

**LEDiL**

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Sustainability  
Report



2023

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# About LEDiL

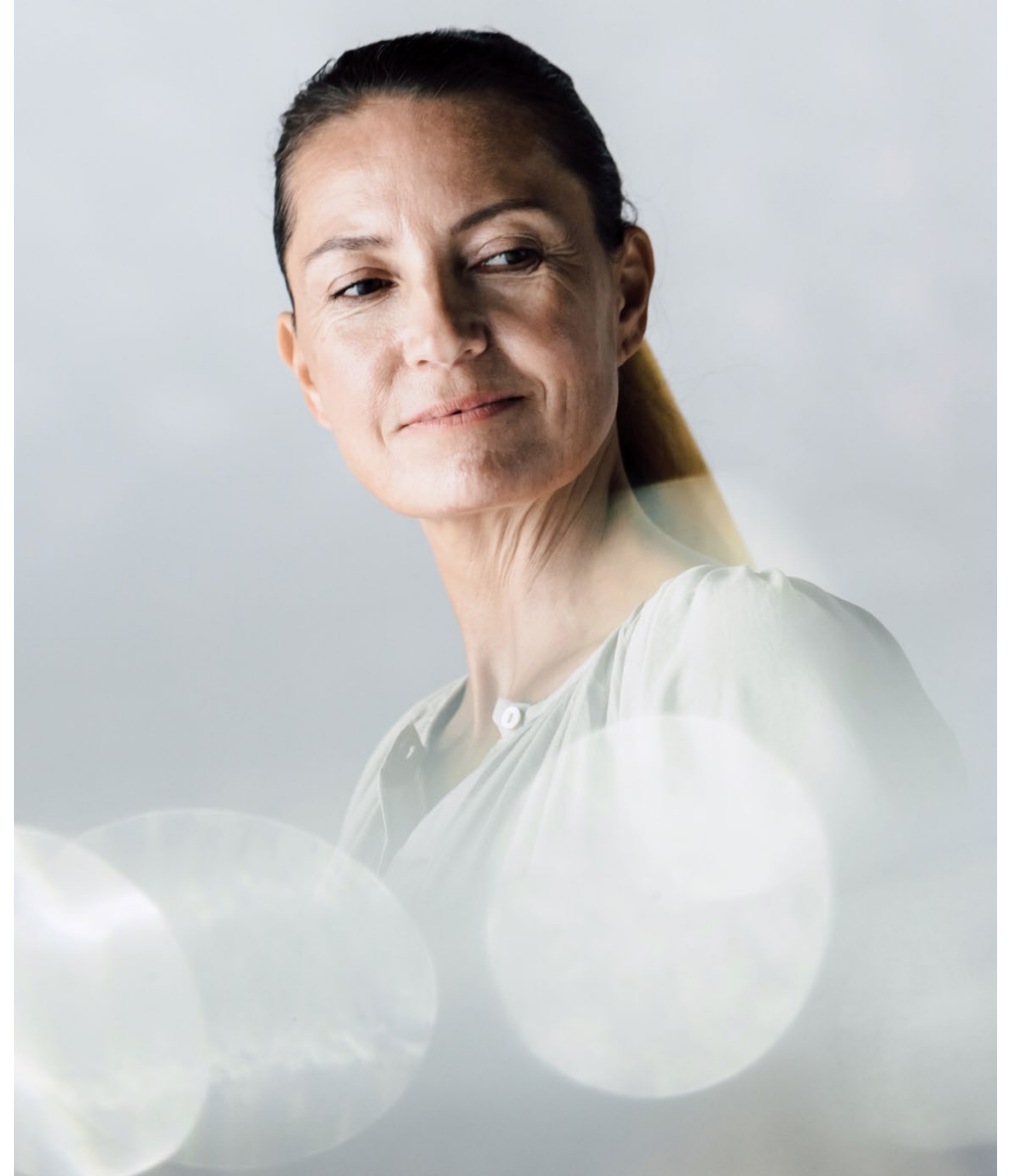
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Our story is one of continuous discovery. Since our beginnings in 2002, we set out on a mission to perfect light for a luminous future – for humankind and the life around us.

With every customer case, we advance the quality of LED light by continuously challenging our competence and pushing the boundaries of innovation.

Our state-of-the-art optical solutions help create light that enhances wellbeing, functionality, safety and sustainability. Whether we work on indoor or outdoor lighting, we have the experience and technological know-how to achieve extraordinary results in a wide range of applications.

Together with our customers and partners, we enable and strengthen a shared ecosystem of light; because we know that no one can achieve a better future alone.



# CEO words

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## LEDiL's impact on sustainability is large as an enabler of energy savings and lower emissions!

LEDiL may have a more significant role in sustainability than its size would promise. This is due to the fact that lighting contributes to 15 – 20 % of the world's electricity consumption, and accounts for 5 % of the world's greenhouse gas emissions. As a world leading secondary optics provider, we have a major impact on a wide group of luminaire manufacturers all over the world to lower emission and mitigate climate change on a big scale. With high quality lighting provided through our solutions we also enhance the well-being of people and life around us.

While being an enabler on a bigger scale through our customers, it is also vitally important that we perform well ourselves in our everyday lives. Sustainability is continuously with us whether we have a great financial year or more challenging year like

2023 was. Geopolitical and economic challenges hit our sales, like they did to the whole lighting industry, but it does not decrease our passion and commitment to allocate resources to continuously provide innovative and more sustainable solutions to the lighting industry. In addition to providing more energy-efficient solutions, we are constantly challenging ourselves and launching interesting products to further increase well-being, improving safety, enhance light functionality and decrease light pollution in urban areas.

In 2023 we made changes in our logistic arrangements by moving our main warehouse from Finland to Poland. Location closer to our customers and shorter material transfers from Asia to Europe will have a significant impact in the form of lower emissions. We have also systematically favored more environmentally friendly sea freight ahead of air freight when shipping products to customers.

Good innovations and improvements require innovative and motivated employees and solid, capable partners. We map continuously competence requirements and support employees to develop in their individual performance. 100 % of our partners

have committed to our code of conduct and after the COVID era we are again able to ensure and develop our global supply chain in close relationship with our selected partners.

