

CONTENTS









- 3 Introduction from the Chief Executive Officer
- 4 Report profile and reporting period
- 5 Company profile
- 6 Stakeholder dialogue
- 7 The four spheres of sustainability activity
- **8** Products and innovations
- 15 Environment and quality
- 20 Responsibility towards employees
- 25 Social commitment
- 28 Imprint

Jadies and fentlemen,

It was German ingenuity that provided the spark for the first automobile. The three-wheeled Motorwagen that appeared in 1886 evolved rapidly into a worldwide success story. In Germany, carmaking became a key industry, one that now provides over 800,000 jobs. In the wake of Dieselgate, however, demand for diesel engines has plummeted, despite the fact that they use less fuel and emit much less CO_2 than their petrol-driven counterparts. Potential buyers have also been deterred by the introduction of diesel bans in more and more city centers. At the same time, faced with campaigns all over the world – ranging from the protests in Germany's Hambach Forest to anti-pipeline demonstrations and school climate strikes – governments are under increasing pressure to take stronger action against climate change.

These developments are significantly accelerating the transformation towards climate-friendly mobility. The future presents challenges for all of us, but it also creates opportunities. Our goal at ElringKlinger is to actively harness those opportunities. Over the years, one of our great strengths has always been to keep thinking ahead rather than rest on our laurels. We have been preparing intensively for this transformation over the last 20 years by diversifying our product portfolio and focusing on new battery, fuel cell, and electric drive technologies.

Our employees are the most important ingredient of our success, the key to our future development. We are what we are today thanks to their know-how, their creativity, their loyalty, and their tremendous commitment. That is why we can look forward with great confidence and with the certainty that our innovative strength will help to shape the future of mobility.

The latest issue of our Sustainability Report highlights the progress made by ElringKlinger over the course of 2018 in its core areas: Products and Innovations; Environment and Quality; Employees; and Social Commitment. Each section describes the challenges ElringKlinger is currently facing, which solutions the Group is pursuing, and what steps we are taking to promote the well-being of our stakeholders and protect the environment.

I hope you enjoy reading our new Sustainability Report.

Sincerely yours,

Dr. Stefan Wolf
Chief Executive Officer

» he future presents challenges for all of us, but it also creates opportunities. «

Dr. Stefan Wolf, Chief Executive Officer of ElringKlinger



REPORT PROFILE AND REPORTING PERIOD

The Group places great importance on the transparent communication of sustainability issues to employees, customers, shareholders, business partners, and other target audiences. With this in mind, ElringKlinger is giving account of all major issues in the form of a Sustainability Report for the eighth year in a row. The report describes the company's performance based on non-financial parameters. The Group refers to its current Annual Report for further financial background information and details regarding the business model, the company's financial goals, and its business performance in 2018.

ElringKlinger already published a non-financial statement at the end of March 2019 that was verified by Ernst and Young Wirtschaftsprüfungsgesellschaft, Düsseldorf, for the legally required disclosure of non-financial information.

In order to avoid repetition between the non-financial statement and this Sustainability Report, reference is made to the statement in certain parts of the report.

Contents and structure

In order to determine the key topics with respect to environmental, employee, and social issues, ElringKlinger conducted a materiality analysis in order to define the important aspects from a CSR perspective, about which this report gives an account. The expert discussions conducted with the Human

Resources, Legal Affairs, Quality, and Purchasing as well as Strategic Communications departments served in particular for this purpose.

Limits of the report

Unless otherwise indicated, the reporting period covers the 2018 financial year (January 1, 2018, to December 31, 2018). The data presented relates to the entire ElringKlinger Group. Equity investments and companies outside the scope of consolidation are not included in this report. The figures presented are rounded to improve readability.

The Sustainability Report is available in German and English. ElringKlinger makes supplementary topics available online.

COMPANY PROFILE

Business model of the ElringKlinger Group

With a pedigree spanning more than 130 years, the ElringKlinger Group has established itself as an independent, globally positioned development partner and series supplier within the automotive industry. Today, the Group offers a broad range of innovative, premium-quality products for vehicles powered by all types of drive system. The company operates with a clear focus on solutions tailored to eco-friendly mobility. Alongside cylinder-head and specialty gaskets, ElringKlinger's portfolio also includes lightweight plastic components and housing modules for the powertrain and vehicle body, thermal and acoustic shielding components, and battery and fuel cell

systems. Beyond the automotive industry, the Group offers cross-industry products made of high-performance polytetra-fluorethylene and various thermoplastics.

Operating as a global automotive supplier, ElringKlinger has a network of production plants and sales offices of strategic relevance. As of December 31, 2018, the Group encompassed 39 production facilities, four sales offices, one logistics center, and one segment operating solely within the area of aftermarket sales. In total, the ElringKlinger Group was comprised of 40 entities at the end of the financial year. ElringKlinger maintains direct lines of contact with the majority of key vehicle

and engine manufacturers. In order to exploit the many benefits of global interaction, ElringKlinger sources raw materials from a number of countries around the globe and has established an extensive network of suppliers for this very purpose. Almost two-thirds of these goods are procured from Germany, China. and the United States.

The Group's operating business is divided into five segments: Original Equipment, Aftermarket, Engineered Plastics, Services, and Industrial Parks. The Original Equipment segment, in turn, comprises several divisions. From an organizational perspective, the other segments correspond to divisions.

590 employees in R&D

10,429
employees were working for the global ElringKlinger

Group at the end of 2018

founded in 1879

Headquartered in **Dettingen/Erms**

INNOVATIVE SOLUTIONS

Percentage of vocational trainees/ apprentices

3.6%

5.1 R&D ratio %

Ratio of performance assessments

70%

45 sites worldwide

STAKEHOLDER DIALOGUE

ElringKlinger maintains a continuous exchange of information and intensive dialogue with various interest groups. The group of stakeholders close to the company includes everyone that is influenced by decisions made or actions taken by the ElringKlinger Group or, by the same token, can themselves influence such decisions.

Our primary stakeholders therefore include our employees, customers, the capital market, and our suppliers. In addition, we maintain close contact with the media, associations and organizations, science, politics, and public authorities as well as with society in general.

Mutual appreciation and a trusting and transparent relationship between the Group and its stakeholders ensure respectful interaction with one another – all over the world. ElringKlinger specifically and proactively seeks to engage with external stakeholders in order to exchange viewpoints and experiences as well as to address controversial topics constructively. After all, managing the company in a trustworthy manner requires that we factor the effects of our business activities on the interest groups into key decisions.

