

OUR ASPIRATION.

The Schaeffler Group presents its achievements, ambitions, and goals for responsible corporate management for the second time in its Sustainability Report for 2017.

GERHARD AXMANN
SUPPLIER DEVELOPER



SEBASTIAN WIELGOS
PROJECT MANAGER, "INNOVATION
PROJECTS" DEPARTMENT



MATTHIAS BEHR
HEAD OF SUPPLY ENGINEERING



QIAN WANG
VICE PRESIDENT SUPPLY
CHAIN MANAGEMENT



In the theme of "Our aspiration," Schaeffler uses brief reports from its four strategic fields of action to show how its employees are implementing and living sustainability.

Responsibility in the Supply Chain

SETTING STANDARDS.

SUSTAINABLE FROM THE START: PUTTING SUPPLIERS TO THE TEST

Responsibility begins here, in our company. But is this also where it ends? For Schaeffler, the answer is a clear no. The company is taking action to ensure social and ecological standards are upheld at its more than 34,000 suppliers worldwide. For Gerhard Axmann, this is a full-time job. He takes a close look at new suppliers, sometimes making unexpected discoveries.

Gerhard Axmann is a qualified mechanical engineer who has worked for the company since 1989. Since 2004, he has worked in central purchasing in the division of Corporate Supplier Development Quality, where he has been responsible for the development of suppliers of turned, milled, and extruded parts.



Taking a Closer Look

Our network spans the globe: 34,000 suppliers from around 80 countries provide Schaeffler with the products, processes, and services that the company needs to produce its products. Gerhard Axmann gets involved when new suppliers are to be added to this network. At the age of 56, he knows that Schaeffler depends on good cooperation with its suppliers to be successful. With many of them, the company has maintained multiyear partnerships. Doing this successfully depends decisively on making the right first choice. “Since we are suppliers ourselves, we know that it is not always easy to meet customers’ demands,” Axmann explains. “We must nevertheless be strict with our own suppliers, too, because we have demanding standards and norms when it comes to meeting obligations for sustainability. This requires a good mix of monitoring and trust toward our suppliers.”



In addition to requirements for the quality of products, processes, and services, or for project management for a potential business partner, the selection of new suppliers must also consider aspects of sustainability. Does the supplier observe the environmental and social standards

that Schaeffler has specified in its Supplier Code of Conduct? Does the supplier work with data and information carefully? Axmann and his colleagues find answers to these questions in a multistep selection process that includes an on-site assessment of suppliers in what are called initial assessments (formerly potential analyses).

Following a supply request – from a Schaeffler site, for example – the application process begins. Potential suppliers are accepted into the selection process only after they have sent or approved requested certificates as well as various contractual documents to our quality and environmental management systems and thus signaled their interest in working together. The application then leads to the initiation of an on-site assessment, which is where Gerhard Axmann takes over. For the engineer, this means packing his bags. He travels around 100 to 120 days a year. In order to thoroughly inspect new business partners, he visits the production sites directly. Things don’t always turn out as planned. “Unfortunately, especially earlier, we sometimes also experienced dangerous and almost bizarre things,” he recalls. “In the production site of a supplier of forged components, we once witnessed how little consideration was being given to occupational safety. The employees were wearing sandals, used no ear protection, and transported the glowing pieces of steel from one forming press to another without any kind of protective measures. We had arrived only for an initial discussion, which we then immediately ended.”

Today, Axmann and his colleagues increasingly often make use of the records of such initial discussions. If a business area needs a new supplier, a purchaser or a supplier developer is sent to carry out a first, structured quick assessment, or pre-assessment. This allows them to get an overview of the supplier. And it saves a lot of time, since a comprehensive assessment, the initial assessment, takes at least two days. In the process, Axmann goes through an extensive questionnaire, examines processes and documentation, and visits the entire production site. “We have eyes and ears everywhere,” he says with a grin. “And we don’t limit our discussions to our main point of contact but also speak with employees from the various areas of expertise. This allows us to find out how the company really works.”

In the evaluation that follows, Axmann gives a score of one to ten for each topic area that was assessed. A ten means that the supplier can completely meet requirements. If this is not the case in one area, a plan of action is subsequently prepared and then worked through.

Transparency

The supplier is thus given the opportunity to improve. For strike-out questions, a score of less than ten points means the preliminary end of the selection process. In other words, the process is placed “on hold” until the open issues have been remedied by immediate action. These include the question of whether the supplier can guarantee that water, air, and soil will not be polluted or negatively impacted by its business activities.

Observing social and ecological criteria all along the value chain is an important part of corporate responsibility for Schaeffler. These aspects are therefore specified in the company’s guiding principles and its Supplier Code of Conduct. Companies that sign the Code commit to respecting human rights, treating the environment responsibly, and making efforts to support the safety and health of their workers.

