

WACKER

Sustainability Report
2017/2018

CREATING
TOMORROW'S
SOLUTIONS



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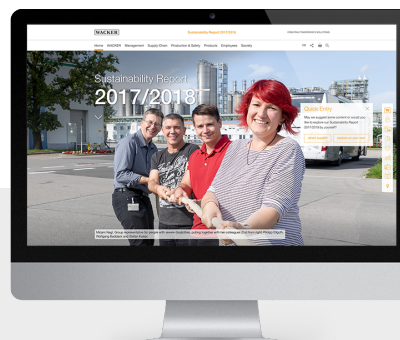
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This report has been created from online content that offers additional interactive features.

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GRI Index &
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WACKER is a global company with state-of-the-art specialty chemical products found in countless everyday items. Our portfolio includes more than 3,200 products supplied in over 100 countries.

Johannes Baumer from Burghausen's plant fire department is on the go in an environmental measurement vehicle. Thanks to its integrated lab equipment, he can collect data on site and send it to the Environment department and authorities.

Key Performance Indicators

GRI 102-7

WACKER at a Glance

€ million

Results / Return

	2018	2017	2016
Sales	4,978.8	4,924.2	4,634.2
EBITDA ¹	930.0	1,014.1	955.5
EBITDA margin ² (%)	18.7	20.6	20.6
ROCE (%)	5.9	7.5	6.4

Financial Position / Cash Flows

Net financial debt ³	609.7	454.4	992.5
Capital expenditures ⁴	460.9	326.8	338.1
Depreciation and amortization	-540.4	-590.4	-618.0
Net cash flow ⁵	124.7	358.1	361.1

Research and Development

Research and development expenses	164.6	153.1	150.0
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Employees

Personnel expenses	1,231.5	1,198.0	1,101.2
Employees (December 31, number)	14,542	13,811	13,448

Workplace Safety

Occupational accidents per 1 million hours worked	2.9	2.8	3.0
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€ million

Air

CO₂ emissions⁶

Direct (kt)

Indirect (kt)⁷

NO_x nitrogen oxides (t)

Non-methane volatile organic compounds (NMVOCs) (t)

Total dust (t)

Water use (thousand m³)

Waste (t)

Energy (GWh)

Electricity consumption

Heat consumption

Primary energy use (total)

2018

2017

2016

1,194

1,478

1,810

860

284

227,510

182,750

5,178

3,120

5,703

1,239

1,606

1,860

880

278

197,430

161,820

5,460

3,505

6,055

1,277

1,588

1,970

890

515

207,930

152,720

5,199

3,827

6,405

¹ EBITDA is EBIT before depreciation and amortization.

² Margins are calculated based on sales.

³ Sum of cash and cash equivalents, noncurrent and current securities, and noncurrent and current financial liabilities.

⁴ Capital expenditures excluding acquisitions.

⁵ Sum of cash flow from operating activities (excluding changes in advance payments) and cash flow from long-term investing activities (before securities), including additions due to finance leases.

⁶ CO₂ emissions are measured as per the Greenhouse Gas Protocol (GHG Protocol: "A Corporate Accounting and Reporting Standard"), published by the World Resources Institute and World Business Council for Sustainable Development. Scope 1: direct CO₂ emissions. Scope 2: indirect emissions from the consumption of purchased energy (converted into CO₂ equivalents for purchased electricity) based on national electricity mixes. For the purposes of sustainability reporting, the Group's direct CO₂ emissions also included intra-plant traffic emissions at our sites, emissions generated during biological wastewater treatment, and the emissions of the emergency power units used during the shutdown of the Alz canal at the Burghausen site.

⁷ One of our environmental targets concerns total dust emissions. We are reporting on these emissions for 2016 for the first time (calculated retroactively to 2012, the initial year of our dust-related environmental objective).