With its listing in the Prime Standard of the Frankfurt Stock Exchange, ElringKlinger satisfies the highest transparency requirements and regularly participates in capital market conferences, roadshows, and trade shows as well as events held by associations.

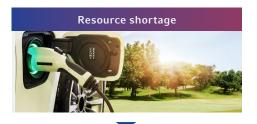
PRIMARY STAKEHOLDERS

SECONDARY STAKEHOLDERS

THE FOUR SPHERES OF SUSTAINABILITY ACTIVITY









Responsible governance

Value management



Compliance











THE BASIS FOR A STRONG CULTURE OF INNOVATION

The pace at which electromobility is progressing has become much more dynamic, fueled to some extent by the current debate over climate change. In parallel, car companies are having to make the transition toward climate-friendly mobility in order to meet statutory requirements and avoid fines. ElringKlinger is actively shaping next-generation mobility and has spent many years focusing on innovative solutions that increase efficiency and reduce emissions. With its far-reaching expertise, ElringKlinger is helping to improve the classic combustion engine. In tandem, the company offers a wide range of solutions for alternative drive systems. Its traditional product portfolio of gaskets and shielding parts is now complemented by products centered on battery and fuel cell technology as well as innovative lightweight structural components such as cockpit cross-car beams.

Expenses relating to research and development (including capitalized development costs) amounted to EUR 87.2 (75.9) million in financial year 2018. This equates to an R&D ratio of 5.1 % (4.6 %), which is within the short- and mediumterm target range of 5 to 6 %. The majority of expenses related to the Lightweighting/Elastomer Technology, E-Mobility, and New Busies Areas divisions.



was spent on research and development in 2018. The majority of these expenses were attributable to the Lightweighting/Elastomer Technology, E-Mobility, and New Business Areas divisions.

	2018	2017
R&D expenditure ¹ (EUR mn)	87.2	75.9
R&D ratio ¹	5.1 %	4.6 %
Capitalization ratio ²	12.7 %	5.9 %
Patent applications	80	69
R&D employees	590	597

¹Including capitalized development costs.

In 2018, ElringKlinger registered 80 (69) property rights for the purpose of protecting its technological expertise and intellectual property. The substantial increase by around 16 % illustrates the Group's excellence in innovation. At the end of 2018, 590 (597) people were employed in the area of R&D. Many of the employees of the R&D department were based centrally at a single location in order to prevent a "brain drain." Its development activities are focused mainly at the German sites forming part of the Original Equipment and Engineered Plastics segments and the US sites near Detroit, Michigan. The other locations are responsible mainly for minor development steps and modifications. The slight reduction in the headcount is attributable to the sale of two subsidiaries in financial year 2018.



ElringKlinger is looking to generate at least 25 % of its revenue with e-mobility and lightweight structural products by 2030.

² Capitalized development costs in relation to R&D costs, including capitalized development costs.

ESTABLISHED EXPERTISE MEETS FIELDS OF THE FUTURE



The core competences of the ElringKlinger Group include sophisticated precision die-cutting, embossing, and forming technologies, functional coating technologies, as well as far-reaching expertise in the area of plastics. Supported by the Group's very own tooling facility, the company has established a solid foundation for product innovation and the steady expansion of its product and service portfolio.

BATTERY AND FUEL CELL — ELRINGKLINGER IS FOCUSING ON BOTH TECHNOLOGIES



The whole world is talking about e-mobility, a term that is primarily associated with pure battery-driven cars. At present, public debate on the future shape of mobility is dominated by battery technology. So far, the potential of hydrogen-based fuel cell technology is not yet widely supported. But does it make sense to focus on just one alternative drive technology for the post-combustion engine period? The fuel cell has many advantages over the battery, but still has to overcome certain hurdles if it is to achieve wider market penetration. When it comes to the choice of technology, ElringKlinger has adopted an inclusive approach to electromobility.

The big debate – Which drive technology will come out on top?

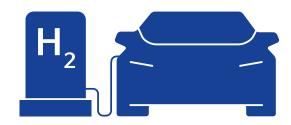
One thing is certain: the future belongs to electromobility. There is simply no way around that given the threat of climate change and the imposition of ever stricter CO₂ limits. What is unclear, however, is which alternative drive technology will prevail in the medium to long term. For some time, the position adopted by German policymakers and the VDA was based on market forces without specifying a particular technology. More recently, however, individual vehicle manufacturers have clearly positioned themselves in favor of battery technology. Nevertheless, ElringKlinger has remained neutral and continues to offer innovative solutions aimed at both the battery and fuel cell markets.

Fuel cell cars also have an electric motor

Let us be clear first of all that cars fitted with a fuel cell drive are also among the electric vehicles, as they are also equipped with a battery. But while a battery-powered vehicle obtains the power it requires from a lithium-ion battery, which has to be recharged again and again, in a fuel cell car, that power is generated "on board." The electrical energy is directly converted into motion by the electric motor or temporarily stored in the battery. The chemical process behind this, in which hydrogen and oxygen are converted into water and release electrical energy, is also known as cold combustion. The exhaust gas of a fuel cell is essentially water vapor.

The crucial factor – total energy balance

What is often ignored in the debate on sustainable mobility is the overall energy balance. Electric vehicles only make sense if all the energy used to drive them comes from renewable



At the end of 2018, there were only around 70 hydrogen filling stations in Germany.

sources. If, on the other hand, that electricity is supplied from a coal-fired power station, nothing is gained at all in terms of ${\rm CO_2}$ emissions. In addition, emissions from the production of batteries or fuel cells must also be taken into account.

Longer range and shorter refueling time

Fuel cell technology has significant advantages over batteries. The duration of a refueling process with hydrogen differs only insignificantly from the refueling of a vehicle with gasoline or diesel engine. Furthermore, hydrogen fueling points can easily be rolled out into the existing network of gas stations. In terms of potential range, fuel cell vehicles are again comparable to those fitted with a conventional internal combustion engine – up to 700 kilometers. With its longer range and shorter refueling time, the fuel cell drive can potentially overcome the main problems associated with battery technology. On top of that, it comes with net zero CO_2 fuel combustion.

Market penetration currently hampered by excessive costs

Despite all the advantages of fuel cell technology, there are some major hurdles to broader market penetration. At present, the main obstacle is cost. The price of a hydrogen car today ranges from EUR 70 to EUR 80 thousand. Due to low production numbers, they are currently much more expensive than most battery-powered models. Besides that, costs are driven up by the precious metals, such as platinum, needed for the fuel cells, and then there is the cost of refueling with hydrogen at public refueling stations – around EUR 9.50 per kilogram in Germany. According to the manufacturers, fuel cell vehicles use between 0.7 and 1 kilogram per 100 kilometers.