On the one hand, sustainable supply management means recognizing risks in business relationships early on. And on the other hand, it is also a response to growing expectations from outside the company – national governments are making increasingly strong demands of companies to take responsibility for what happens outside their own plants. We have thus been providing reports for years in accordance with

requirements about conflict minerals, enabling our customers to fulfill the legal requirements they face. As part of their own sustainability programs, Schaeffler’s customers also increasingly require proof of how their precursor products were made.

In order to make supplier evaluations more comparable to each other and achieve more transparency in the supply chain, Schaeffler works together with other companies in our industry, for example, with members of the working group “Sustainability in the supply chain” of the German Association of the Automotive Industry. In this working group, sustainability experts from producers and suppliers develop standardized, industry-specific sustainability questionnaires for on-site assessments, among other things.

Gerhard Axmann sees many advantages to this cooperation: “We all face similar challenges in selecting suppliers. This is why it is important that we address structural problems together and learn from each other.” This might not only make his work easier but also create better conditions for the people and the environment in production countries.



“For us, responsibility doesn’t stop at the factory gates.”

GERHARD AXMANN
SUPPLIER DEVELOPER

Green Products

TRANSFORMING MOBILITY.

ON THE PATH TO THE DRIVE TRAIN OF THE FUTURE

How will we get around in the future? And how can mobility be as environmentally friendly as possible? Schaeffler already has answers to these questions and is setting standards with its innovative product portfolio. One example is its electric wheel hub drive, which is enabling entirely new mobility concepts. Sebastian Wielgos and his team advanced the development of this drive train over the course of five years, bringing it to series production.

Sebastian Wielgos studied electrical engineering and information technology in Mannheim and Munich and has worked as a project leader in the “Innovation Projects” department at Schaeffler in Herzogenaurach since 2013.



Pioneering Work

Developing a new technology from the very start, being part of the process as an idea becomes a concept, and, finally, a product ready for market – that’s what Sebastian Wielgos loves about his work. The thirty-two-year-old is a project manager in the “Innovation Projects” department of the “Innovation and Applied Research” unit at Schaeffler. In the unit, which was founded quite recently, Wielgos and his team get exactly what they need: lots of freedom to do real pioneering work. “The path to a new technical solution is never clearly laid out beforehand,” Wielgos explains. “It is the result of many creative minds observing current trends and using them to develop new solutions.”

One of these trends is sustainable mobility. Above all in cities and urban centers, how people get from A to B in a way that is environmentally friendly is becoming increasingly important. “Even early on, it was clear to us that we wanted to play a part in shaping urban mobility,” Wielgos says. Over the last five years, Wielgos has worked with his colleagues to develop an innovative electric wheel hub drive. What makes it special: The entire drive technology of a car – including the electric motor, power electronics, brakes, and cooling systems – has been compactly built into the rim of a wheel. This saves space and enables entirely new spatial concepts. For example, for “people movers” – autonomously driven minibuses that may be deployed in urban spaces in the near future.

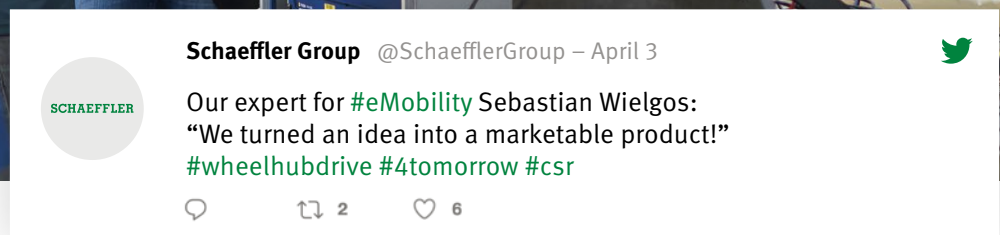


“The wheel hub drive is the key to entirely new vehicle concepts. It has the potential to fundamentally change mobility in cities.”

SEBASTIAN WIELGOS

PROJECT MANAGER, “INNOVATION PROJECTS” DEPARTMENT

Ready for Series Production



The advantages have been further confirmed in a study that Schaeffler carried out in cooperation with the carmaker Ford. The study showed that the wheel hub drive affords passengers in a vehicle the size of a Ford Ka as much interior space as in the larger Ford Fiesta, which has a conventional internal combustion engine. The wheel hub drive is entirely electric. If the batteries are charged with green electricity, the car can be operated in a way that is climate neutral.

After years of intensive development, Wielgos and his team handed off the wheel hub drive project to the newly founded E-Mobility business division in 2018. This division is responsible for bringing the drive to series production. The road for Wielgos has been a long one. Again and again, he and his team had to optimize individual components of the drive and work meticulously to find the best solution. “In this innovation project, we had to balance different parameters such as performance, efficiency, or weight. But, in the end, we were able to find the right balance.”