In 2024 we focus on long term sustainability planning. We will define long-term objectives and set near term targets to ensure our progress. Our goal is to obtain our first certification in the field of sustainability among other concrete activities ongoing.

Together, we perfect light for a luminous future.



Kimmo Rauhala  
CEO

# At the core of our business

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## Our mission

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Perfecting light for  
a luminous future.

## Our values

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Customer benefit  
In this together  
Competence  
Inspiration  
Respect

## Our vision

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To enhance wellbeing,  
functionality and safety for  
a more sustainable future and  
improved quality of life.



### Inspiration

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"We are curious and inspiration  
is the source of our innovation"



### In this together

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"One LEDiL, one team, one goal"



### Respect

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"We value people and believe  
that mutual respect is about  
appreciation, fair treatment and  
consideration for all"



### Competence

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"We take pride in our profession and  
are dedicated to climbing the  
mountain of knowledge"



### Customer benefit

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"Creating real benefit for all  
customers is at the core of  
everything we do"



# LEDiL sustainability in brief

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Lighting is a major source of electricity demand\* and hence can play a key role in solving the global climate challenge.

At LEDiL, sustainability is an essential part of our core business logic: LEDiL products are instrumental in ensuring efficiency and performance of LED lighting, reducing energy consumption and helping to provide sustainable light, which increases wellbeing, improves safety, and even helps grow food with a smaller footprint: with less energy and hazardous waste, which is caused by traditional light sources. LEDiL's view and commitment to sustainability has been documented in the company's Code of Conduct, which establishes the LEDiL company standards for ensuring safe working conditions, equal and respectful treatment of employees, and environmentally responsible and ethically conducted business operations. Our prioritised sustainability focus

areas are climate impact, sustainable and responsible operation, and employee health and safety. To meet social responsibilities and to achieve success in the market, LEDiL adheres to the highest ethical standards, and we aim to extend this goal to our supply chain. Our code of conduct and related policies are applied in our own, and our subcontractor's operations, building the foundation for LEDiL sustainable performance.

At LEDiL we are committed to upholding the human rights of workers, and to treating them with dignity and respect as understood by the international community. We believe, that in addition to minimising the incidence of work-related injuries and illnesses, a safe and healthy working environment enhances the quality of products and services, the consistency of production, and worker retention and morale.

We recognise that environmental responsibility is essential for producing world class products and operating globally. In manufacturing operations, adverse effects on the community,

environment and natural resources must be minimised while safeguarding the health and safety of the public. LEDiL has a documented environmental system that has been certified according to ISO 14001.



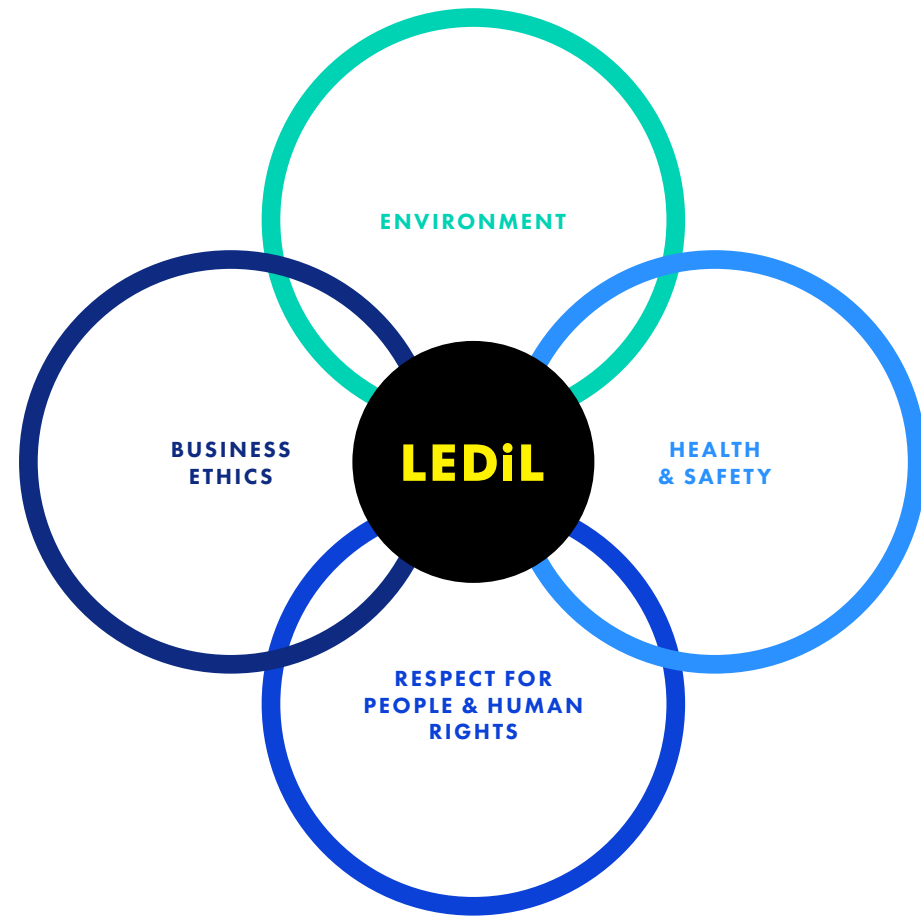
\*International Energy Agency (IEA) (2023). Global energy consumption for lighting. Retrieved from <https://www.iea.org/reports/lighting>

# LEDiL sustainability in brief

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This report continues on the foundation established by the 2017 report outlining LEDiL's sustainability approach, key results and main activities.

The focus areas have been defined based on materiality analysis. The GRI standard has been used as inspiration and a source for essential topics. Our business strategy places high importance on reducing emissions, and this commitment is reflected as an integral part of this report.





# Material sustainability topics and our focus

The environmental, social and economic topics relevant to our business are based on various stakeholder interactions and the result of a questionnaire.

LEDiL firmly advocates for the United Nations Sustainable Development Goals as part of the 2030 Agenda for Sustainable Development. Four key goals have been identified that will steer LEDiL business strategy and sustainable development goals.

