leasing contract concluded by TRILUX contains an occupational health and safety clause in which the hirers confirm that they provide occupational health care.

Employees at the Cologne location can receive the above-mentioned benefits in Arnsberg. They are also welcome to use the company health management programme and the health days organised by our subsidiary Oktalite Lichttechnik GmbH. Occupational health care is also provided at this location by BAD GmbH.

GRI 403-3

Although we are not obliged to do so, we operate a first-aid centre in Arnsberg that is open to all employees and leased workers as well as contractors and service providers. In addition to first aid for injuries, the first aid centre also offers medical services.

TRILUX employs a social worker whom employees can consult if they have social problems or other stressful situations. The social worker has an own room on the company premises, but, if requested, also meets with clients outside the company to advise or support them.

GRI 407-1

GRI 408-1

GRI 409-1



The right to freedom of assembly and collective bargaining

Integrity and compliance with regulations are integral components of all processes and actions at TRILUX. This applies to all locations both within and outside the EU.

Conduct that conforms to laws, guidelines, recognised standards and voluntary commitments in all business activities is the basis for the trust of all stakeholders in the TRILUX Group. It is also a prerequisite for avoiding legal consequences, fines and damage to reputation.

In the past two years there have been no violations of employees' rights to exercise their freedom of association or to conduct collective bargaining. Therefore, no measures had to be taken to support this right.



ATTRACTIVE OPPORTUNITIES FOR EMPLOYEES

TRILUX has always been committed to long-term corporate development – we want to retain our employees in the long term by continuously investing in them.



Try-out programme

All employees in the TRILUX Group at the Arnsberg site are entitled to an annual 'try-out day' in the company, and the time and place are agreed upon between the supervisors and employees. This is anchored in the company agreement. Participants can thus familiarise themselves with other work areas and work content and try things out for themselves, for example to support their personal career planning. At the same time, an understanding of colleagues' tasks is improved. Another benefit is that processes and interrelationships between the individual areas are revealed and promote joint thinking and mutual understanding. Nine try-out days were held in 2021 and 14 in 2022.

Corporate benefits

All employees receive a wide range of shopping benefits in online shops via the Corporate Benefits website, and coffee, filtered and sparkling table water are available free of charge in the NewWork area in Cologne.

Retirement provision

From the seventh month of employment, TRILUX makes a monthly employer contribution to the pension scheme for full-time employees and apprentices. Part-time employees receive a pro rata benefit in accordance with their working hours. The payment can be used for a 'Riester' pension or for direct insurance with Volksbank Sauerland Versicherungen GmbH.