About this Report

GRI 102-1 | GRI 102-10 | GRI 102-45 | GRI 102-46
GRI 102-50 | GRI 102-52 | GRI 102-54

Wacker Chemie AG's sustainability report explains how the Group balances economic aspects with environmental and social responsibility. Published in English and German, our online report is also available as a printable PDF file. The facts and figures given in this report refer to fiscal years 2017 and 2018.

Unless otherwise stated, our statements apply to all business divisions and sites around the world, as well as to every subsidiary in which WACKER is the majority shareholder.

The Amsterdam and León production sites were included in the reporting of environmental indicators in 2018 for the first time.

In 2017, WACKER relinquished its majority stake in Siltronic AG. For the sake of comparability, the figures published in this report for both fiscal 2017 and fiscal 2016 exclude data on Siltronic as a former division.

The information on our Group structure and financial position was taken from WACKER's 2017 and 2018 annual reports. To be as up to date as pos-

sible, we have a section in our Goals chapter to cover future topics from 2019 onward (editorial deadline: June 1, 2019).

Defining Key Topics

This report offers an honest and comprehensive account of sustainability at WACKER for the benefit of our customers, business partners, suppliers, shareholders, analysts, non-governmental organizations and authorities, as well as our employees and neighbors at our various sites. We established the main contents through ongoing dialogue with our stakeholders.

We conducted a survey of stakeholders and top management in 2018. We used the survey to determine which sustainability topics stakeholders and top management consider to be important for WACKER. The survey results led to a materiality analysis. This serves as a basis for specifying the contents of the sustainability report and reviewing and updating our sustainability strategy.

Reporting Criteria

Our reporting is based on the Sustainability Reporting Standards issued by the Global Reporting Initiative (GRI). A special index refers to the pages that contain information on the individual disclosures.

This report has been prepared in accordance with the GRI Standards: Core option. It also takes account of other aspects that relate to WACKER's main sustainability issues. We had the GRI Materiality Disclosures Service – in which GRI Services reviewed that the GRI content index is clearly presented – and the references for Disclosures 102-40 to 102-49 aligned with appropriate sections in the body of the report.

For further details on WACKER's commitment to sustainability, please visit www.wacker.com/sustainability.

Our next sustainability report, which covers the period 2019/2020, is scheduled to appear in 2021.

Barrier-Free Version

This report's feature about inclusion is available as an easy-to-read, barrier-free version. The PDF about this article has a barrier-free design. We have added subtitles (in English or German) to the films accompanying the inclusion feature to enable the deaf to follow what's being said.

The contents of this report apply to men and women alike even if gender-specific words ("he" or "she") are used for simplification.

Introduction by the President & CEO

GRI 102-14

Dear Reader,

We are going through a period of major political and economic risks at present. In spite of the challenges that we face, we think and act in a sustainable manner. Our approach is described in our new sustainability report.

We have been implementing our strategic goal of focusing even more strongly on sustainability since 2018, when we launched our “WACKER Sustainable Solutions” program. It turns the spotlight on issues such as greater use of renewable raw materials and the development of sustainable product innovations. In 2018, our portfolio grew by including 120 new products and applications. Here is a recent example: a line of dispersible polymer powder enables the production of powder-form interior wall paints – they are biocide-free, low-emission, and easily mixed with water.

Without thermally conductive silicones, electromobility would be impossible. The batteries in electric vehicles get very warm during recharging and operation. This heat must be dissipated to avoid a malfunction or even a fire. We have launched a series of products here, and automakers are using them for battery cooling.

The future belongs to biotechnology: it develops new drugs, makes our diet healthier, and protects the environment. We combine our chemical expertise with biotech know-how and understand how to use Nature’s toolbox. We are confident that chemistry will become increasingly “biologized.” This is because application opportunities are far from exhausted. We see huge potential here and are investing in production and new technologies.