13 CLIMATE ACTION



9 INDUSTRY, INNOVATION AND INFRASTRUCTURE



12 RESPONSIBLE CONSUMPTION AND PRODUCTION



7 AFFORDABLE AND CLEAN ENERGY





# Material sustainability topics and our focus

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## The Environmental impact of LEDiL products and services

The positive environmental impacts of our products and services are related to LED lighting energy saving and reducing hazardous substances found in traditional lighting i.e. FL (fluorescent lamps) and HID (high intensity discharge) lamps, as well as enhancing the efficiency of special applications and reducing environmental footprint e.g. in horticultural applications. The use of our products can directly contribute to reducing light pollution and its negative effects on biodiversity.

Our products are designed to further enhance the energy savings of LED lighting by focusing radiated light energy of efficiently on the designed target where it is needed.

Modularity is the basis of our design ideology which allows us to combine fewer parts and tools into a large number of tool combinations

and end products, reducing the need for producing, transporting and warehousing large numbers of end products, and reducing the total amount of different molding tools.

With our wide range of standard products and custom product design services and support we help luminaire manufacturers in developing optimal solutions for better quality and more efficient lighting.

LEDiL operation's environmental approach focuses on fulfilling environmental compliance, ensuring efficient material and energy usage, appropriate handling and reduction of waste and reducing our carbon footprint. Key internal projects focus on optimising our logistics chain and product packaging in order to minimise direct climate impact.

## LEDiL sustainability focus areas



**Environmental compliance**



**Emissions in logistics chain**



**Employee wellbeing and safety**



**Ethical business practices**



**Responsible supply chain**

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# Environmental compliance

Our environmental compliance is based on ISO 14001 standard. Currently we hold ISO 14001:2015 certificate which was recertified by DNV in May 2021 and the next audit is scheduled for May 2024. We constantly maintain and develop our environmental management system. All our products are REACH and RoHS compliant.

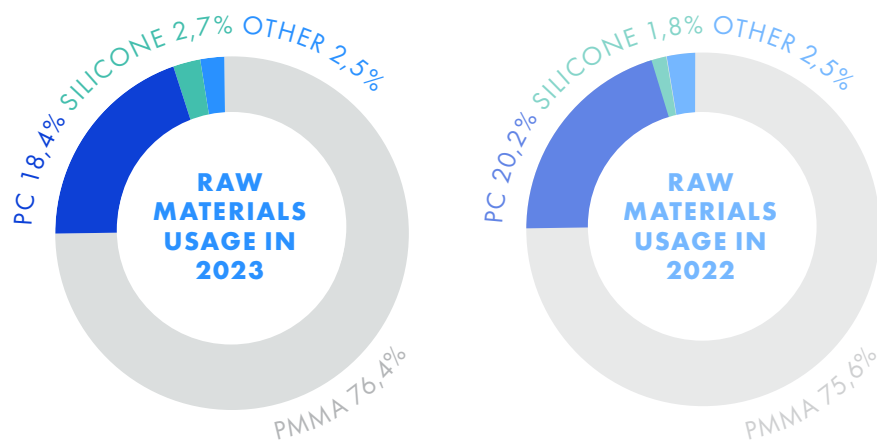


# Environmental compliance

## Materials

LEDiL's designed LED secondary lenses and reflectors are produced from plastic and silicone raw materials. The benefits of plastic compared to glass, another optically competitive material are the lower price, lighter weight and lower energy intensive production process. The weight of optical plastic is 6 times lighter than optical grade glass.

Our aim in product design is to optimise raw material usage and hence reduce environmental loading and waste as far as possible. We actively test and study new materials to find more ecological solutions. All of our products manufactured out of PC or PMMA are fully recyclable. LEDiL's annual raw material usage in 2023 based on material purchasing was 669 tons (last year 906 tons), shows in the graph below by material.