Huge disparity in charging infrastructure

Which alternative technology ultimately finds acceptance on the market – the fuel cell, battery, or a completely different form of drive – will depend largely on the availability of a comprehensive refueling or recharging infrastructure. In the case of hydrogen, the number of refueling points is currently very limited. In Germany, there are about 70, but around 2,000 intelligently distributed would be needed to provide a nationwide supply. By comparison, there are already more than 17,000 charging stations nationwide for battery-electric vehicles. That imbalance needs to be addressed by policymakers. The network of hydrogen refueling points is currently being expanded by the operating company H2 Mobility. The goal is to reach 400 hydrogen refueling stations by 2023.

Commercial vehicle sector seen as strong potential market for fuel cell drives

For many industry observers, the future of the fuel cell drive lies above all in the commercial vehicle sector, i. e., trucks and buses. Here at least, there is widespread agreement among experts that this switch is inevitable in the long term. Given its particular strengths, the fuel cell will emerge in this sector as the drive system of choice, especially for large vehicles that transport heavy loads over long distances.

» After the initial ramp-up phase, the fuel cell market will really pick up from 2025 at the latest.«

Dr. Stefan Wolf, Chief Executive Officer of ElringKlinger

Geographical focus on Asia

While battery technology is currently leading the way in Europe when it comes to electromobility, things are somewhat different in Asia. Especially in China, Japan, and South Korea, the main focus is on hydrogen. In some countries, fuel cell technology is being driven by huge government subsidies directed at research. Subsidies are also available to buyers as a way of stimulating consumer demand. The Asian market is particularly interesting for ElringKlinger. The Group is currently involved in more than 20 development projects with local OEMs. There is a great deal of potential in North America, too.

ElringKlinger's wide-ranging expertise in the field of fuel cells

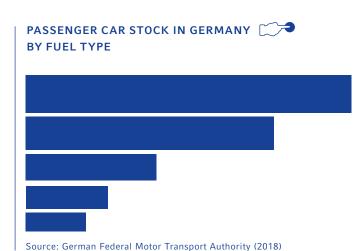
ElringKlinger has played an active role in the development of fuel cell technology for more than 20 years. Over this period, it has consistently built up far-reaching in-house expertise. Initially, the Group focused on manufacturing bipolar plates, the core elements in a fuel cell stack. Today, ElringKlinger has the know-how and production capacity to make complete fuel cell systems, with a focus on low-temperature technology (PEMFC). ElringKlinger can supply fuel cell stacks with an extremely high power density for use in both cars and commercial vehicles.

Fuel cells expected to reach market-readiness from 2025

Given the present obstacles to wider market penetration, fuel cell vehicles are not expected to increase their market share to any great extent in the short term. In the medium term, however, helped by significant economies of scale, the prospects are much better. After an initial ramp-up phase, ElringKlinger believes that the fuel cell market will expand rapidly from 2025 at the latest. The technology is being pioneered above all by Asian vehicle manufacturers, some of which already offer individual fuel cell cars in their portfolio. Initially, at least, the main source of demand for this technology is likely to be the Asian market.

Outlook

E-mobility is arriving faster than expected and with it the question of which technology will lead the way. For ElringKlinger, it is not a matter of picking a winner between the battery and the fuel cell. We believe there are strong arguments for both technologies as we head towards zero-emission mobility. While the battery-electric drive plays to its strengths in urban traffic, the fuel cell drive comes into its own over long distances. In the medium term, not only for ElringKlinger, the fuel cell will play an important role in this transformation process.



RETHINKING - FRESH THINKING - FORWARD THINKING

The diesel scandal, increasingly tough worldwide sanctions for exceeding emissions thresholds, and the impending threat of inner-city driving bans led to a radical RETHINK in society, which has greatly accelerated the trend towards emission-free mobility.

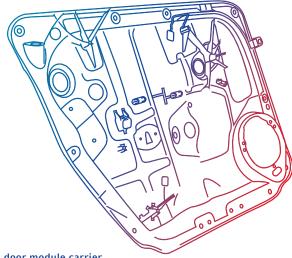
In big cities where the traffic is heavy and fuel consumption is increased as a result of constant stop-start driving, the level of air pollution from car exhaust fumes is particularly high. In 2018, for instance, 57 German cities exceeded the air quality threshold of 40 micrograms of nitrogen oxide per cubic meter of air $(\mu g/m^3)$ on an average annual basis, after 65 cities did so in 2017. There are signs that initial measures to reduce nitrogen oxide are taking effect. But in addition to the nitrogen oxide and carbon dioxide emissions of diesel and petrol cars, particulate emissions (fine dust particles generated by tire, clutch, and brake friction) are particularly dangerous to human health. In Germany alone, according to research conducted by the Max Planck Institute, fine dust pollution can shorten a lifespan by 2.4 years, and around 20 percent of that pollution is caused by the road traffic sector.

In terms of the current trend towards new forms of transport, this means that electric vehicles are no panacea for air quality, although they do significantly reduce the carbon emissions of traffic vehicles. This is because fine dust correlates with the number of vehicles, irrespective of their particular drive system. When the fine dust caused by production and road use through to disposal of a vehicle were all taken into account, the German Ministry for the Environment calculated in 2016 that electric vehicles – at around 80 milligrams per kilometer – were responsible for the highest level compared to petrol, diesel, and hybrid vehicles.

"FRESH THINKING" was therefore clearly needed by ElringKlinger developers in order to place greater focus on the reduction of particulates. The answer lies in diversification of the company's lightweight product portfolio and evaluation of further automotive applications. After all, ultralight components serve to reduce the mass of a vehicle. And, as a rule of thumb, the lower the mass causing the tire friction, the less air pollution caused by particulates. A current analysis by the Fraunhofer ICT and Karlsruhe Institute for Technology (KIT) concluded that reducing tire load by 20 percent can also reduce the degree of wear and tear by 20 percent.

It was back in the early 1990s that the first plastic lightweight component went into serial production at ElringKlinger. Today the Group produces around ten million products annually. ElringKlinger possesses the extensive material competence needed to expand its product portfolio. This includes processing of technical thermoplastics, high-performance elastomers, continuous fiber-reinforced thermoplastics (orango sheets), and

high-tensile aluminum and steel alloys. Drawing on this knowledge and the use of intelligent tool technology, ElringKlinger took an important strategic step in 2015 by developing hybrid components for the vehicle body. At the same time, the company succeeded in making significant improvements to tolerances for length and angular dimensions compared to the other industry solutions available at that time. Fundamentally, the optimal choice and combination of materials is crucial for achieving complex geometries in the production of hybrid components. This also allows



The door module carrier is a hybrid component. It is fully recyclable.

the number of parts to be reduced through multifunctionality and material to be saved, ultimately minimizing component weight. The superior mechanical properties result in better crash and NVH behavior (noise, vibration, harshness, etc.).