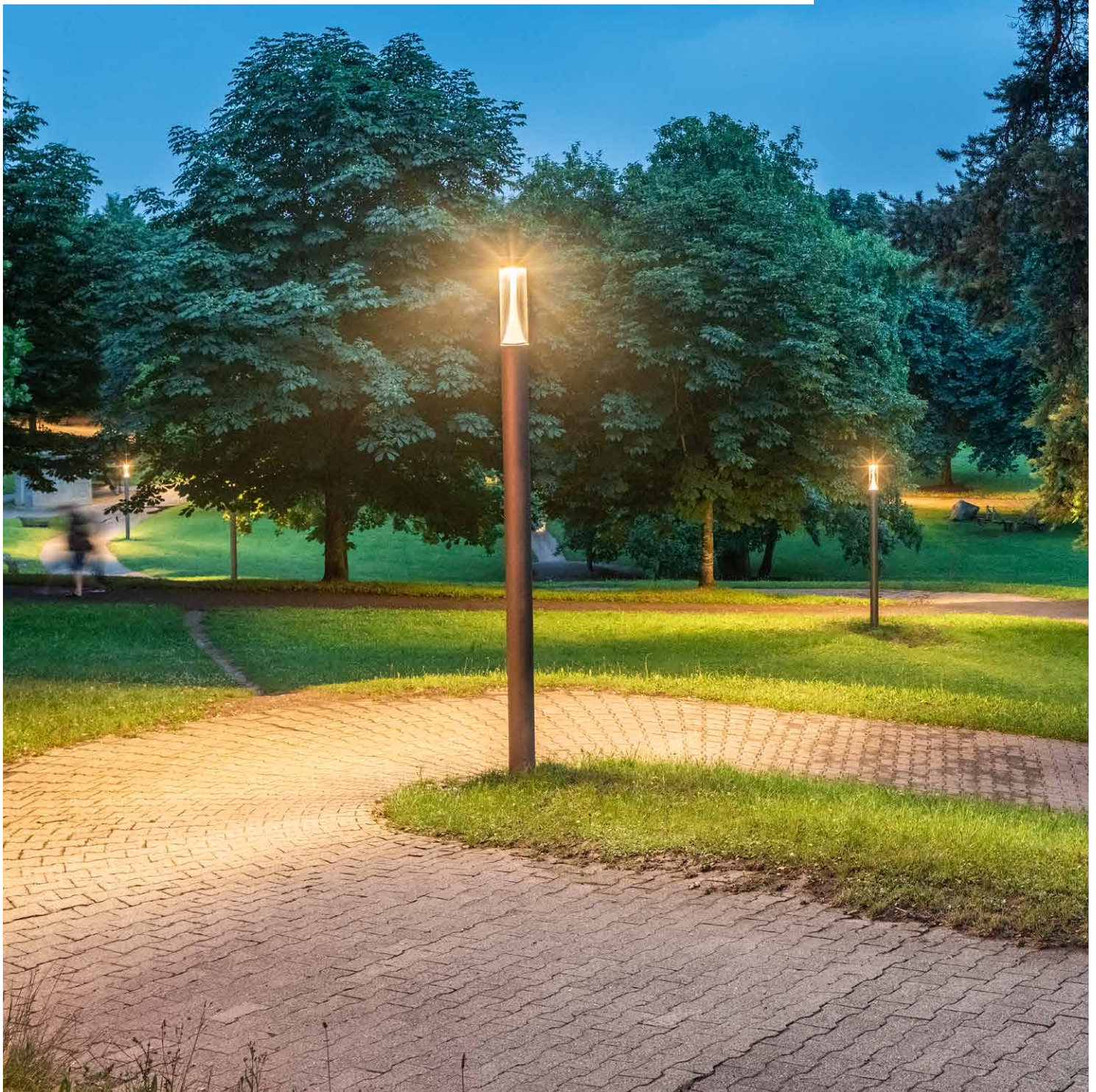
FURTHER BENEFITS

- 30 days holiday, special leave
- Christmas and holiday bonus
- Flexible and mobile work time models
- Job ticket, employee car park and charging station for electric cars
- Discounts for purchasing a bike
- Company restaurant with meal subsidy
- Company health management incl. gym discount
- Christmas parties, team events and family days
- Ergonomic desks and chairs for office work



SUSTAINABLE CITIES AND COMMUNITIES

Intention: cities and residential areas should be inclusive, safe and resource-efficient. It is estimated that more than 66 % of the world's population will be living in cities by 2030, and these are currently responsible for 75 % of all CO₂ emissions and consume 60 to 80 % of generated energy. In the future, cities must offer affordable housing and affordable, efficient public transport, and clean air, a stable supply of drinking water, waste management and protection against hazardous weather are also important.



OUR RESPONSIBILITY FOR SOCIETY

As a mid-sized, independent, regionally rooted family business, TRILUX plays a key role in shaping the transformation towards a resource-efficient economy and society in many different ways.



TRILUX, since its founding, has considered itself responsible for its employees, customers and society. Our decades of continuously high investment in research and development secure our economic future, that of our employees and that of our suppliers and partners. We make our contribution to the lighting industry through intensive committee, public relations and association work (Lighting Europe and ZVEI sustainability working groups).

TRILUX is also socially committed far beyond its own company boundaries, and we assume social responsibility in all the regions in which we operate. Our charitable commitment is characterised by permanent support for regional social and cultural projects.

GRI 413

Regionally rooted

This is of particular importance in Arnsberg and in Alhama de Aragón, Spain, where TRILUX is the largest local employer, and we involve ourselves in many municipal projects to ensure the sustainable and future-proof development of communities. For example, we sponsor the 'Pro Career Guidance' (ProBe) project initiated by the Arnsberg Civic Foundation in 2008 which systematically prepares young people at secondary modern and special schools for a successful start to their careers.

Sauerland as a lighting region

We are well networked and active in numerous initiatives to create a platform of dialogue for lighting expertise, to get people in the region enthusiastic about light and to be a driving force for securing the future of the lighting industry in South and North Rhine-Westphalia.

DONATION FOR THEORY AND PRACTICE

As a traditional company from the Sauerland region of Germany, commitment to the region is a self-evident part of our corporate culture. In 2022, TRILUX donated to the 'Sauerland Schools Research Network' school project.

Lake Sorpe near Arnsberg offers ideal conditions for aquatic ecology studies. This is why the German Youth Hostel Association of the state association of Westfalen-Lippe, along with the Arnsberg district region, set up the Sorpe eco-station equipped with laboratory and seminar room at the reservoir 21 years ago. The 'Sauerland Schools Research Network', founded in 2019, also uses it for experiments, for example analysing how different wavelengths of light influence the escape reactions of plankton crustaceans.

We have also financed a PAM fluorometer. PAM stands for Pulse Amplitude Modulation and allows the photosynthesis of algae in standing water to be analysed. The device determines the effects of stress factors such as heat and environmental pollution.



Local investments

Interest-free loans help employees to purchase or renovate property in the region. Our Lenze company fund helps financially if necessary.

Academic support for young talent

The Wilhelm Lenze Foundation for the Promotion of Gifted Students, named after the TRILUX founder, awards scholarships to finance university studies for young people from needy families.

FOR THE CITIES OF THE FUTURE

In an age of urbanisation, population explosion, immense technological progress and increasing ecological challenges, towns and cities around the world are faced with the question of how sustainable living spaces should be. TRILUX has been working on this for a long time.



The quality of life and sustainability of towns and cities depend on the balance between technology and nature conservation, and this is all about reducing emissions, conserving resources and utilising these more efficiently.

Outdoor lighting in this respect is an essential prerequisite for economic value creation in our 24/7 society. After all, artificial light is the basis for value creation in industry, trade, agriculture and commerce, even after dark. Illuminated routes for traffic are just as indispensable – these influence almost all areas of life because they are often a precondition for access to education, healthcare, culture and sport. Furthermore, outdoor lighting effectively reduces the risk of accidents, can counteract vandalism and enhance people's subjective sense of safety and security, and therefore contributes to people's health and well-being and prevents material damage.