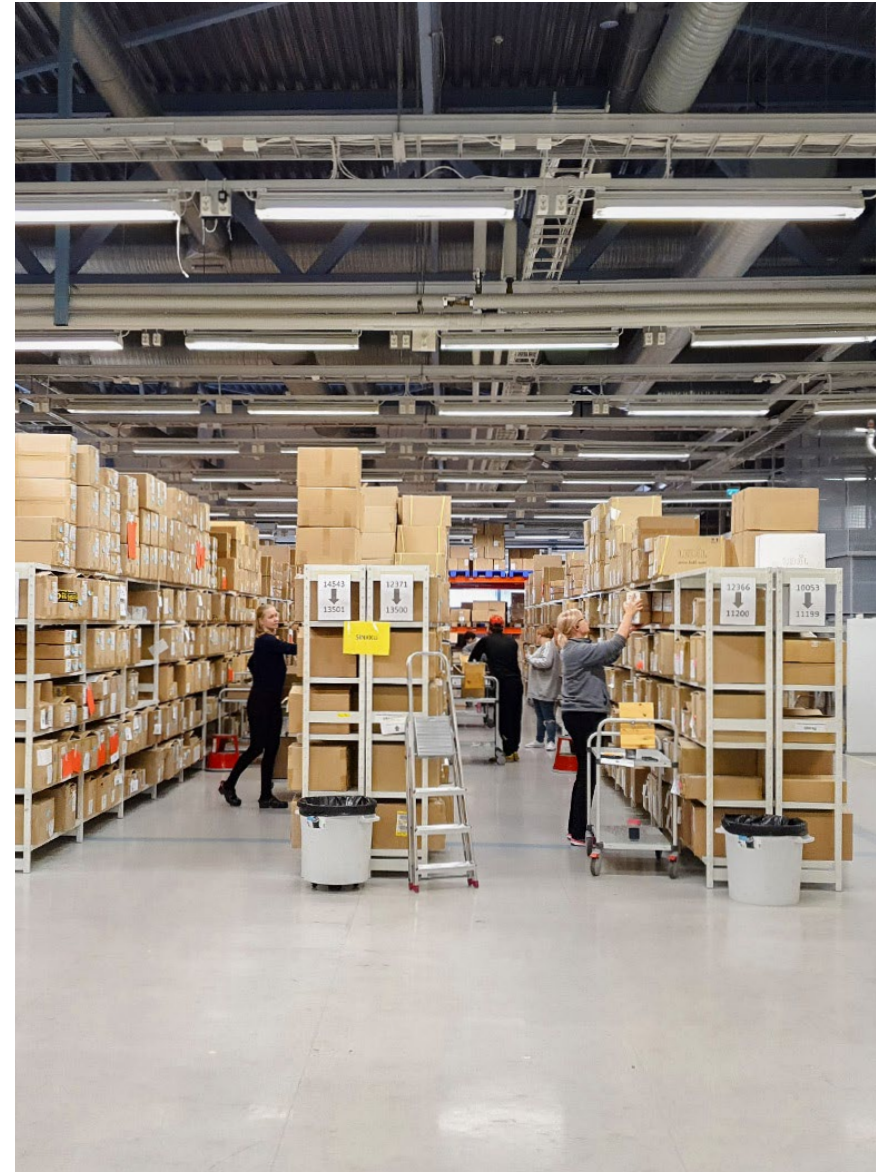
# Environmental compliance

We constantly optimise the use of packaging materials through careful packaging design, taking into account product-specific requirements and the use of packaging materials, costs and the impact on logistics and storage.

In 2023 we changed our logistics by moving our main warehouse from Finland to Poland. A location closer to our customers and shorter material transport from Asia to Europe will have a significant impact in terms of reduced emissions. The same sustainable operations and optimised use of packaging materials used in the Finnish warehouse will continue in the new warehouse.

Packaging material usage	Tons		
	2023	2022	2021
Plastic packaging material (recyclable)	56,6	61,7	68,9
Carton packaging material (recyclable)	61,3	80,0	91,1
Wood pallets (EUR, reusable) *	19,7	14,2	14,0
Plastic pallets (reusable) *	16,6	21,3	14,6

\* Goods handled through Ledil Oy



# Environmental compliance

## Energy

Our measurable in-house energy consumption is based on head office electricity consumption readings for facility, machinery and heating. The LEDiL office facility in Salo is equipped with solar panels and the building uses geothermal. The externally supplied electricity is 100% green energy and includes renewable as well as nuclear energy. LEDiL headquarters will relocate to new office spaces in April 2024, facilitating a more efficient utilisation of square footage.

The main contributor to energy consumption in our value chain is the energy used in our supplier's injection molding factories. This part of our energy consumption can only be estimated from available literature and studies of energy consumption in injection molding together with production volume.

<b>Salo head office electricity use (kWh)</b>	<b>2023</b>	<b>2022</b>	<b>2021</b>
Total electricity use +	232 000	230 000	270 000
Solar electricity production for own use -	120 000	120 000	150 000
Net electricity use	112 000	110 000	120 000
<b>Energy consumption in production (MWh)</b>	<b>2023</b>	<b>2022</b>	<b>2021</b>
Estimated electricity use in injection molding	1 230	1 714	1 766

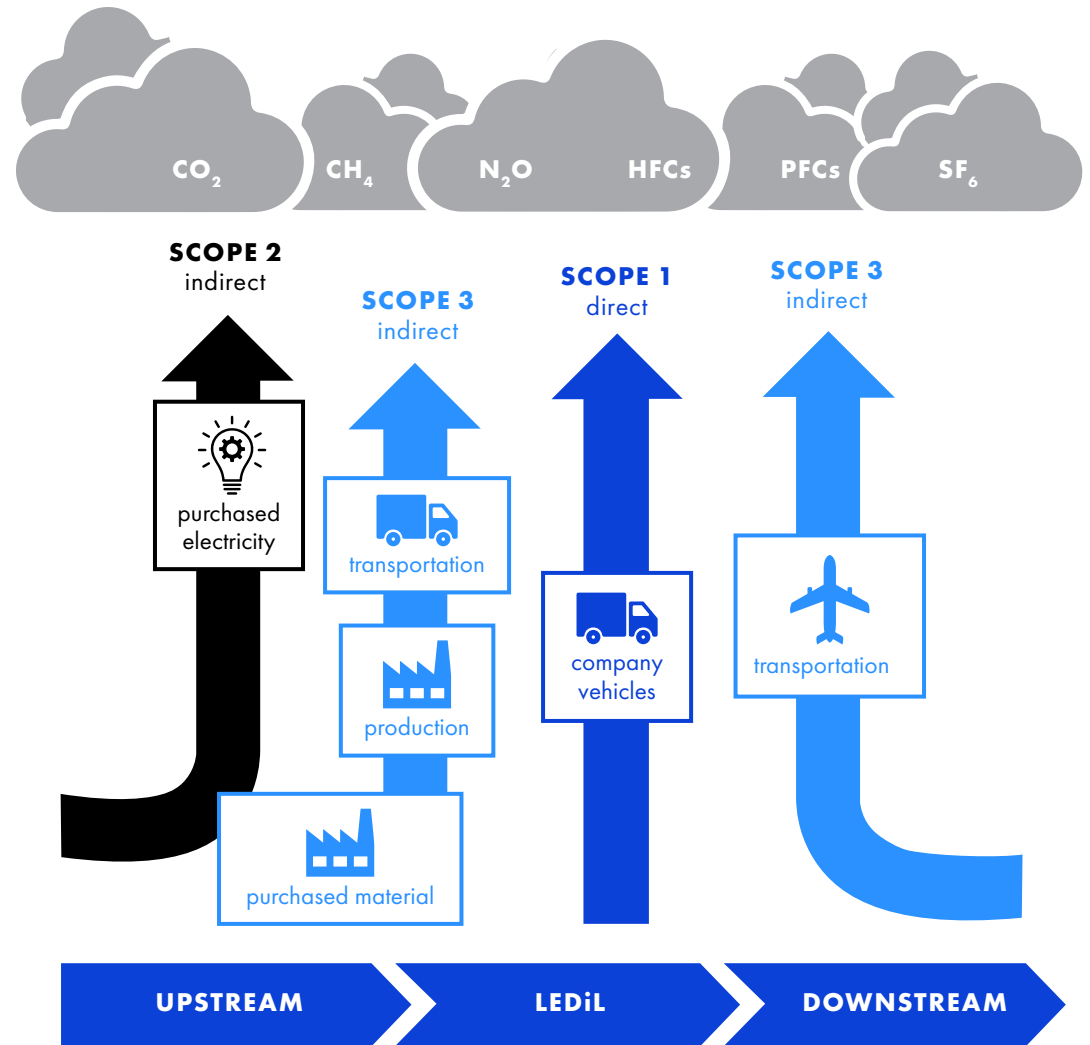


# Environmental compliance

## Emissions

From 2019 onwards LEDiL sustainability reporting has implemented a new calculation method for CO<sub>2</sub>e reporting according to the Greenhouse Gas (GHG) protocol which divides emissions into 3 scopes and direct/indirect emissions. LEDiL's emission split into scopes 1–3 is shown in the picture below.