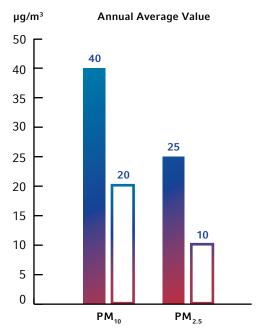
Strong interest in lightweight structural products is reflected in the number of development projects. ElringKlinger already produces lightweight structural components in China, Hungary, Canada, and the USA for makers of both internal combustion engine and new-generation vehicles. In 2018, the Group erected a factory in Chongqing, China, solely for the production of door module carriers. For this component, particularly lightweight and extremely stable composite fiber materials with much better load-bearing properties than conventional plastics are molded to create the required shape, while plastic elements for additional component functions are injection-molded onto the structures in a single process step.

Looking ahead to the future, ElringKlinger estimates that lightweight structural components and e-mobility products will account for over 25 percent of Group revenue in the year 2030. FORWARD THINKING is therefore the order of the day. After all, besides door modules, components such as seating structures, battery housings, or underbody protection for battery-powered vehicles are also conceivable. In addition, the development of hybrid technologies for other industrial sectors is also a promising prospect. In this context, we are looking at other modes of transport, such as the aircraft and shipping industries.

FINE DUST

Fine dust or particulates are fine particles that are so small they can enter the human respiratory tract. A distinction is made between such particles based on their size. For instance, PM₁₀ can reach the bronchial tubes and small airways off the bronchial tubes, while PM_{2.5} particles can penetrate as far as the pulmonary alveoli (or lung cavities). In Germany, fine dust is caused by road traffic, (wood-fired) household burners, power plants, industrial plants and farming. The thresholds for particulates differ markedly from the recommendations of the World Health Organization, which sets a much lower threshold (see graphic).





- ¹ Number of times threshold may be exceeded per year: 35 days
- ² Number of times threshold may be exceeded per year: 3 days

Emissions

Efforts within the Group proved successful in 2018. Despite strong revenue growth, total direct CO₂ emissions were scaled back during the period under review. The volume of heating oil and gas required as well as the average figure of CO₂ emitted by the company car fleet and hired vehicles were scaled back. By contrast, indirect CO2 emissions increased markedly, primarily as the expansion of the global production network pushed the Group's electricity consumption up by 5 %. In relation to Group revenue specifically, the overall electricity requirement increased by 3 %. Furthermore, energy consumption was up due to additional shifts at plants with particularly high levels of capacity utilization. Some of the increase in the period under review was also attributable to the inclusion of air travel; starting in 2018, the figure includes all centrally recorded flight bookings of the sites in Canada, Spain, Mexico, Turkey, and South Korea.

	2018	2017
Total direct and indirect CO ₂ emissions in t	118,300	111,800
CO ₂ emissions per EUR 1 million of sales in t	69.7	67.1
Total direct CO ₂ emissions in t ¹	23,300	24,800
of which direct CO ₂ emissions from gas, oil, engine test benches, etc. in t	22,200	23,500
of which direct ${\rm CO_2}$ emissions by the vehicle fleet in ${\rm t^2}$	1,100	1,300
Total indirect CO ₂ emissions in t	94,900	87,000
of which indirect CO ₂ emissions from electricity in t ³	87,500	80,600
of which indirect CO_2 emissions from air travel in t	7,400 ⁴	6,400 ⁵

 1 For the parent company ElringKlinger AG 12,200 (12,700) t of direct CO $_2$ emissions arose from gas, oil, engine test benches, etc. Direct CO $_2$ emissions by the vehicle fleet amounted to 800 (1,200) t.

² Emissions are calculated by multiplying the annual mileage of vehicles by the CO₂ emissions stated by the relevant vehicle manufacturer. The fleet of company vehicles includes all vehicles at ElringKlinger sites in Germany. The figures for rental vehicles also comprise beyond that the rest of Europe, the USA, and Canada.

 3 For the parent company ElringKlinger AG, 28,400 t of indirect \mbox{CO}_2 emissions arose from electricity.

⁴ Air travel relating to the locations in Germany, Austria, Switzerland, France, and Hungary, as well as centrally recorded flights to the sites in the United Kingdom, the USA, Canada, Spain, Mexico, Turkey, and South Korea. Air travel relating solely to ElringKlinger AG will be determined separately from 2019 on.

⁵ Air travel relating to the locations in Germany, Switzerland, France, and Hungary, as well as centrally recorded flight bookings of the sites in the United Kingdom and the USA.

Climate protection is a job to be tackled by the economy as a whole; it requires the prudent and economical use of natural resources – both by companies and by individuals.

Energy consumption

ElringKlinger's energy requirements are attributable not only to manufacturing processes but also to supply media such as heating, cooling, ventilation, and compressed air systems as well as electricity for lighting. The Group's total energy consumption amounted to 312,800 (313,100) MWh in 2018. Absolute energy consumption per EUR 1 million in sales revenue fell to 184 (188) MWh.

The analysis of electricity consumption reflects to a large extent the degree of a company's capacity utilization. In 2018, therefore, the most significant increase in consumption levels was attributable to the companies based in North America. With ISO 50001 matrix certification, which ElringKlinger applies at its European production sites, the Group has intensified its overall examination of energy flows and set up a comprehensive metering infrastructure at individual production facilities. In this context, the Group identified potential for improvement in 2018 and implemented optimization measures. They included the immediate identification and elimination of compressed air leaks, the use of intelligent lighting concepts, and the more consistent shutdown of production facilities that



Charging stations for electric vehicles were installed at various ElringKlinger sites in 2018.

were temporarily not required. Additionally, the Group uses wind power and solar plants as well as combined heat and power (CHP) units at some of its sites. The advantages of CHP units include parallel electricity and heat generation and a degree of independence from power suppliers. Furthermore, the consumption of fuel and heating oil was scaled back by around 18 % due to the sale of the Hug Group and the conversion of a production plant to gas. Generally milder weather conditions recorded during the winter months also proved beneficial.