Sophisticated outdoor lighting solutions

TRILUX offers an extensive portfolio of LED luminaires and lighting control technology to realise sustainable lighting solutions in outdoor areas. In the area of public streetlighting alone these can achieve energy savings of up to 80 % compared to obsolete systems.

This offers enormous opportunities for climate and resource protection: if all municipalities in Germany were to convert their approximately nine million road luminaires to LED technology they could save around 2.2 billion kilowatt hours per year, as calculated by the German Energy Agency in 2016.* This would avoid 1.3 million tonnes of CO₂ emissions.

1.3 MILLION TONNES OF CARBON EMISSIONS COULD BE AVOIDED IF GERMAN MUNICIPALITIES UPGRADED THEIR STREETLIGHTING TO LED TECHNOLOGY.

Various ways exist to achieve energy efficiency and thus CO₂ efficiency with outdoor lighting, and LED lighting technology can make an important contribution to sustainable urban development. The combination of LED luminaires and digital lighting control provides an promising hardware basis for integrating supplementary functions, which, in turn, can make cities more ecological, more comfortable and more socially inclusive.

LUMEGA IQ N – INNOVATIVE, INTELLIGENT AND INSECT-FRIENDLY

With the new Lumega IQ N, TRILUX has completely revised the tried- and-tested Lumega LED range and raised it to a new level in terms of appearance, quality and ecology. The luminaire is available in two sizes and is approved up to wind zone 4. Luminous flux, light distribution and light colour can be flexibly adjusted, as can the smartness. With the networked Smart Lighting Ready version, light management via the cloud is extremely simple.

Especially sustainable: thanks to an intelligent design the luminaire emits no spill light. An IP66 protection rating prevents flying animals from entering the luminaire head and the reduced housing temperature ensures that flying insects are not subject to danger. In addition, the level of attraction can be significantly reduced via an appropriate light colour. A further ecological advantage is easy servicing.



* German Energy Agency (dena): Energy-Efficient Street Lighting. Identifying and Realising Potential Savings. 2016



Ecological light

Because LEDs are small, point-shaped light sources their light can be directed and distributed more precisely than with conventional lamps. TRILUX luminaires reduce glare and prevent unwanted light from being scattered, and the more efficient control over light distribution prevents spill light from e.g. streetlighting and architectural illumination entering the homes of residents. This prevents negative impacts on their well-being and quality of sleep.

Precise light distribution avoids light pollution, also known as light smog, because light is only emitted to precisely where it is needed. Minimising unwanted light emissions, as can be achieved with LED luminaires, therefore makes a significant contribution to a liveable environment in both urban and rural areas.

WHAT IS LIGHT SMOG?

Light pollution describes the brightening of the night sky as a result of artificial light sources. The annual increase in light pollution in Germany is around 6 %. Some of our towns, cities and local authorities radiate light 4,000 times brighter than natural night light. A study published by the German Research Centre for Geosciences (GFZ) at the beginning of 2018 showed that night-time lighting is increasing in most German states, with some becoming 3 - 4 % brighter each year.

A large proportion of the light smog is caused by ineffective light sources. In addition to the unnecessary waste of energy, this has negative consequences for nature and the environment. Even the growth cycle of plants is affected by artificial light at night: deciduous trees can drop their leaves in autumn later and thus become more susceptible to frost damage.

The human day-night rhythm is also influenced. For example, light at night suppresses the production of the sleep hormone melatonin, which disrupts the human internal clock. This can lead to sleep problems. We also see fewer stars.





Far beyond lighting

Since luminaires are distributed in a more or less uniform grid across the city and in themselves provide power supply, they are able to assume tasks that go far beyond lighting. LED luminaires already function as charging stations for e-mobility, can record environmental and traffic data via sensors, and can integrate cameras and communication modules such as WiFi and mobile communications as well as hardware for parking management and traffic guidance systems. In this way they can help solve traffic, air and waste problems and support towns and cities on their way to becoming green places for living.



CONSTELA 19 – FOR PLEASANT SMART CITIES

With its high standards of design, quality of light and smartness, ConStela 19 bathes prestigious outdoor areas in perfect light. The luminaire head and supporting column can be flexibly configured and networking and control via the LiveLink light management system is quick and easy.