Now, Wielgos – who grew up in Herzogenaurach – is already thinking ahead: about an electric drive for lightweight vehicles, for example, or visionary topics like urban air mobility. “No one says that urban mobility has to take place only on the streets.” For Schaeffler, sustainable mobility offers many opportunities. That’s why the company is researching how fuel cells can be used for various mobility applications. “With our knowledge in the area of material and surface technology and our competence in production technology, we can make a contribution to the development and supply of innovative components and systems for fuel cells with increased efficiency,” Wielgos says. This certainly won’t be the last time that this pioneer develops a new idea to market readiness.

Commitment to Climate Protection

PROTECT THE CLIMATE.

MULTITALENTED FOR MORE ENERGY EFFICIENCY

Our aspiration aims high: Schaeffler intends to continuously improve its own energy efficiency. This is a goal Matthias Behr is working toward. The engineer and his team have built a total of four cogeneration plants over the past two years at the production sites of Herzogenaurach and Homburg. The power plants are not only capable of producing electricity and heat but are also used for cooling. They are thus one of the most efficient ways of supplying Schaeffler sites with energy.

Matthias Behr studied heating, ventilation, and climate engineering in Regenstauf. He has worked at Schaeffler since 2000, and since 2013, he has been Head of Supply Engineering (Building & Processes) in Corporate Construction, Energy Management & Maintenance in Herzogenaurach.



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Triple Benefit



“Cogeneration units are truly multitalented.”

MATTHIAS BEHR

HEAD OF SUPPLY ENGINEERING

“Cogeneration units are truly multitalented,” says Matthias Behr. For the last four years, Behr, an engineer, has worked at Schaeffler as Head of Supply Engineering (Building & Processes). In this role, he has spent the last two years directing the construction of four cogeneration units (also called combined heat and power units, or CHP) in Herzogenaurach and Homburg. “What’s innovative about our CHPs is that we don’t just use them to generate electricity and heat but also cold water that we use to cool our buildings and production facilities,” he explains with excitement. This triple benefit is made possible thanks to the principle of cogeneration, which links the production of power, heat, and cooling. In the process, the heat generated in a CHP is used, among other things, to operate what are called absorption chillers. These are used in turn to cool office and production buildings at the three production sites. “In this way, we were able to increase the security of our energy supply and also replace some of the existing cooling units that used much more energy,” Behr happily reports. “That makes complete sense not only in terms of efficiency but also for business.”

The CHPs were put into service in Herzogenaurach and Homburg at the end of 2016. It was in Herzogenaurach that Matthias Behr and his team conducted the first studies in

2014 to determine the feasibility and profitability of on-site CHPs. “The positive results of our studies convinced everyone. Between 2016 and 2017, we then installed two units on-site.” Pretty fast – especially if you consider that no less than 8,300 meters of heat pipes and 5,600 meters of cold-water pipes for cooling had to be installed, and that the buildings being connected to the system had to be transitioned from steam supply to hot water supply. In order to supply the buildings in Herzogenaurach, these pipes carry as much as 155,000 liters of water an hour in the heating system and 459,000 liters of water an hour for cooling operations. That is approximately as much as 333 50-meter swimming pools.

Another reason the construction was challenging for Matthias Behr was the need to ensure that all connected production systems would be provided with energy. An outage in the energy supply would have resulted in a production stop that would have then been very costly. “But the team was fantastic in how they planned and worked,” he says. “Everything worked out seamlessly.”

 Interactive graphic about the CHP available in the online report:
www.schaeffler-sustainability-report.com/2017/chp

Climate Goal

The new units are impressive even from the outside: a bright building with ten futuristic-looking reservoirs on one side. Inside, the buildings house state-of-the-art technology. “Thanks to their use for cooling, the units achieve an efficiency rate of more than 87%,” Matthias Behr reports. This high degree of efficiency confirms that the technology operates extremely efficiently in comparison to the conventional forms of generating power.

This kind of modern and efficient energy supply is an important building block in Schaeffler’s climate strategy. It’s obvious that large production sites use a lot of energy – which is why Schaeffler believes it has the responsibility as a global manufacturing company to find solutions for dealing with climate change. Yet the operation of cogeneration units is just one of many steps that Schaeffler is taking to reach the

climate goal it has set for itself. By 2025, it intends to reduce its emissions by a total of 360,000 t of CO₂ in comparison to the base year of 2015. Other measures also contribute to reaching this goal – for example, the introduction of comprehensive energy management or the networking of machines by means of Industry 4.0 technology so that they work even more efficiently.