	2018	2017
Absolute energy consumption (electricity, gas, and other energy sources) in MWh	312,800	313,100
Sources/ III MWII	312,800	313,100
of which electricity consumption in MWh	198,700	193,400
of which gas consumption in MWh	105,100	108,700
of which heating oil and fuel in MWh	9,000	11,000
Absolute energy consumption per EUR 1 million in sales in MWh	184	188
Electricity consumption per EUR 1 million in sales in MWh	120	116



The use of LED technology offers energy savings of up to 80 % compared to conventional light sources.

Biodiversity

ElringKlinger's operating activities had no impact on nature conservation areas and biodiversity in 2018. In the majority of cases, ElringKlinger builds its production facilities in designated business and industrial parks, usually in close proximity to the premises of large automobile manufacturers and suppliers. The company is therefore able to respond to fluctuations in demand and cut down on emissions and costs associated with time-consuming transport activities. For this reason, this specific aspect is not evaluated as part of a management approach.

Water and wastewater

Water consumption rose by around 10 % to 223,066 (202.216) m^3 in 2018. About half of this increase was attributable to the first-time inclusion of the South African subsidiary. The year-on-year rise was also due, in part, to the purchase of a phosphatizing unit that requires relatively large quantities of water for the cleaning of components.

ElringKlinger is committed to using water as sparingly as possible. The task of monitoring water usage is performed at a decentralized level within the production plants themselves, which includes tailored optimization measures at each site. The same applies to the issue of wastewater management. Water consumption across the Group is regularly monitored as part of ISO 14001 certification. Employees are also encouraged to use water sparingly and comply with legal regulations on wastewater disposal.



In 2018, the wind turbine in Redcar, Great Britain, produced 1,460 MWh of electricity.

Conflict resources

ElringKlinger avoids using materials extracted or produced in an environmentally or socially unacceptable way in contravention of human rights. Conflict resources include tantalum, tin, tungsten, and gold. Among other things, forced labor is applied to extract such resources. In addition, they are often used to finance armed conflicts. Among the most affected conflict and high-risk areas are countries that are the scene of armed conflicts such as civil wars, that are in an unstable post-conflict situation or have weak or no state governance, and that systematically violate international and human rights law.

The Group requires very small quantities of such commodities to manufacture its products. ElringKlinger maintains close contacts with suppliers when it comes to procuring raw materials and is aware of the origins and sources of the commodities it purchases. Additionally, ElringKlinger expects all its suppliers to operate in full compliance with its Group directives.

EKOS - MUCH MORE THAN A STANDARDIZED PRODUCTION SYSTEM

In 2018, ElringKlinger began introducing a standardized, Group-wide production system known as EKOS (ElringKlinger Operating System). The process optimizations this supports are improving yield and quality, while also driving a central change process as regards internal collaboration.

The project was launched in response to the rapid expansion of the ElringKlinger Group, which currently has 39 production sites in 21 countries. The factories vary widely in terms of size and production range, and their production processes are at very different stages of development; working methods and process flows also differ widely according to region.

EKOS records and evaluates operational processes with the aim of standardization and continual improvement; best practices are determined, simplified, and defined. Employees undergo specific training, and a computer-based process environment ensures absolute transparency. Overall, the project is bringing about high and consistent process quality across the Group, while improving internal collaboration.

Referenzmuster

Project staff at one of the four regional pilot plants are ready for the implementation phase.

A comprehensive system of project principles is establishing a clear framework in the process, including a culture of open and respectful feedback, motivation through the acknowledgement of results, leadership by example, clear ownership of processes, the honoring of commitments, and a unified source of information.

An international and cross-functional project team will oversee implementation over a period of several years. Ultimately, though, everyone who works for the Group will be affected and is asked to play an active part. At first, the initiative will be implemented at four pilot plants on different continents, where the defined methods, tools, and processes will be tested and optimized. The second step will involve roll-out to the various regionally allocated satellite plants.

» KOS is more than merely an economic step forward; it is a fundamental system of values based on our corporate vision and mission. «

Matthias Wurst, Head of EKOS, ElringKlinger AG



The symbolic EKOS-House stands for an attractive company in which employees help to raise satisfaction levels for themselves, customers, and other stakeholders by means of continual improvements. Sound processes, effective product launches, appropriate yields, and target-oriented leadership are the cornerstones of stability for the structure. Meanwhile, a system of key indicators ensures that the goals set by the company are achieved.

REGENERATIVE ENERGY Fossil fuels

Fuel Page SUSTAINABILITY WIND POWER Battery RESOURCES HYDROGEN Environmental protection

The transition from fossil fuels to renewable energy is widely regarded as one of the defining issues of the 21st century. It is driven by an awareness of the finite nature of our planet's resources and of the air pollution caused by our use of oil, coal, and natural gas. Experts have predicted, for example, that our reserves of oil will be exhausted at some point in the second half of this century. At the same time, however, burning fossil fuels releases carbon. Instead of remaining safely locked away in the soil and oceans, it enters our atmosphere – in the form of carbon dioxide and methane, for example – and accelerates the process of global warming.

Resetting the global energy system

As a result, climate scientists are now urging us to rethink every aspect of our global energy system. This transformation is usually divided into four key objectives: firstly, to expand renewable energy production as a way of reducing greenhouse gas emissions; secondly, to develop and install high-capacity energy storage systems to manage peaks in consumption; thirdly, to use each source of energy more efficiently; and, last but not least, to become more energy-sufficient, i.e., cutting back on the amount of energy we use to put us on a more sustainable energy footing.

Regulation – a key driver of the mobility revolution

Alongside electrical power and heating, mobility plays a central role in the transformation of the global energy system. Currently, around 94% of all the vehicles produced worldwide are powered solely by an internal combustion engine. However, this proportion will fall over the coming years. By 2030, it is expected that internal combustion engines will be fitted in just over half (52 %) of all new vehicles. In recent years, faced with increasingly stringent regulations, the risk of financial penalties, and a growing number of bans on diesel and petrol-driven vehicles (e.g., in Norway from 2025, India from 2030, and France from 2040), more and more manufacturers have announced their intention to develop models with alternative drive systems. These are gradually finding their way onto the market.

Battery-powered electric vehicles – the environmental benefits

At present, the market for alternative drive systems is dominated by hybrid and pure-electric vehicles. In terms of environmental impact (based on our current power-generation mix), electric vehicles are superior to those with internal combustion engines – despite the fact that it takes a relatively large amount of energy to produce each battery. According to a 2017 study by the European Commission and Trier University of Applied Sciences, for example, battery-driven electric vehicles produce between 31 % and 46 % less CO₂ if we include

the emissions from producing the battery as well as those from driving. Furthermore, irrespective of these particular figures, the benefits of running a pure-electric vehicle are even greater if we factor in potential improvements to the current powergeneration mix. Many countries are scaling up their renewable energy capacity. In Germany, for example, the federal government has set itself the goal of increasing the share of renewable energy in the overall power mix from the current figure of around one third to 80 % by 2050.