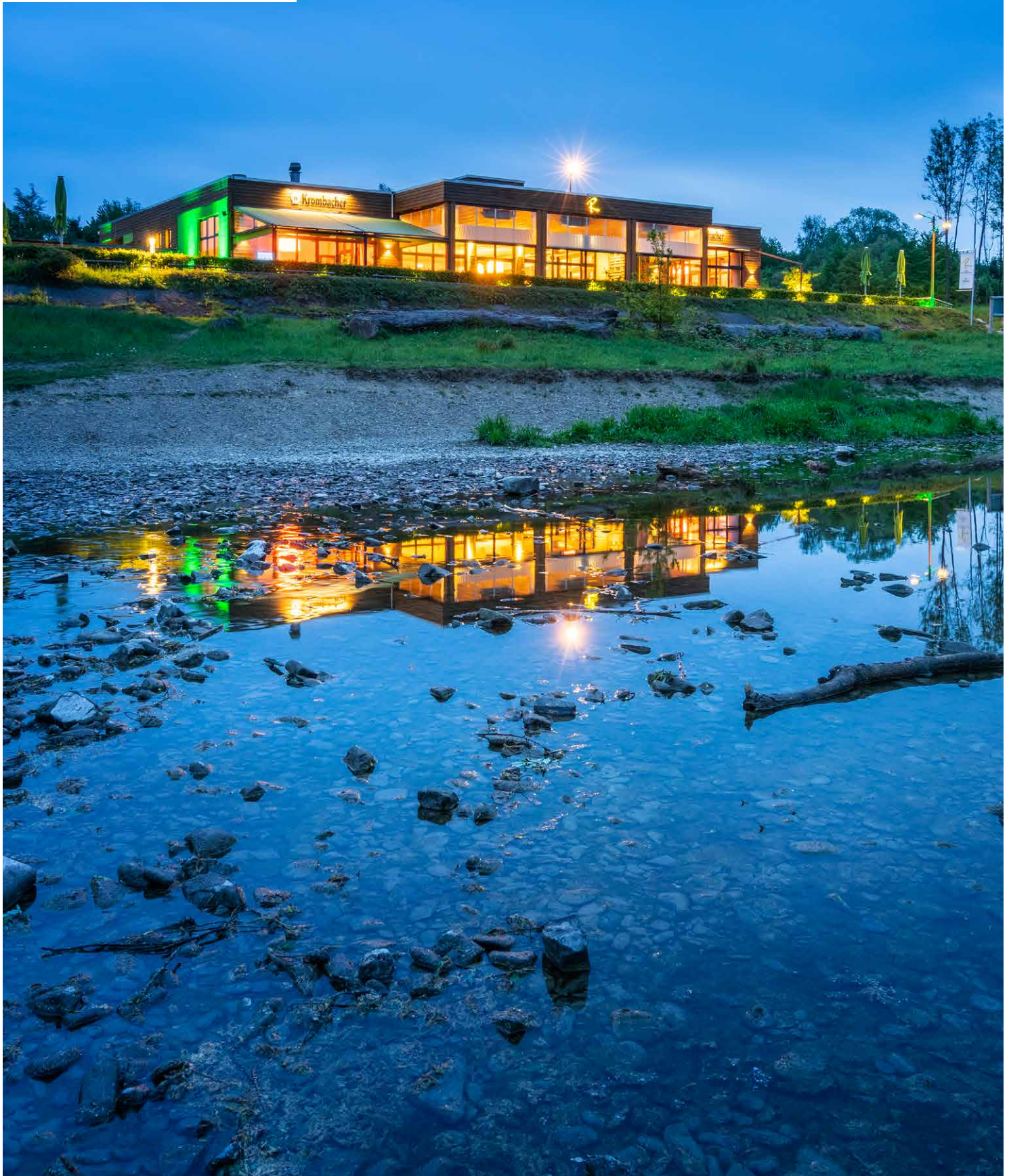


A special feature is the smartness of the column: it can be equipped with IIoT modules, for example WiFi routers, cameras and e-charging stations. A design joint without visible screws clearly distinguishes the individual modules from one another, further enhancing the appearance of the outdoor luminaire.

Climate protection is the most pressing challenge of our time and we can wait no longer. It is therefore our non-negotiable duty to produce and operate in a climate-neutral manner for a future worth living on our unique planet.

EPILOGUE

- Appendix
- GRI Index



OUR REPORTING

This report was prepared in accordance with the GRI Universal Standards (GRI 1: Foundation 2021). It is also based on the Corporate Sustainability Reporting Directive (CSRD) and the specific European Sustainability Reporting Standards (ESRS).

The Global Reporting Initiative (GRI) develops guidelines for the preparation of sustainability reports which are drawn up in international collaboration with representatives from business, trade unions, society and academia and which supplement sustainability management and controlling in companies.



PRINCIPLES

The fundamental principles outlined below were complied with when preparing the carbon footprint and corresponding report in accordance with the Greenhouse Gas Protocol Corporate Accounting and Reporting Standard (GHG Protocol).

Accuracy:

we take great care to ensure that the information presented here is correct and reliable. We carefully check and validate all data.

Balance:

we endeavour to present the positive and negative aspects of our sustainability performance in a balanced manner. The aim is to create a realistic impression that includes both successes and the need for action.

Clarity:

our reporting aims to be comprehensible and transparent. We use clear language and present the information in a structured way that is easily accessible for readers.

Comparability:

we want to record our data and information permanently so that we can make specific comparisons over time. This helps our stakeholders to assess our progress in all sustainability issues. No detailed data collection took place in 2020 due to the coronavirus pandemic.

Sustainability context:

our report places our sustainability performance in the context of global sustainability goals. We consider our impact on social, ecological and economic aspects.

Actuality:

we strive to publish our Sustainability Report at suitable time intervals to ensure that information is up-to-date and relevant. Annual updates for our stakeholders and biennial publication are planned.

Verifiability:

the verifiability of our information is important to us. We continue to work on our data concept and to ensure its comprehensibility.