The direct emissions of our operations in scope 1 include emissions from company owned and leased vehicles. Emissions related to company facilities are due to purchased electricity which is reported as indirect emissions in scope 2. The emissions in the upstream of our supply chain in scope 3 are emissions due to the production of purchased raw materials, emissions due to production at suppliers, and transportation. In the downstream of our supply chain the emissions are mainly due to logistics.

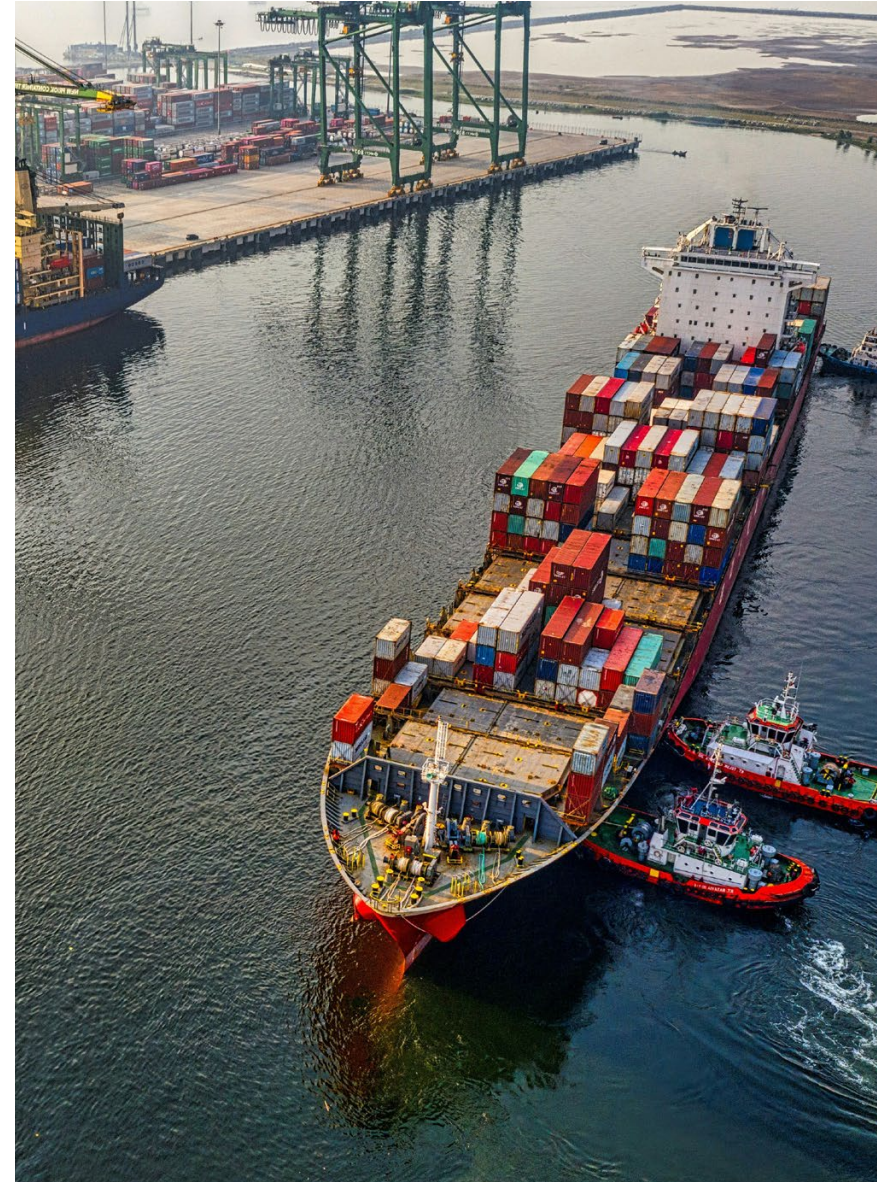




# Environmental compliance

LEDiL's GHG emission split into scopes 1-3						
	2023		2022		2021	
	tCO <sub>2</sub> e	%	tCO <sub>2</sub> e	%	tCO <sub>2</sub> e	%
<b>SCOPE 1</b>	<b>5,5</b>	<b>0,1</b>	<b>1,6</b>	<b>0,0</b>	<b>1,6</b>	<b>0,0</b>
Company owned vehicles	5,5	0,1	1,6	0,0	1,6	0,0
<b>SCOPE 2</b>	<b>38,4</b>	<b>0,7</b>	<b>51,7</b>	<b>0,7</b>	<b>75,9</b>	<b>0,9</b>
Purchased electricity for own use	38,4	0,7	51,7	0,7	75,9	0,9
<b>SCOPE 3</b>	<b>5151,1</b>	<b>99,2</b>	<b>7162,2</b>	<b>99,3</b>	<b>8 029,7</b>	<b>99,0</b>
Logistics	791,3	15,2	1 296,9	18,0	1 863,1	23,0
Production of purchased materials	3 522,1	67,8	4 750,8	65,8	5 018,6	61,9
Production at suppliers	799,3	15,4	1 114,4	15,4	1 148,0	14,2
<b>Total</b>	<b>5 194,9</b>		<b>7 215,5</b>		<b>8 107,2</b>	

The main carbon footprint in our value chain is due to the production of plastic and silicone raw materials in the upstream and logistics emissions in the downstream. In 2023, we refined the calculations for our suppliers. We have also taken into account work trips and company car emissions. In 2023, we were able to reduce logistics emissions by optimising our production footprint and increasing the share of sea freight for internal goods transfers.