Here are two recent examples: at León in Spain, we started producing cysteine, a natural amino acid, for the food and pharmaceutical industries in December 2018. At our new site in Amsterdam, just as at our sites in Halle and Jena, we use micro-organisms to produce pharmaceutical actives for tomorrow’s medicines.

Solar energy is the most environmentally friendly and cost-efficient energy source worldwide, and the market for high-value solar cells will continue growing. We are focusing resolutely on polysilicon for monocrystalline solar cells.

Our employees are crucial to our innovative strength and sustainability. The focus here is on acquiring skills and knowledge. Last year alone, our employees participated in more than 15,000 advanced training measures.



Dr. Rudolf Staudigl
President & CEO of Wacker Chemie AG

In this regard, the safety of our employees, plants and processes is our top priority. In September 2017, there was one incident that affected us deeply. Our new US polysilicon site in Charleston reported a hydrogen explosion. It was caused by an unforeseeable technical defect in a compressor. Part of the facility was severely damaged. The key point for us is that no one was hurt. Given the difficult situation, our employees did a splendid job. Even though production in Charleston was halted for a long time, all our employees there were kept on. We see that as part of our corporate and social responsibility, which, in turn, is a key aspect of our WACKER culture.

We are doing everything humanly possible to prevent a similar incident from ever recurring. Although we have been recording fewer reportable workplace accidents than the German chemical-industry average for several years, we still have not achieved the goal we set ourselves regarding occupational accidents with workdays missed. We aim to make improvements in this area, too, and continue to firmly implement our occupational safety programs.

Our workforce values WACKER as an employer. We conducted a poll of our employees worldwide. The outcome of our 2018 survey was that employees identified very strongly with their employer. 82 percent of our employees took part in the survey – a record number.

We are doing a lot to keep things that way. For instance, by enabling our employees to achieve a good work/life balance. We have adopted a family-friendly policy – which has been praised not only internally, but beyond, with the Bavarian government having presented WACKER with its “Successful. Family-Friendly” award.

In this report, you can read about how we joined “Familienpakt Bayern” (Family Pact Bavaria). We helped found “Umweltpakt Bayern” (Bavarian Environmental Pact) some considerable time ago and have remained a committed member ever since. WACKER will continue to play its part to make the world a more sustainable place to live in.

Munich, Germany – July 2019

Sincerely,



Dr. Rudolf Staudigl
President & CEO of Wacker Chemie AG

Making the Most of Your Potential

In 2018, the Bavarian state government commended WACKER for its exemplary policy of workplace inclusion. But how does inclusion reveal itself in everyday working life? Here, four WACKER employees give an account of how they make the most of their potential despite a disability. It is not always easy for them, but they take pleasure in their work and thus overcome both small and large hurdles.

It was a gut feeling that led Philipp Ellguth to pursue a training course to become a chemical laboratory assistant. And his instinct was right: to this day, he works in the lab with great motivation. Back in 2003, he was the first severely disabled trainee to be hired as part of an integration agreement at WACKER. This agreement means that every year, at least two young people with disabilities have the chance to train at Wacker Chemie.

“People with certain limitations don’t just have deficiencies, but also great potential.”

Philipp Ellguth, Laboratory Technician



Prior to that, he had attended a business school that did not focus on math, physics or chemistry. “The training was a difficult phase,” recalls Ellguth

– not because of the deformities on both of his hands, but due to the gaps in his scientific knowledge.

However, he had gotten used to persevering from an early age – he may have had to practice a bit more than other children, but then he mastered how to hold things as well as everybody else. He had to go the extra mile at the start of his training, but things got easier in the second year and, in the end, he graduated with flying colors. Ellguth later completed advanced training to qualify as a lab technician.

Today, he works in Technical Marketing at WACKER SILICONES and is the deputy representative for severely disabled employees. Colleagues with disabilities find him easily accessible because he has an open and approachable demeanor, which makes them feel understood very quickly. During these encounters, Ellguth has repeatedly noticed that “people with certain limitations don’t just have deficiencies, but also great potential.” That is why he wishes that “people would trust more and not be so skeptical.” His advice to those concerned is to not hide behind their handicap. He himself is a good example of what someone can achieve despite a disability: “I have a safe job at a great company. It wasn’t an easy journey but my training and job have had a very positive effect on my life.”