GRI

GLOBAL REPORTING INITIATIVE



GRI Table

Disclosure	Standard	Disclosure Name
GRI 2-1	Organisational details	
GRI 2-13	Delegation of responsibility for managing impacts	
GRI 2-2	Entities included in the organization's sustainability reporting	
GRI 2-22	Statement on sustainable development strategy	
GRI 2-23	Policy commitments	
GRI 2-25	Processes to remediate negative impacts	
GRI 2-26	Mechanisms for seeking advice and raising concerns	
GRI 2-27	Compliance with laws and regulations	
GRI 2-28	Membership associations	
GRI 2-29	Approach to stakeholder engagement	
GRI 2-3	Reporting period, frequency and contact point	
GRI 2-30	Collective bargaining agreements	
GRI 2-4	Restatements of information	
GRI 2-5	External assurance	
GRI 2-6	Activities, value chain and other business relationships	
GRI 2-7	Employees	
GRI 201	Direct economic value generated and distributed	
GRI 202-1	Market Presence	Ratios of standard entry level wage by gender compared to local minimum wage
GRI 202-1	Market Presence	Ratios of standard entry level wage by gender compared to local minimum wage
GRI 202-2	Market Presence	Proportion of senior management hired from the local community
GRI 203-2	Indirect Economic Impacts	Significant indirect economic impacts
GRI 204-1-a	Purchasing Practices	Proportion of spending on local suppliers
GRI 204-1-b	Purchasing Practices	Proportion of spending on local suppliers
GRI 204-1-c	Purchasing Practices	Proportion of spending on local suppliers
GRI 205	Anti-Corruption	Operations assessed for risks related to corruption
GRI 301-1-a	Materials	Materials used by weight or volume
GRI 301-1-b	Materials	Materials used by weight or volume
GRI 301-3	Materials	Reclaimed products and their packaging materials
GRI 301-3	Materials	Reclaimed products and their packaging materials
GRI 302-1	Energy	Energy consumption within the organization
GRI 302-2	Energy	Energy consumption outside of the organization
GRI 302-4	Energy	Reduction of energy consumption
GRI 302-5	Energy	Reductions in energy requirements of products and services
GRI 304	Biodiversity	Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas
GRI 304-2	Biodiversity	Significant impacts of activities, products and services on biodiversity
GRI 305-1	Emissions	Direct (Scope 1) GHG emissions
GRI 305-2	Emissions	Energy indirect (Scope 2) GHG emissions
GRI 305-3	Emissions	Other indirect (Scope 3) GHG emissions
GRI 306-1	Waste	Waste generation and significant waste-related impacts
GRI 306-2	Waste	Management of significant waste-related impacts
GRI 306-3	Waste	Waste generated
GRI 306-4	Waste	Waste diverted from disposal
GRI 306-5	Waste	Waste directed to disposal

GRI 403-1-a	Occupational Health and Safety	Occupational health and safety management system
GRI 403-1-b	Occupational Health and Safety	Occupational health and safety management system
GRI 403-2	Occupational Health and Safety	Hazard identification, risk assessment, and incident investigation
GRI 403-2	Occupational Health and Safety	Hazard identification, risk assessment, and incident investigation
GRI 403-3	Occupational Health and Safety	Occupational health services
GRI 403-4	Occupational Health and Safety	Worker participation, consultation, and communication on occupational health and safety
GRI 403-5	Occupational Health and Safety	Worker training on occupational health and safety
GRI 403-6	Occupational Health and Safety	Promotion of worker health
GRI 403-7	Occupational Health and Safety	Prevention and mitigation of occupational health and safety impacts directly linked by business relationships
GRI 403-8	Occupational Health and Safety	Workers covered by an occupational health and safety management system
GRI 403-9	Occupational Health and Safety	Work-related injuries
GRI 404-1	Employment	New employee hires and employee turnover
GRI 404-1	Training and Education	Average hours of training per year per employee
GRI 404-2	Training and Education	Programs for upgrading employee skills and transition assistance programs
GRI 405-1	Diversity and Equal Opportunity	Diversity of governance bodies and employees
GRI 407-1	Freedom of Association and Collective Bargaining	Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk
GRI 408-1	Child labour	Operations and suppliers at significant risk for incidents of child labour
GRI 408-1	Child labour	Operations and suppliers at significant risk for incidents of child labour
GRI 409	Forced and compulsory labour	Operations and suppliers at significant risk for incidents of forced or compulsory labour
GRI 409-1	Forced and compulsory labour	Operations and suppliers at significant risk for incidents of forced or compulsory labour
GRI 410-1	Security Practices	Security personnel trained in human rights policies or procedures
GRI 413	Local Communities	Operations with local community engagement, impact assessments, and development programs
GRI 414	Supplier Social Assessment	
GRI 414-1	Supplier Social Assessment	New suppliers that were screened using social criteria

OUR MATERIALITY ANALYSIS



A structured process for the company's materiality analysis was established at TRILUX between 2021 and the end of 2022, with the Global Reporting Initiative requiring this analysis in its sustainability reporting guidelines. The requirements of the Corporate Sustainability Reporting Directive (CSRD) and the relevant European Sustainability Reporting Standards (ESRS) were also taken into account during implementation.

When conducting the materiality analysis, all sustainability topics that are relevant to both the company and its stakeholders were initially identified. These topics were assessed in terms of their materiality from two perspectives: the inside-out perspective (impact materiality), which looks at the TRILUX impact on the topics, and the outside-in perspective (financial materiality), which focuses on the impact of these topics on TRILUX.