# Environmental compliance

## Waste

Our aim is to minimise the generation of waste in general, promote recycling, and minimise the amount of waste to landfill. Our primary efforts in waste management are focused on our main site and warehouses in Poland and Hong Kong. In Salo head office waste sorting is every employee's responsibility.

Our total waste volume is relatively insignificant, as it amounts to less than 20 tons.

Office spaces, the dining and break space, warehouse and laboratory are all equipped with appropriate waste sorting containers that enable easy sorting of paper, cardboards, bio-waste, metal, energy waste, security plastic, and packaging plastic.

Employees are instructed to use these sorting stations appropriately to optimise material circulation. Security destroyed plastics is mostly

scrapping of discontinued products as part of LEDiL's product life cycle management. The increase in security destroyed plastics in 2023 is due to inventory clearing before transit to Poland warehouse.

<b>Waste by type in LEDiL headquarters</b>		
<b>Salo, Finland</b> (tons)	<b>2023</b>	<b>2022</b>
Carton (recyclable)	4,400	4,000
Security destroyed plastics (incineration)	8,371	2,900
Biowaste	2,604	2,352
Energy waste (incineration)	0,582	1,624
Plastic (incineration)	1,936	1,247
Recyclable paper	0,156	0,304
Hazardous waste	0,018	0,019
Metal	0,006	0,004
<b>Total</b>	<b>18,073</b>	<b>12,450</b>

# Social and employee responsibility

LEDiL employee responsibility topics include employee wellbeing and safety, competence development, and employee satisfaction in a fast-growing organization.

The majority of LEDiL employees are based in the headquarters in Salo, Finland. In 2016, LEDiL established a subsidiary in Sycamore, USA. In 2019 LEDiL Ltd China was established and the logistics department Delivered in Hong Kong was acquired. In 2022, LEDiL GmbH was established in Germany. Other areas outside Europe are represented by sales agents.

<b>LEDiL employee data</b>	2023	2022	2021
Number of employees in the end of year	112	113	108
Share of women in employees	38 %	35 %	35 %
Share of women in the management team	9 %	9 %	9 %





# Social and employee responsibility

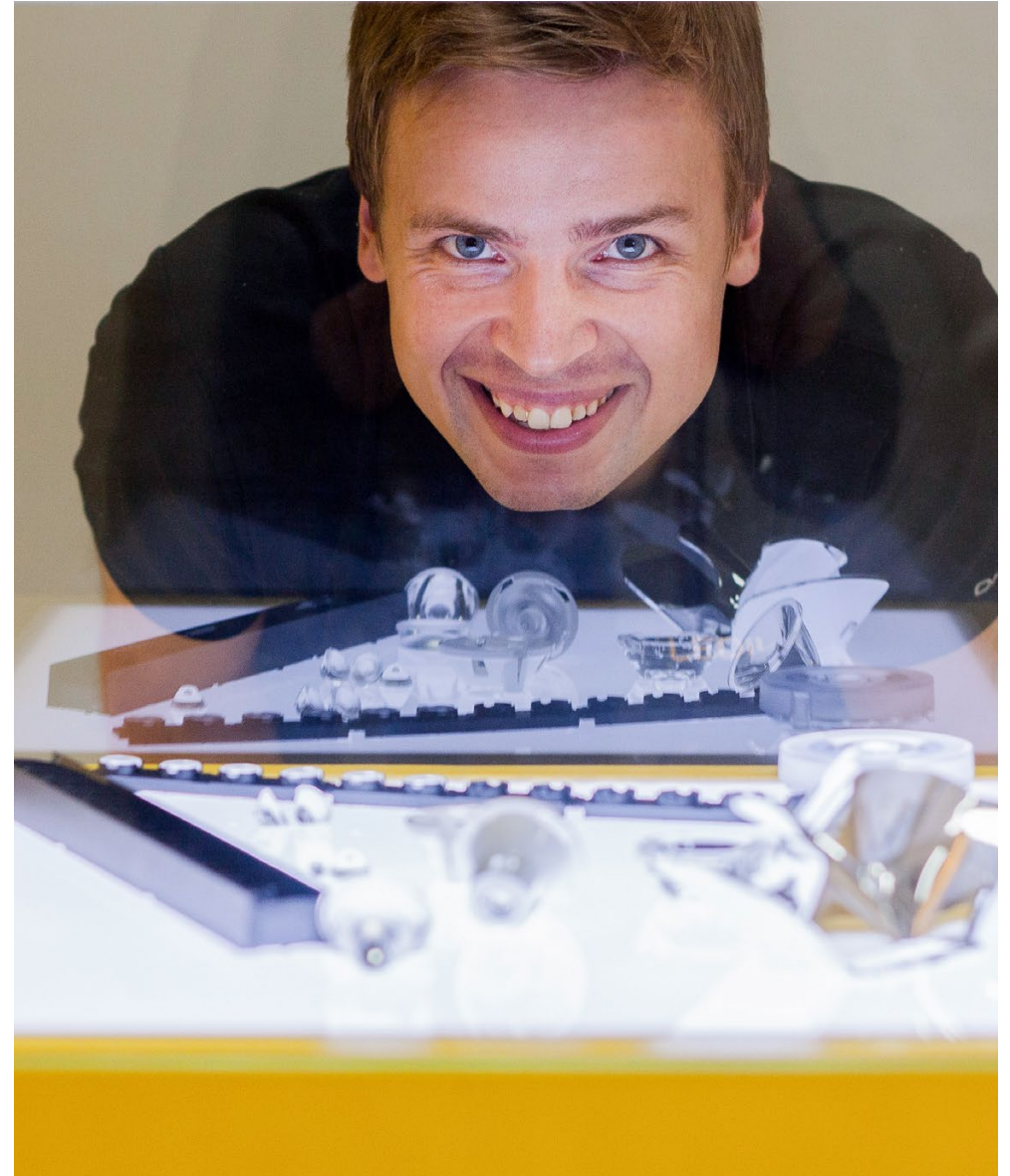
## Employee wellbeing and safety

The primary objective at LEDiL is to offer employees a healthy and safe working environment. Our target is zero accidents annually. All new employees receive training in health and safety. A health and safety committee consisting of representatives from the employees, employer and HR meets regularly to follow up issues and take actions when required. Cooperation with the occupational health services provider is active and focuses on preventive measures and development of employee wellbeing. LEDiL's flexible ways of working and weekly sports activities help to improve and maintain employee wellbeing.