Fuel cell technology – a zero-carbon alternative

There is a zero-carbon alternative – the fuel cell. If the hydrogen used in a vehicle driven by fuel cells is produced using electricity generated at night – from wind farms, for example – when demand is low, it would be possible to run the vehicle without creating any CO₂ emissions at all. The system works by feeding hydrogen to the fuel cell. Two hydrogen atoms then react with one oxygen atom, generating the energy needed to drive an electric motor. Only the reaction product water results as 'exhaust gas'. Furthermore, as with the internal combustion engine, the point at which the energy is produced can be decoupled from the point of consumption because hydrogen can be stored. Another advantage of fuel cell drives is that it takes just a few minutes to refuel.

As we can see, the technology for developing practical forms of mobility based on renewable energy is already there.

REGISTRATION BANS FOR NEW VEHICLES WITH INTERNAL COMBUSTION ENGINES





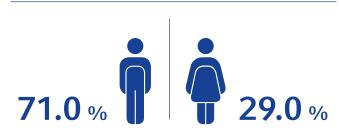
Trends in workforce structure

For the first time in the company's history, more than 10,000 people were employed at ElringKlinger in 2018 with the aim of shaping the mobility market. As of December 31, 2018, the Group headcount stood at 10,429 (9,611). The structure of the Group's domestic and foreign workforce is described in the 2018 Annual Report on page 48. The proportion of female employees rose slightly to 29.0 % (28.4 %). By contrast, the average age fell slightly to 38 (2017: 39). As in the previous year, the Group-wide workforce structure is very balanced. The majority of employees are between 30 and 50 years of age. Fewer than 20 % are over 50. At 7.3 %, the staff turnover rate in the year under review was significantly lower than in the previous year (2017: 9.6 %). Foreign production sites affected by significant utilization pressure experienced particularly high churn rates.

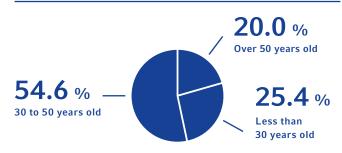
ElringKlinger's human resources strategy is based on a farsighted, long-term approach, as can be seen from the number of employees with permanent contracts. As a percentage of the entire workforce, the year-end figure for 2018 was 86.5 % compared with 85.8 % at the end of 2017.

Employment	2018	2017
Absolute number of employees	10,429	9,611
of which men	71.0 %	71.6 %
of which women	29.0 %	28.4 %
Breakdown by age group		
less than 30 years old	25.4 %	26.2 %
30 to 50 years old	54.6 %	53.4 %
over 50 years old	20.0 %	20.4 %
Staff turnover rate	7.3 %	9.6 %
Percentage of part-time employees	4.6 %	4.0 %
Employees on permanent contracts	9,016	8,212
· · · · · · · · · · · · · · · · · · ·		





The proportion of female employees rose slightly in the 2018 reporting year to 29.0% (28.4%)



In 2018, the average age at ElringKlinger stood at 38.

Firmly established value system

In a globalized world, it is important for companies to meet their social responsibilities. ElringKlinger has its own Corporate Code and every employee is personally responsible for applying it. As part of that Corporate Code, ElringKlinger undertakes to uphold international human rights. At the same time, the Group expressly rejects child labor and forced labor of any kind. In addition, ElringKlinger opposes discrimination on the grounds of gender, race, skin color, religion, age, ethnicity, disability, or sexual orientation. There were no violations of the Corporate Code in 2018.

Health care management and occupational safety

ElringKlinger has introduced forward-looking policies on health and occupational safety to meet the needs of its workforce. All guidelines and principles are firmly anchored within the Group's occupational health and safety policy, which is binding on all employees.

In the year under review, the number of accidents at work resulting in staff absences of more than three days rose to 304 (248). The relative accident frequency per 1,000 full-time employees was 29.1 (25.8). The main factors here were a substantial increase in the workforce and temporarily high levels of capacity utilization at some Group locations. ElringKlinger strives to avoid accidents at work altogether. Measures such as Group-wide safety standards, regular safety briefings, and on-site health and occupational safety inspections are designed to actively prevent workplace accidents as much as possible. In the event of an accident, the cause and steps leading up to the incident are carefully examined. Existing safety standards and risk assessments are then modified accordingly in order to maintain a consistently high level of protection.

Occupational Safety

	2018	2017
Average number of sick days per		
employee	9.2	9.9
Work-related accidents leading to more		
than 3 days off work	304	248
1,000-employee incident rate	29.1	25.8

Initial and further training

In-house apprenticeships and further training are a key element of human resources management. They enable the Group to train skilled workers in target areas and build up exactly the skills and knowledge base it requires. Patterns of work are changing rapidly, and companies – including ElringKlinger – need to find or produce a greater number of skilled employees. To avoid future shortages, ElringKlinger has introduced a series of targeted development measures in the form of initial and further training.

Diversity and equal opportunities

Throughout the ElringKlinger Group, diversity is about recognizing, appreciating, and including different perspectives, experiences, and skills at every level of seniority and in every organizational unit. For the company, it goes without saying that all employees should be treated equally and with due regard for their individuality. The Group prizes cultural diversity and sees it as one of the factors in its success. Different social, cultural, and linguistic backgrounds produce different mindsets and perspectives. In turn, this can boost the capacity of global companies to innovate. Appreciation, tolerance, and respect for one another are always the main focus of day-to-day interactions.

ElringKlinger is actively committed to inclusion and integration. As a global organization with production centers and sales offices in 21 countries, it supplies customers all over the world. Against this backdrop, it promotes intercultural contacts – including transfers of knowledge between highly qualified employees who are occasionally assigned to locations in other countries – and organizes regular intercultural training.

ElringKlinger promotes a culture of integration that recognizes the skills and individual talents of people with disabilities. Severely disabled staff and employees with health impairments receive targeted support and special protection at ElringKlinger. Besides the Works Council, the company's Equal Opportunities Officers address the concerns of affected staff whenever necessary. In 2018, a total of 212 (188) people with severe disabilities were employed within the Group. For many years, ElringKlinger has also worked closely with various social organizations such as BruderhausDiakonie.