Matthias Behr knows, “We are also engaged with other energy generation technologies and carefully assess which technologies make sense for which production sites. For example, it’s easy for me to imagine that we will more heavily employ renewable energy in the future – perhaps the same kind of photovoltaic systems you find on the roofs of private houses. This technology offers a lot of potential.”



Outside the CHP in Herzogenaurach, charging stations can provide electric vehicles with green energy from municipal sources.

Diversity

LIVE DIVERSITY.

INTERNATIONAL WORK ENVIRONMENT IN HERZOGENAURACH

In a globalized world, diversity and internationality are true factors for success. They make companies more innovative and help them attract new talents. That's why Schaeffler actively encourages international exchange among its employees and supports them in moving from one location to another. Qian Wang came to our company headquarters in Herzogenaurach from China – an assignment full of contrasts.

Qian Wang completed a master's degree in business administration at Soochow University in China. Since 2015, she has worked at Schaeffler in Herzogenaurach as Vice President Supply Chain Management in the Engine Systems business division.



Experience

From Taicang, near the metropolis Shanghai, to quiet Herzogenaurach. Romantic Bavarian timbered houses instead of skyscrapers. A population of 23,000 instead of 24 million. Yet Qian Wang didn't take long to decide when the opportunity presented itself to go to Germany for a number of years. "I was confident that it would work out well," Wang says. As Vice President Supply Chain Management in the Engine Systems business division, she supervises 17 employees. She quickly felt at home in Germany.

"My new superiors supported me from the start and organized meetings with other international colleagues. That was really valuable, since it allowed us to network among ourselves and exchange experiences," the forty-year-old says. The website of the international network in the company intranet, "Schaeffler CONNECT," was also helpful to Wang for getting settled in Herzogenaurach and getting to know other expats.



Qian Wang at the team meeting in special machine construction at the Erlangen-Frauenaurach site, where Schaeffler's "New Work" concept has already been implemented.

For Schaeffler, the advantages of having a diverse workforce are obvious. International employees bring different perspectives and approaches to solving problems to the company and support a management culture based on participation. And what's more: Many of the company's customers are internationally oriented. Having wide diversity among our employees facilitates access to these global players and helps us find new markets. Schaeffler profits from the different experiences and diverse knowledge of its employees when it comes to innovation, as well. Studies show that mixed teams are more innovative and successful than homogeneous ones.

In 2017, a total of 369 employees took advantage of the possibility, as Qian Wang did, to go abroad for up to five years. Whether an employee is posted abroad depends on their technical expertise, their personal interests, and the needs of each respective department. Expats who come to Germany are supported by our Talent Mobility Europe Team, made up of employees from our human resources department who personally advise and support the expat and any family members who have come along. This includes, for example, applying for residency and work permits, or finding suitable accommodations and schools for the children.

A Change in Perspective

For Qian Wang, Schaeffler is familiar terrain. She has been working for the company for more than 15 years at the Chinese Taicang site, which is located about 60 kilometers from the heart of the Shanghai megalopolis. It's a hotspot for German companies. In addition to Schaeffler, around 180 other companies have settled in Taicang. And with them, many Germans. "Even before my time in Herzogenaurach, I visited Germany many times and had many German colleagues in China," Wang says. What she hopes to get from her time in Bavaria is, above all, a fresh perspective and a new way of looking at both her field and the company where she has worked for so long. What does she find especially unique about her German colleagues? "Germans are always very thorough and consistent," she says with a grin. Maybe that's why Wang was able to win over her colleagues with her clear agenda. "In the first months, I mostly listened and tried to gain the trust of the team. Of course they all didn't know me yet, and they wanted to know how I think and what my plan is for the next few years." Later, Wang presented her vision to the team, with concrete projects and goals. That was the cornerstone for the good, trusting cooperation in the team. Looking back, she says, "My advantage is that we Chinese are very flexible and tolerant and, if necessary, always have a plan B. Germans and Chinese people complement each other excellently – that's what I've learned from my experience."

It's been three years since Qian Wang came to Herzogenaurach. Her advice to colleagues interested in working abroad is to make sure they have the support of their own family. "That's the basic prerequisite." Also important: flexibility and the desire for a challenge. "If you're afraid of new things, you'll have a hard time abroad." For Wang, her time in Germany has absolutely been a valuable experience – and one that she will talk about for a long time.



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Schaeffler Group @SchaefflerGroup – March 28



Our #Expat Qian Wang: From Shanghai to Herzogenaurach. 24 million vs. 23,000 people. #diversity #4tomorrow #csr



“For us, diversity means recognizing different points of view, experiences, and skills – and utilizing them to create business success.”

QIAN WANG

VICE PRESIDENT SUPPLY CHAIN MANAGEMENT