Philipp Ellguth wishes people would trust more and not be so skeptical – and nobody should hide behind their disability.

Seemingly Minor Things Have a Great Effect

“Inclusion in Bavaria – We Work Together” is the name of the emblem that WACKER received from the Bavarian state government in early 2018. On presenting the award, Bavarian Undersecretary Johannes Hintersberger explained that “Wacker Chemie AG shows how an inclusive working environment operates, and is therefore a shining role model, which will hopefully encourage many other employers to follow suit.” But what is so special about the “inclusive working environment” at WACKER? In Ellguth’s eyes, what’s special is that there isn’t really anything special. Like himself, many colleagues with disabilities work without any special aids – and where aids are necessary, they are provided as naturally as a PC.

Mirjam Nagl is Group representative for people with severe disabilities. Together with her colleagues Philipp Ellguth, Stefan Kaiser and Wolfgang Baddack, she ensures that colleagues with disabilities get just the support they need to perform their individual jobs without the red tape. It is usually inconspicuous extras that make a difference. “It is often small things that can make life difficult,” explains Nagl.



Mirjam Nagl knows that it is often small things that can make life difficult and that can likewise make life easier.



“It is often small things that can
make life difficult”

Mirjam Nagl, Group Disability Liaison Officer

Someone who has just suffered from a slipped disc may need a desk chair with an adjustable neck support or an electrically adjustable desk. As representatives for people with severe disabilities, Nagl, Ellguth, Kaiser and Baddack are likewise the right people to contact at the Burghausen site when it comes to such seemingly minor things.

“My 10 Percent is My 100 Percent”

There is a highly dedicated contact person for people with impaired eyesight: Stefan Kaiser. He was born with a reduced visual aptitude of 10 percent. Anyone interested in understanding what this is like can perform a little experiment: “Take a pair of binoculars, turn them around, and then look through them. I see shapes and colors, but all very far away – that’s why I need various aids to help me in my work. What I see isn’t blurry – it’s normal. Put differently: my 10 percent is my 100 percent.”

It all started in 1990, when Kaiser began his commercial training at WACKER. Back then, there was something quite special about being the first visually impaired employee doing the training – using his own computer equipment. “At the time, the HR staff, employee representatives and representatives for employees with severe disabilities didn’t know what challenges someone like me would encounter in everyday office life. They embarked on the experiment,” remembers Kaiser. “Thanks to open communication, we always found a suitable solution.” His aids at the time were a 20-inch monitor and a PC that were paid for by the employment agency. Magnification programs did not exist yet; other aids were extremely expensive. “Anything customized for disabled individuals incurred a four-digit surcharge. Unfortunately, that remains true to this day,” states Kaiser regretfully.



Stefan Kaiser's reduced visual aptitude of 10 percent was still enough to launch a successful career.

“This fact, along with my goal of improving my personal work situation and making the difficult path easier for colleagues in similar situations, were what motivated me to persevere,” says Kaiser.

“Thanks to open communication, we always found a suitable solution.”

Stefan Kaiser, Systems Engineer

He was really able to get going on these goals after he moved from the commercial department to WACKER IT, where he has been working as a systems engineer since 1997. In this role, the 46-year-old was recently responsible for the groupwide roll-out of Windows 10. In addition to many other tasks, he makes sure blind or visually impaired colleagues have optimally equipped workplaces. Kaiser’s aim is for them not to endure what he did: sitting bent forward over his desk for years in order to make out charts, images and words. “That was exhausting,” he recalls.