ElringKlinger does not tolerate discrimination of any kind. This policy is set out in ElringKlinger AG's Code of Conduct, which is binding on all employees. A commitment to gender equality and equal opportunities for all staff is also enshrined in the code. The Group is determined to continuously increase the proportion of women in leadership roles and has set out a number of targets in its Corporate Governance Declaration. The defined targets to be achieved by June 30, 2022, are 10 % at the top leadership level, and 15 % in the second leadership tier below Management Board level.

Diversity and Equal Opportunities

2018	2017
212	188
967	947
93	87
15	8
65	63
482	388
	212 967 93 15 65

¹ These figures apply only to the company's German sites.



When it comes to competing for the "Best Place to Work" award, ElringKlinger offers attractive solutions for balancing career, family, and private life.

Reconciling professional, family, and private life

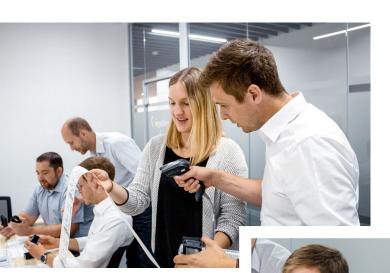
Increasingly, prospective employees are choosing to work for companies that offer a good work/life balance. ElringKlinger provides its employees with a host of options to configure individual working hours to suit their own particular circumstances: home office, flexitime arrangements, and part-time employment contracts, to name but a few of the choices available. These flexible working-time models are very popular with young families and are increasingly sought after. They also help build a deeper sense of commitment to the company.

Care of dependents

Care situations frequently arise suddenly and unexpectedly, and the scope and duration of the required care are often hard to anticipate. ElringKlinger realizes that employees may have care responsibilities that affect their work/life balance and provides appropriate support in consultation with the service provider WDS.care GmbH. This company has developed a special consultation and care concept that helps employees reconcile their career and care responsibilities. Staff are offered regular consultations with care professionals for this purpose.

ELRINGKLINGER OPERATIONS ACADEMY

The ability to work successfully and profitably rests on a thorough understanding of the main operating processes. A project team led by Marcus Nicolai (Project Engineer Factory Planning & Smart Manufacturing) has integrated the processes in the ElringKlinger Group into a business simulation and developed the Operations Academy.



Picture above: The Operations Academy follows an interdisciplinary, simulation-based approach.

Picture below: Marcus Nicolai, Project Engineer (Factory Planning & Smart Manufacturing) and Project Lead of the Operations Academy.

Mr. Nicolai, what is the rationale behind the Operations Academy?

NICOLAI — Over a period of just a few years, ElringKlinger has undergone very strong growth. A number of new production sites have been opened worldwide. In this context, a number of processes have been adapted, new employees recruited, and organizational structures revised. At system level, ElringKlinger has now implemented an ERP system at almost all production plants. As a result of new workflows, a full understanding of operating processes has to some extent been lost, as the relationships between and effects of individual steps in the workflows ceased to be transparent. The focus of the Operations Academy is therefore on three functions that are essential for successful operating processes: process planning, production management, and production planning.

What is the Operations Academy exactly?

NICOLAI — The Operations Academy is a training program tailored to ElringKlinger processes. What makes it special is the interdisciplinary, business simulation-based approach. In order to produce the best possible training program for our employees from the three domains, these specific domains were directly involved in its development. The IT function, which provided the ERP system for the Operations Academy, also had a very important role within the project. The cross-functional approach with regard to the project enables us to now offer very innovative, practical, and application-oriented training.

The training courses are clearly structured and divided into two modules. The first objective is to create a basic understanding of how an automotive supplier works and which processes are particularly important. This takes place in a business simulation and deepens participants' understanding of the operating process's main roles, responsibilities, and workflows, including the interfaces and interactions between them. Secondly, we transfer what has been learned to the ERP environment. Participants will see why and how the ERP system helps them to carry out their tasks. They will understand the relationships between the physical process and the ERP system. The aim of the simulations is always the same: to deliver the right parts, in the right quantity, and of the right quality to the customer at the right time – just as in real life.

How does this create added value for the ElringKlinger Group?

NICOLAI — In many cases, there is a limited understanding of the overall operating process, the significance of interfaces between the ERP system, and the production process as well as of valid and up-to-date ERP system data. Our aim here is to broaden our participants' perspective significantly. The training also raises awareness of the consequences of certain actions, as training courses often neglect interdisciplinary and comprehensive viewpoints. In summary, we want our training participants to understand that they can only be successful as a team.

Mr. Nicolai, thank you for your comments.