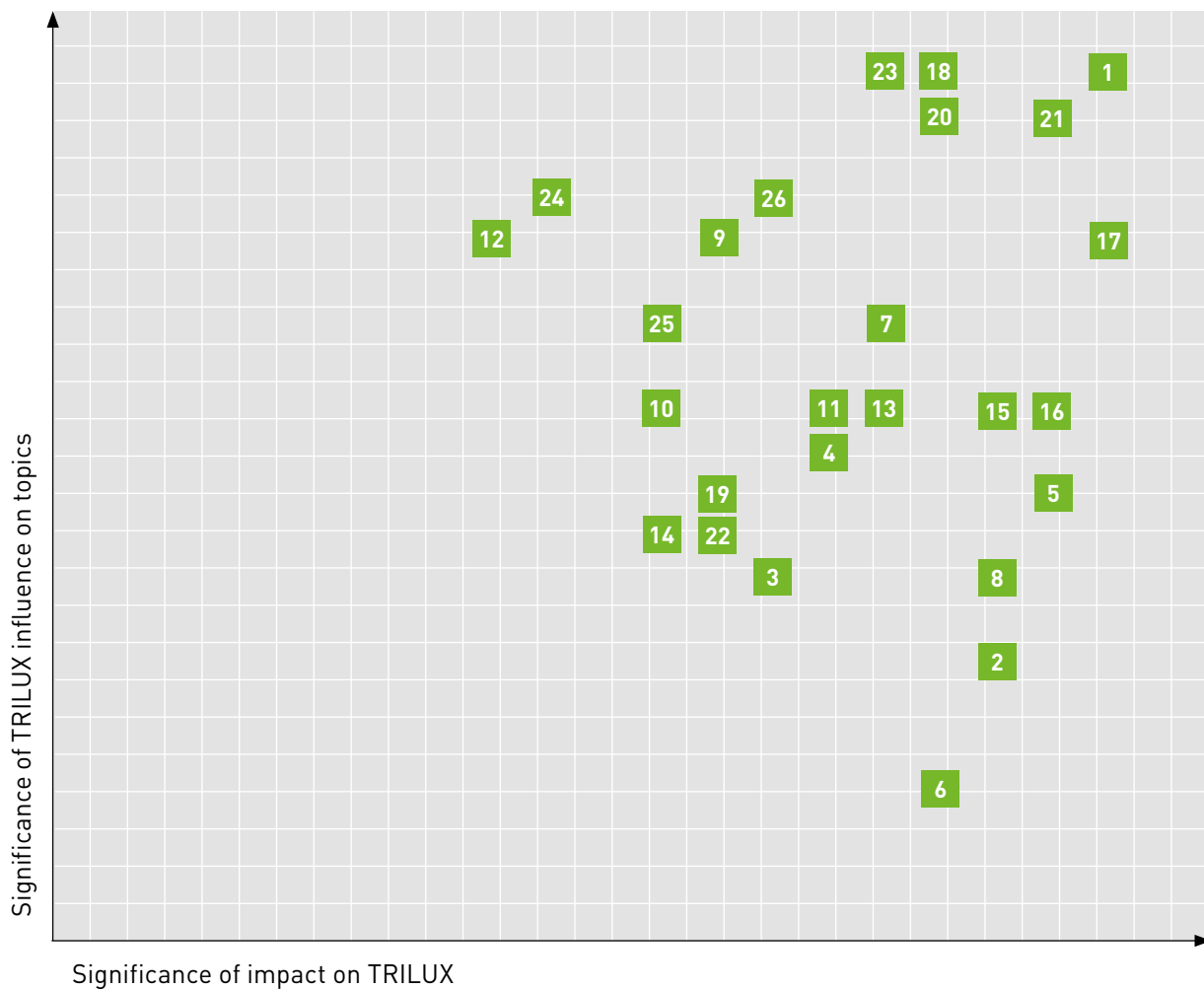
An impact analysis was carried out for the inside-out assessment, which included the most important business activities, and reviewed the impacts in terms of their extent, severity, irreversibility and, in the case of potential impacts, also in terms of their probability of occurrence. Expert surveys, employee feedback, study analyses and interviews with stakeholder representatives were used to identify and evaluate further important topics.

After identifying and evaluating these topics and their impact from both perspectives, they were transferred to a matrix and prioritised. The result of this materiality matrix was again discussed in detail internally with the specialist divisions and Executive Board.

The result of the materiality analysis, which was supported by the consulting firm 4L Impact Strategies GmbH, created the materiality matrix and a list of the key topics. Internal discussions with the specialist divisions and the Executive Board followed to ensure that these were given appropriate consideration.

Materiality matrix as of February 2023

1. Energy-efficient, sustainable solutions and concepts
2. Product environmental data
3. Waste reduction
4. Circular economy
5. GHG emissions
6. Eco-effective materials
7. Sustainable procurement
8. Digitisation
9. Promotion of research
10. Sustainable transport
11. Employee well-being
12. Knowledge transfer on sustainability
13. Economic value creation
14. Employee development
15. Sustainability reporting
16. Sustainable business models
17. Risks and opportunities with regard to climate change
18. Owner-managed company
19. Global responsibility in the supply chain
20. Partnership
21. Customer satisfaction
22. Employee mobility
23. Emission-efficient value creation
24. Emission-efficient buildings
25. Biological effect of light
26. Biodiversity