### LEDiL key metrics for occupational health and safety

	2023	2022	2021
Work related injuries	1 pcs	0 pcs	0 pcs
Sick leave rate	1,53 %	1,37 %	1,73 %
Employee turnover	7,0 %	5,0 %	7,0 %

We follow ISO 45001 standard principles in our OHS management. In addition health and safety requirements, including zero tolerance of discrimination, are defined in our code of conduct which we require our suppliers to adhere to.



# Social and employee responsibility

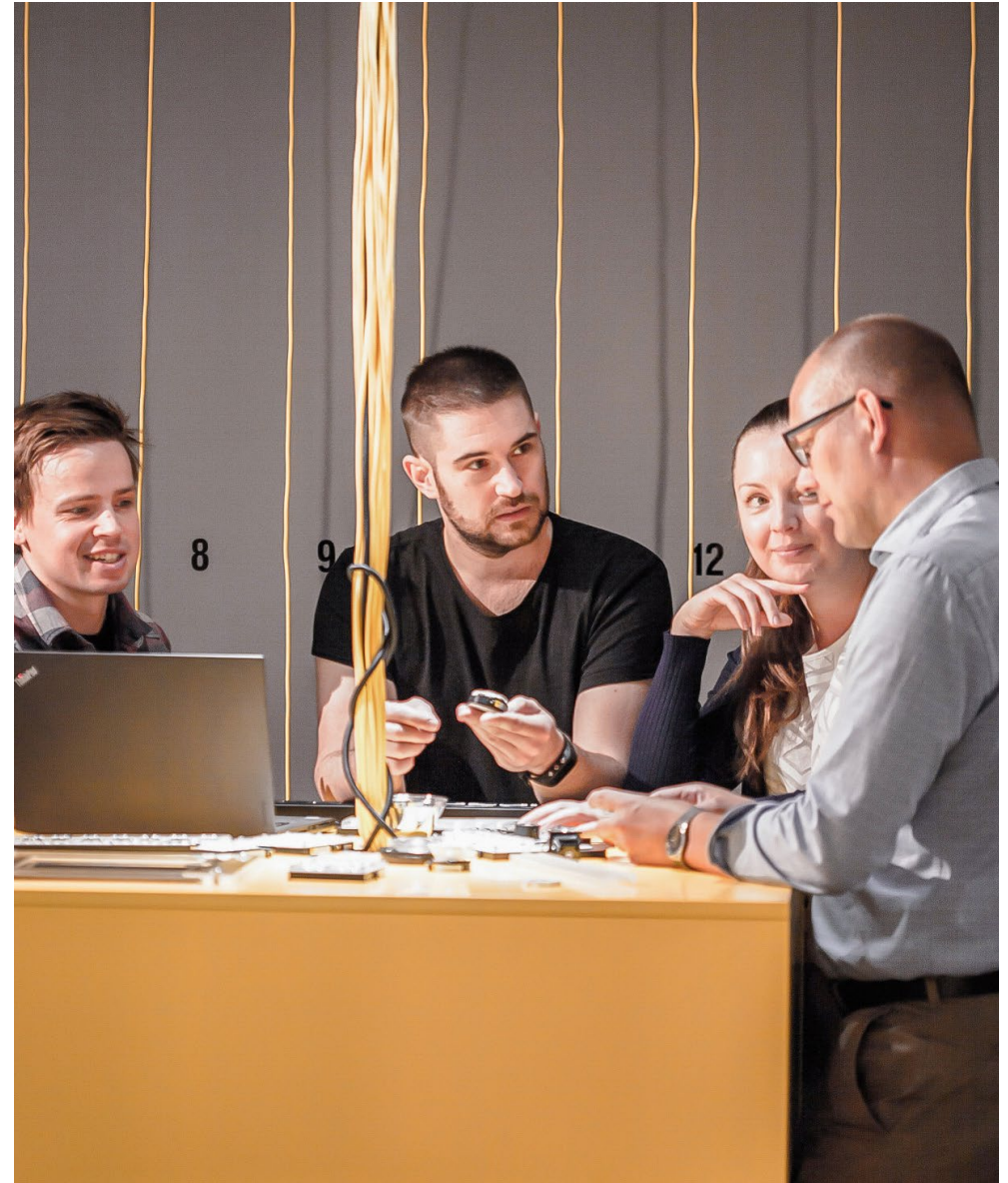
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## Competence development

Competent, innovative and motivated people are key to LEDiL's success. Staying ahead of the competition requires constant development as an organization and individual learning. As a foundation of competence development LEDiL is continuously mapping training needs and listening to employee's aspirations for personal and organizational development. Every employee has a development plan, objectives and a means of how to reach those objectives. LEDiL actively supports employees to improve individual and organizational performance.

## Employee satisfaction

We aim to maintain and develop employee satisfaction continuously. The working atmosphere has been a key focus point at LEDiL. LEDiL has implemented flexible ways of working and a hybrid working method has been adopted with the purpose of serving as a foundation for a positive working atmosphere, wellbeing, and employee satisfaction. An employee satisfaction survey has been organized annually since 2018. In 2023 the survey results indicated that 87 % of LEDiL employees are very or quite satisfied with LEDiL as an employer. The focus is on more systematic communication from management to employees, more training and development activities, and more streamlined project management at departmental level.





# Business ethics and anti-corruption

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## Compliance

We are committed to following all applicable environmental, safety, quality, and business-related laws and regulations. LEDiL code of conduct establishes LEDiL company standards for ensuring safe working conditions, equal and respectful treatment of workers, and environmentally responsible and ethically conducted business operations. The highest standards of integrity are to be upheld in all business interactions enforcing zero tolerance for corruption and bribery.