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So he set about designing and implementing a system that makes computer work easier for people with low visual aptitude. This includes software that varies the size of the monitor image with a single click – while blue markings help locate the ever-evasive cursor. Additionally, a document camera projects printed documents onto the screen with a single click. The system is rounded out with a text-to-speech function that can be turned on or off as required.



Stefan Kaiser uses a software that varies the size of the monitor image with a single click.

Over the years, Kaiser put this system together with components available on the market and refined it. There were some setbacks, of course, but he was able to overcome them with the support of his supervisors. He completed the system in 2016 and has since been working with it himself. What is more, other WACKER employees with reduced visual aptitude use this innovation as well. WACKER is a supportive employer, handling disabilities in an open manner and keeping an eye on the aids available on the market, making the required work equipment available to each employee. “It’s not just that work has become sim-

pler for me,” says Kaiser, “I now work much more efficiently.” He also uses his expertise to actively support Nagl and her colleagues as a representative for employees with severe disabilities as regards workplace inclusion.

Actively Involved Despite Acute Back Pain

Wolfgang Baddack joined these representatives in fall 2018. With over 32 years of professional experience, he works as a deputy shift leader for WACKER SILICONES at the Burghausen site. “I have to struggle with several disabilities myself. That’s how I came to talk with the representatives. Their work really impressed me and got me thinking,” he remembers. “The support provided by the representatives for employees with severe disabilities motivated me to become involved myself and stand for election as a deputy representative.” He has meanwhile attended several seminars to familiarize himself with the topics, so that he can competently advise employees with disabilities.

Based on his own painful experience, Baddack is an expert as regards back pain. Fifteen years ago, after several slipped discs, he experienced severe pain, especially in the cervical spine and shoulders. “Heavy physical work was part of my everyday working life for many years,” he reports. “Today, there is a lot of automation – but we still have to be careful to lift and carry things in an ergonomically correct and healthy way.” He instructs his 20-strong team in this as well. He managed to get his own

suffering under control with acupuncture against disc pain and routine back exercises. He still regularly receives massage and osteopathy treatments as a preventive measure.

“The support provided by the representatives for employees with severe disabilities motivated me to become involved myself.”

Wolfgang Baddack, Deputy Shift Leader

His back pain was so serious that Baddack received what is legally referred to as “equivalent status” in Germany, ranking him equal with severely disabled people to a large degree. This means that the same regulations apply to him in the workplace, e.g. workplace-planning aids and special protection against dismissal. In Germany, decisions on equivalent status are made by the Federal Employment Agency (relevant webpage available in German only).

Overcoming Communication Barriers

Thomas Seitz, who works as a chemical laboratory technician at WACKER POLYMERS, largely gets by without aids specially designed for his disability. In the lab, he analyzes dispersible polymer powders and redispersions, for example; in the pilot plant, his tasks include conducting spray tests. “I enjoy



Wolfgang Baddack campaigns for healthy backs.

my job,” he says, “because my work varies in the lab and in the pilot plant, and I am always on the move. My disability doesn’t pose any obstacle.”

What disability? You have to look twice to see Seitz’s hearing aid. He lost his hearing when he was six years old. He calls this a “fortunate” circumstance, because he was able to hear and learn to speak his native language up until starting elementary school. He can also recognize sounds such as traffic noise, birdsong and thunder. Thanks to this “late deafness” – which actually affects some 150,000 people in Germany – he can lipread very well, which is much more difficult for people born

deaf. “I nevertheless come up against communication barriers, as I don’t understand everyone well,” explains Seitz. “Due to my good language skills, some people – probably unconsciously – unfortunately perceive me as just being hard of hearing, or even as someone with hearing, and just start to rattle on.”

Seitz wears the hearing aid because it helps him detect loud noises. However, it only allows him to interpret voices as sounds and not as language. That’s why he looked for a job that did not involve using the telephone. So an office job was not an option, but the chemical-technical sector proved to



Thomas Seitz likes to be on the move in his job and feels accepted as an equal.

be ideal. In the lab, he can work just as well as any other technician. The only difference was that the pilot plant received a piece of special equipment for him: a flashing light comes on as soon as an acoustic alarm goes off – this happens time and again due to regular drills. His colleagues explain the accompanying announcements to him. There are no problems here, either – some colleagues even learned simple signs such as fingerspelling.