GRI 2-2

Publisher

TRILUX GmbH & Co. KG

Responsible

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GRI 2-3

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GRI 2-2

Reporting period

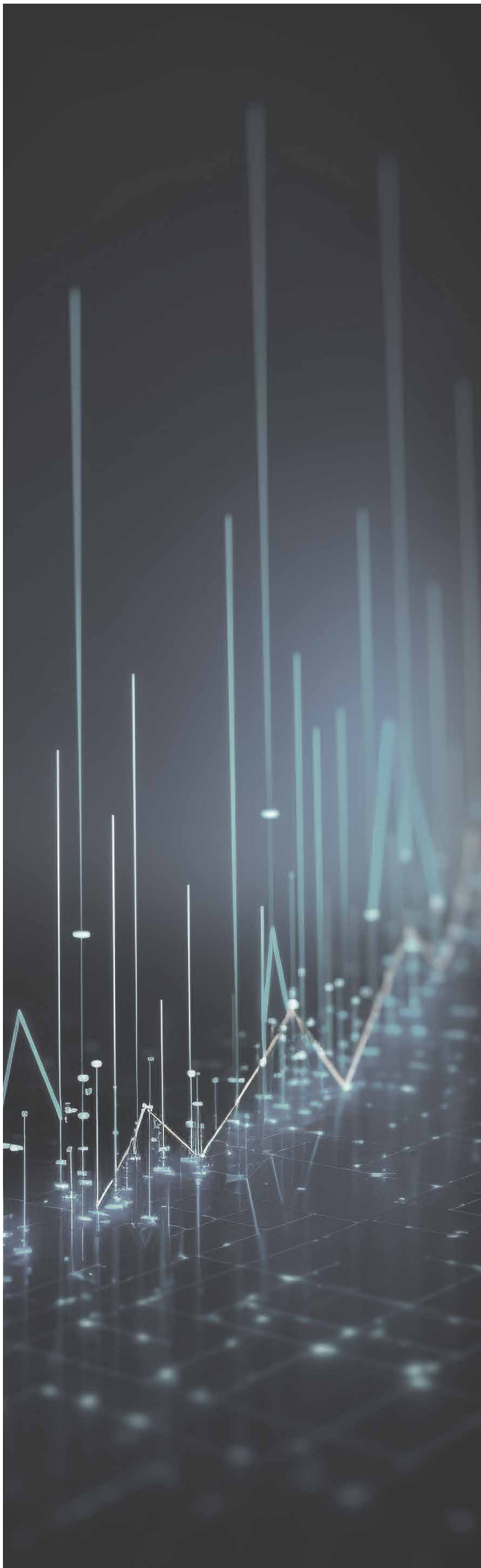
1 January 2021 – 31 December 2022

GRI 2-3

TRILUX is organised in an international, competitive holding structure and is committed to the values of a mid-sized, independent family-owned business in accordance with European standards.

Defined policies in corresponding documents:

- Anti-Corruption
- Competition
- Data Protection
- Information Security



GRI 2-3

Reporting frequency

From the 2025 reporting year, annual reporting will be carried out in accordance with the requirements of the Corporate Sustainability Reporting Directive (CSRD). Until then, we continue to report voluntarily at regular intervals.

Date of publication

2024

GRI 2-4

No voluntary sustainability report was published in 2020 as the challenges resulting from the COVID-19 pandemic diverted our attention and resources to other urgent business areas. The sustainability area of our company was also still being developed in this period.

GRI 2-5

There was no external audit of this Sustainability Report. The report will fulfil this requirement as soon as we fall under the reporting obligation of the Corporate Sustainability Reporting Directive (CSRD). Until then we will concentrate on further developing and strengthening our internal reporting processes.

GRI 2-23

CORRUPTION PREVENTION

TRILUX is committed to anchoring our values and standards in terms of ethics, integrity and transparency through clear principles. We have taken various measures to ensure that these principles are effectively realised.

One important aspect is the implementation of training for awareness-raising to prevent corruption and bribery. These training courses serve to heighten our employees' awareness of ethical issues and to communicate to them appropriate ways of acting.

We have also established a whistleblowing procedure that permits our stakeholders to report corruption and bribery. This procedure creates a safe and secure environment in which possible violations can be reported.

We regularly review our control bodies such as accounting and purchasing in order to effectively prevent corruption and bribery. Through a comprehensive review, we ensure that our internal processes are robust and transparent.



We have also implemented special authorisation procedures for sensitive transactions such as gifts and travel. These guarantee that there are no violations of our ethics and compliance guidelines.

GRI 2-25

TRILUX introduced a whistleblower system in 2022 so that information on violations of EU law, national law or violations of the ZVEI-VDMA Code of Conduct, our applicable Code of Conduct, can be reported anonymously without fear of negative consequences. In 2023 this system will be evaluated for its effectiveness and the requirements of the Supply Chain Due Diligence Act and adapted for customers and suppliers with regard to the requirements of the Act.



TRILUX has a zero-tolerance policy for reprisals. Any form, including threats and attempts, is prohibited and can be reported immediately via the company's internal reporting channel introduced in 2022. TRILUX will take all reasonable steps to protect the whistleblower.

Individuals can use our internal reporting channel to report violations. This enables us to identify and rectify these violations at an early stage, take appropriate measures, prevent further misconduct and limit potential financial, defamatory, environmental, human and other adverse effects. We undertake to treat the reported offences carefully and confidentially. This whistleblower policy is not a substitute for employees and managers to take responsibility for their workplace. No reports were received via the whistleblower procedure in 2022.

INVOLVEMENT OF STAKEHOLDERS

At TRILUX we maintain a very active and continuous dialogue with our stakeholders in order to better understand their needs and expectations and integrate them into our strategic decisions and business processes. We strive to continuously improve this dialogue and further strengthen our cooperation.