All LEDiL employees and sales agents have been trained in the code of conduct and anti-corruption, and the training rate is followed and reported in the LEDiL sustainability KPI. Every new employee is trained on these topics during the induction period. To be able to prevent and take actions in case of misconduct against the code of conduct, a Whistleblowing channel was established in 2018. The channel is an externally managed third-party service that enables anonymous reporting for all LEDiL employees and stakeholders.





# Business ethics and anti-corruption

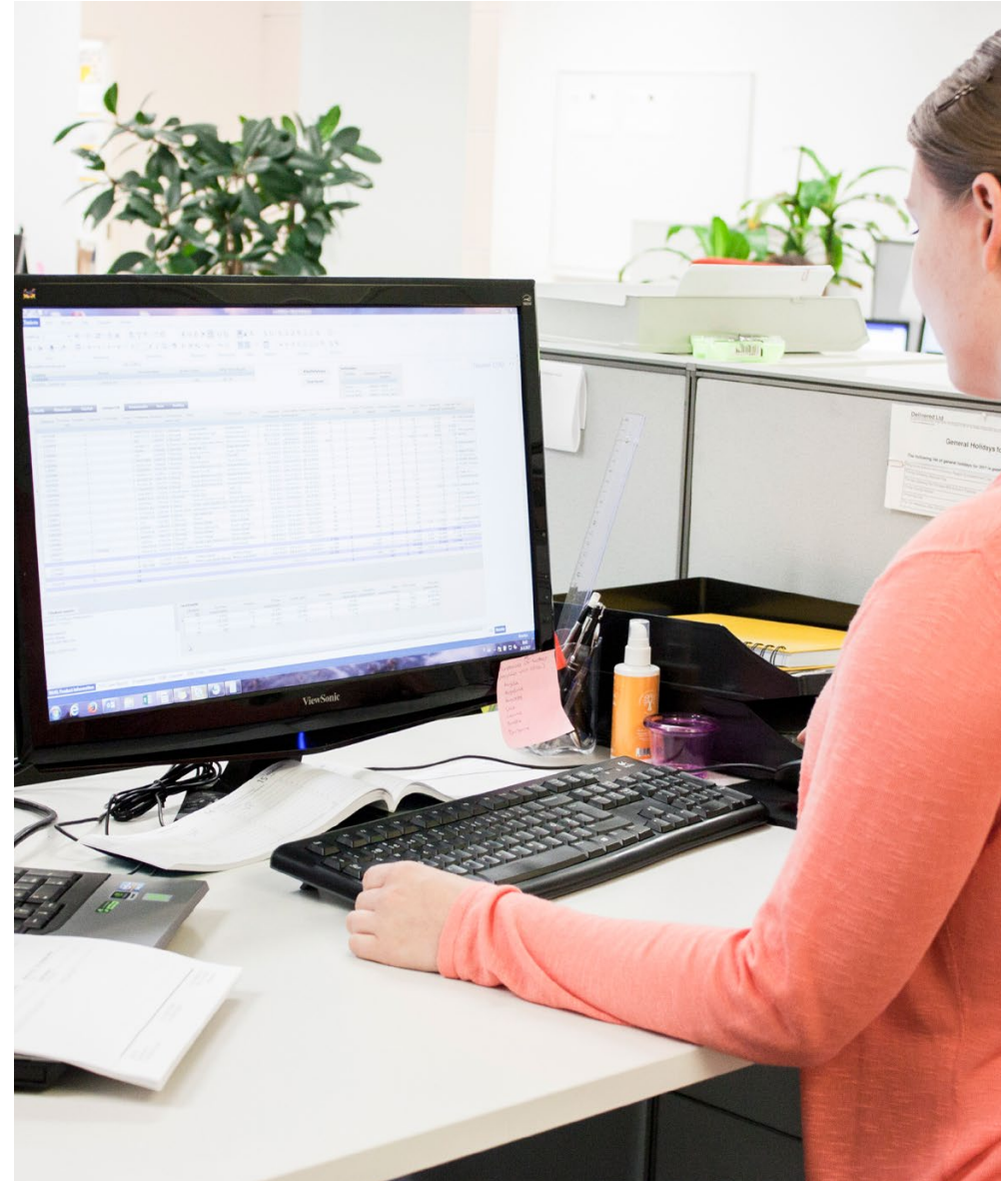
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## Responsible supply chain

LEDiL is committed to conducting its business in a responsible and sustainable way and we expect the same commitment from our suppliers and business partners. By careful selection and evaluation of suppliers and partners, we ensure that quality, human rights, environmental, anti-corruption and other business ethics requirements are met. All suppliers have signed the agreement to LEDiL code of conduct as targeted. During co-operation with the supply chain we evaluate the supplier's operations and compliance with agreed ways of working by on-site audits. Within our supply chain, we prioritise the safe and healthy handling, storage, and disposal of chemicals, which we actively monitor through routine supplier audits and visits. LEDiL and its suppliers are committed to the non-use of conflict minerals.

## Data privacy

LEDiL is committed to protecting the required privacy expectations of personal information of everyone we do business with, including suppliers, customers, consumers, and employees. We carefully safeguard the confidentiality and availability of our proprietary information. We fulfill the requirements of the GDPR data protection regulation which came into force on 25th May 2018.



# LEDiL sustainability KPIs 2023

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7%

employee wellbeing,  
employee turnover

Target: <8%

100%

share of employees who have  
attended sustainability courses

Target: 100%

100%

share of suppliers who have subscribed  
LEDiL code of conduct

Target: 100%

1,53%

employee wellbeing,  
sick leave rate

Target: <1,75%

5191 tons

CO<sub>2</sub> emission  
(scope 1-3)

Target: <7500 tons

# 2024 Outlook: setting our sights on the upcoming targets

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<8%

employee wellbeing,  
employee turnover

100%

share of employees who have  
attended sustainability courses

100%

share of suppliers who have subscribed  
LEDiL code of conduct

<1,75%

employee wellbeing,  
sick leave rate

<60000 tons

CO<sub>2</sub> emission  
(scope 1-3)



**LEDiL**  
perfecting light