POTENTIAL LEADER PROGRAM 2.0 - EKDRIVE

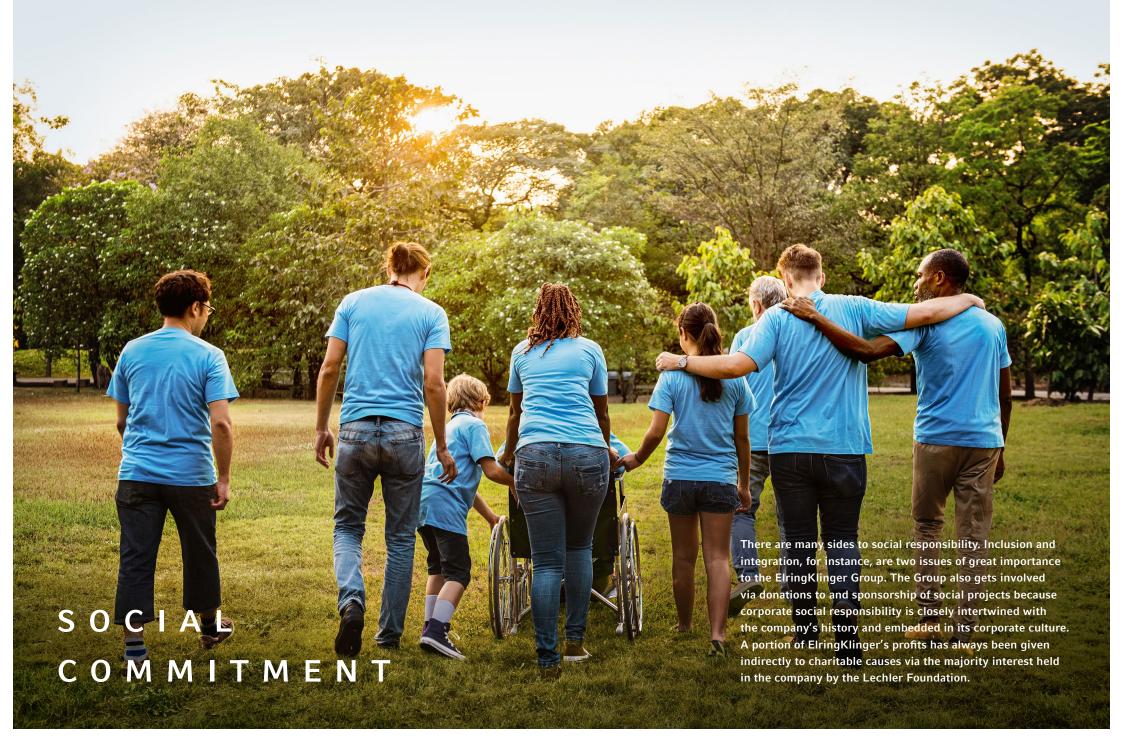


Our leadership development strategy is designed to meet the Group's future personnel requirements. This makes it one of the most important elements of human resources management. Every two years, since way back in 2008, a committee has nominated highly qualified employees from the Group's headquarters for our Potential Leader Program, a period of intensive training lasting just over 12 months. "To date, we have been able to develop a total of 73 potential leaders at our sites in Germany. Many already hold management positions or are involved in specialized tasks," explains Dr. Lucy Tengbeh, Director Training & Development. The time and cost of running such a program should not be underestimated, but as an investment it pays off in the long term. By recognizing the strengths of individual employees and helping them to progress, the Group hopes to keep them motivated and strengthen their loyalty to the company.

The success of the concept prompted the Group to further develop the program globally. ElringKlinger will now run dedicated potential leader programs under the name EKDrive in each of its three core regions (North America, Asia-Pacific, and Europe). Employees from every area will be able to apply with a view to boosting their career within the Group. A panel of experts will select the 36 participants for each program on the basis of transparent suitability criteria. Besides ensuring diversity and broad international representation, the panel will focus on securing the Group's future personnel requirements in different management areas.

EKDrive participants will complete a total of four modules in English to help them develop leadership skills and familiarize them with other leadership tools. The modules reflect both the Group's strategy and ElringKlinger's value system. Participants are also given an opportunity to discuss broader Groupwide issues in a more relaxed setting during informal meetings with board members and senior managers. ElringKlinger is very keen for employees to develop and actively display an open attitude to social commitment. As such, over the course of the program, all participants are expected to organize a sustainability project that offers social benefits.

"It is always fascinating to see how participants develop at a personal level in just one year between the first module and the final presentation," observes Dr. Tengbeh. Based on previous experience, the program's success also depends on the composition of the teams. Through teamwork, participants can gain a different perspective on complex tasks – globally, regionally, and locally.



INCLUSION AND INTEGRATION

ElringKlinger is committed to a diverse society and social responsibility. Inclusion and integration are thus two causes that the company has long held close to its heart. ElringKlinger firmly believes that, for many people, being shut out of the world of work also means being shut out of society, as it forces them to sacrifice their financial independence and ability to live a full, self-directed life. ElringKlinger focuses very clearly on the strengths and potential of disabled people rather than on their supposed shortcomings. Markus Siegers, Chairman of the Works Council at ElringKlinger AG, explains in an interview how the Group makes inclusion and integration part of its everyday work.



Mr. Siegers, many employers shy away from employing people with disabilities. What is ElringKlinger's approach?

SIEGERS —Questions about a person's ability to perform, likelihood of falling sick or even protection against unfair dismissal often arise in the context of employing someone with a disability. As it happens, we at ElringKlinger have found that many people with disabilities can perform very well because they are highly motivated and really throw themselves into their day-to-day work. We currently have some 150 employees with severe disabilities in Germany alone. Of course, we have to make some minor adjustments to create the best possible working environment for them. For instance, a colleague with a hearing impairment will need completely different modifications than a wheelchair user, and both will present different requirements in terms of addressing their disability. But experience has shown that the relevant investments pay off very quickly for the company.

At ElringKlinger, living with reduced mobility is no barrier to a successful career. (Thomas Buck, Reengineering) You've been working with BruderhausDiakonie for several years now. What experiences from this partnership are you able to share with us?

SIEGERS — ElringKlinger has been working together with the social welfare agency BruderhausDiakonie for over 20 years now. Our common aim is to open the door to the world of work for people with disabilities and people who, because of social or employment issues, aren't or aren't yet able to get into the "regular" job market. The duties we've assigned them have included cleaning, neutralizing, and filling boxes with ElringKlinger products for dispatch at our headquarters in Dettingen/Erms. It was not until 2017 that ElringKlinger expanded the business relationship when it opened a new warehouse. This new building was needed in response to a steady increase in the amount of packaging work in the Spare Parts division. The individual activities, such as incoming goods checks, preassembly and packaging, are routinely tailored to suit the particular abilities of each employee. For us, the partnership with BruderhausDiakonie is far more than a purely commercial business relationship. And this is why, in 2014, we cemented this relationship based on trust by signing a ten-year contract.

Were any other projects implemented in 2018 that could come under the category of "Inclusion?"

SIEGERS — Yes, in actual fact, many sites ran their own individual projects. And one of these is particularly noteworthy: A team of colleagues at our Turkish site in Bursa used its development and production expertise to make electric wheelchairs, working together with a young man with paraplegia. Alongside its purely practical objective – giving people with mobility problems a better quality of life – the project also brought significant added value to everyone involved in another way too: The open and intensive dialogue provided a new perspective and improved mutual understanding – especially amongst our non-disabled colleagues in respect of those with disabilities.

It looks like the 21st century will be judged by how it handled the waves of refugees. What experience have you gained to date in terms of integrating refugees?

SIEGERS — Besides the big issue of inclusion, we're also focusing our attention very much on integration, of course. So far, we've had some good experiences as regards integrating colleagues with a migration background. The watchword

"intercultural communication" mustn't be underestimated. After all, if two colleagues have a different body language and way of behaving, this can cause misunderstandings between them, which we want to avoid as far as possible. One good example of this is undoubtedly how well Alaa Najjar has been integrated. Mr. Najjar, who grew up in Syria and fled the country in 2015, already had a degree in Computer Engineering from his homeland. Following a six-month introductory course, he completed vocational training at ElringKlinger, which he concluded successfully in 2018. He was subsequently taken on as part of a temporary arrangement.

Thank you very much, Mr. Siegers, for sharing your thoughts.

was struck most by the realization that it is not the disability itself that causes difficulties for those affected, more so the attitudes of other people. The real barrier is the one in the head of society at large. «

Nursun Kurt, colleague at the Bursa site, ElringKlinger



A win-win situation: ElringKlinger employees at the Turkish site have made three electric wheelchairs, thus helping people with disabilities to get on better in their daily lives. This proved to be a very special project for the ElringKlinger team.