This of course also applies to important dialogue with our suppliers. We exchange ideas in annual meetings to ensure trusting and sustainable cooperation. In doing so, we place value on fair business practices, transparency and the promotion of sustainable supply chains.

We also maintain close relationships with political decision-makers in order to make an active contribution to the legal framework and political initiatives in the area of sustainability and energy management.

KPI-Table

KPI	Unit	2020	2021	2022	2023
		Total (2020)	Total (2021)	Total (2022)	
Environment					
Scope 1 GHG Emissions	tCO ₂ e	3.228	3.734	3.331	
Scope 2 GHG Emissions	tCO ₂ e	2.989	2.476	2.653	
Total water consumption	Megaliter	15	12	11	
Total electricity consumption	kWh	7.844.533	7.786.047	7.641.265	
Total energy consumption	MWh	22.702	25.951	23.751	
Total renewable energy consumption	GJ	16.634	16.510	17.303	
Total weight of reused or recycled water	Metric tonne	162,5	162,5	162,5	
Total weight of hazardous waste	Metric tonne	19	35	24	
Total weight of non-hazardous waste	Metric tonne	2449	2697	2684	
Total weight of waste recovered	Metric tonne	2.194	2.428	2.458	
Weight of WEEE collected	kg	38.160	19.625	196.745	
Weight of EEE placed on the market	kg	8.117.528	8.128.398	8.513.727	
Total gross Scope 3 Upstream GHG emissions	tCO ₂ e	3.709	4.280	4.155	
Total gross Scope 3 Downstream GHG emissions	tCO ₂ e	n/a	n/a	n/a	
% of the total workforce across all locations who received training (internally or externally) on environmental issues	%	100	100	100	
% of all operational sites for which an environmental risk assessment has been conducted	%	100	100	100	
% of operational facilities certified ISO 14001, EMAS or against other environmental management standard?	%	100	100	100	
Labour & Human Rights					
% of women in executive positions (excluding boards of directors)	%	5,13	5,88	4,26	
# of hours of skills training provided per employee (average)	#	2,9	12,6	33,1	
Total number of hours worked	#	1.662.430	1.716.172	1.721.790	
Number of days lost due to work-related injuries, fatalities and illnesses	#	116	102	159	
Number of accidents at work	#	5	7	9	
% of workers from minority groups and/or vulnerable workers employed in relation to the whole organization	%	7,2%	7,5%	7,7%	
% of workers from minority groups and/or vulnerable workers in top executive positions (excluding boards of directors) (if applicable)	%	n/a	n/a	n/a	
% of women employed in relation to the whole organisation	%	19,64	19,8	19,65	
% of women within the organisation's board	%	0	0	0	
% unadjusted gender pay gap (average)	%	14,9	14,1	13,4	
% of all operational sites for which an employee health & safety risk assessment has been conducted	%	100	100	100	
% of the total workforce across all locations represented in formal joint management-worker health & safety committees	%	100	100	100	
% of the total workforce across all locations who are covered by formal collective agreements concerning working conditions	%	100	100	100	
% of the total workforce across all locations who are covered by formally-elected employee representatives	%	99	99	99	
% of the total workforce across all locations who received regular performance and career development reviews	%	n/a	77,3	81,6	
% of the total workforce across all locations who received career- or skills-related training	%	53	75	97	
% of the total workforce across all locations who received training on diversity, discrimination and/or harassment	%	n/a	n/a	n/a	
% of all operational sites that have been subject to human rights reviews or human rights impact assessments	%	n/a	n/a	n/a	

Percentage of all employees paid below the living wage, including permanent employees and external employees	%	0	0	0	
Percentage of direct employees included in a living wage benchmark analysis	%	0	0	0	2,5%
Percentage of direct employees receiving less than the living wage	%	0	0	0	
Percentage of the average pay gap of direct employees receiving less than the living wage compared to a living wage benchmark	%	0	0	0	
Ratio of the annual total salary for the highest-paid person to the average annual total salary for all employees (excluding board members)	%	n/a	n/a	n/a	3,4
% of operational facilities that are certified ISO 45001 or against other labour or human rights management standard?	%	100	100	100	
Business Ethics					
% of employees that receive business ethics training	%	10	10	10	
# of confirmed corruption incidents	#	0	0	0	
# of reports related to whistleblower procedure	#	n/a	n/a	0	
# of confirmed information security incidents	#	1	0	0	
% of all operational sites for which an internal audit/risk assessment concerning business ethics has been conducted	%	0	0	0	100
% of all operational sites with certified anti-corruption management system	%	0	0	0	
% of all operational sites an information security management system (ISMS) certified to ISO 27000 (or other equivalent/similar standard)	%	0	0	0	
Sustainable Procurement					
% of suppliers that have signed the Code of Conduct	%	n/a	n/a	n/a	49
% of targeted suppliers with contracts that include clauses on environmental, labor, and human rights requirements	%	n/a	n/a	n/a	30
% of targeted suppliers that have gone through a CSR assessment	%	n/a	n/a	n/a	
% buyers who have received sustainable procurement training	%	n/a	n/a	n/a	50
% of audited suppliers engaged in corrective actions or capacity building	%	n/a	n/a	n/a	
Suppliers who filled out CMRT	%	n/a	n/a	n/a	
% of targeted suppliers that have gone through a CSR on-site audit	%	n/a	n/a	n/a	

IMPRINT

Sustainability Report 2021/22

for TRILUX GmbH & Co. KG,
Oktalite.

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