“It is very important to us to provide a working environment free of prejudice, in which all employees can contribute to the company’s success.”

Dr. Christian Hartel, Personnel Director and
Member of WACKER’s Executive Board

A sign language interpreter comes to general employee meetings so that people like Seitz can follow the events. This kind of interpreter also signs at the annual meeting for severely disabled employees and at safety days and internal informational events. The interpreter’s work is quite demanding, as she has to correctly sign many technical terms specific to WACKER. Together, Seitz and Nagl arranged for the interpreter to get documents and presentations several days before an event, rather than just before it takes place. This allows her to familiarize herself with the content and be prepared for what will be said.

Open-Minded and on an Equal Footing

“It is very important to us to provide a working environment free of prejudice, in which all employees can contribute to the company’s success,” said WACKER Executive Board member and Personnel Director Dr. Christian Hartel during the presentation of the inclusion emblem. Ellguth, Kaiser, Baddack and Seitz can confirm that such a working environment is a matter of course at WACKER. More than 900 individuals with disabilities work for the WACKER Group. That’s equivalent to 8.8 percent of the workforce – yet the law in Germany requires only 5 percent. Seitz speaks for many, maybe even all, of these individuals when he states that “I feel accepted as an equal.”

Key Events

| GRI 102-10 | GRI 102-51 |

February 2017



In Burghausen, WACKER expanded its dispersion production capacity, increasing annual capacity to 60,000 metric tons. Investment spending for this amounted to some €25 million.

March 2017

In an accelerated bookbuilding, WACKER gave up its majority in Siltronic AG. In total, 6.3 million Siltronic shares were placed with institutional investors at €55.85 per share. WACKER still holds 30.8 percent of the shares in Siltronic after this transaction and thus remains the biggest individual shareholder in the company.

April 2017



At the European Coatings Show in Nuremberg – the biggest of its kind in Europe – WACKER presented new polymeric binders and silicones, together with innovations for the construction, packaging and adhesives industries.

May 2017

WACKER intensified its cooperation with innovative company founders by becoming involved in Germany's HTGF III fund.

May 2017



WACKER strengthened its presence in high-growth Asia: in Jakarta, the capital of Indonesia, a new technical competence center for construction and adhesive applications opened its doors.

June 2017



WACKER started up a new silicones R&D center in the USA, with the aim of pushing the development of new products in North America. The research and analytical laboratories are located in the university town of Ann Arbor in Michigan.

July 2017

WACKER published its sustainability report for 2015 and 2016, recording a 41-percent reduction in emissions, consumption and energy input at our biggest production site in Burghausen during the previous ten years.

August 2017



In São Paulo, WACKER joined customers in celebrating the 40th anniversary of its South American headquarters in Brazil. At the Jandira site near São Paulo, WACKER built a multifunctional facility for manufacturing antifoam agents and functional silicone fluids.

September 2017

At the US production site in Charleston, a technical defect led to the escape of hydrogen and an explosion, which damaged pipes and a building. Production was shut down until the damage had been investigated and repair work completed.

October 2017



WACKER presented the Alexander Wacker Innovation Award to a research team for developing high-temperature silicone fluids. The product, HELISOL®, can be heated up to 425 °C and its viscosity remains low even at -40 °C. In solar thermal power plants, it achieves efficiencies that are impossible with conventional heat-transfer media.

November 2017



German President Frank-Walter Steinmeier visited WACKER's Nünchritz production site during his three-day tour of the Free State of Saxony. Accompanied by Saxony's State Governor Stanislaw Tillich, he learned about WACKER's role as an economic player in the region, as well as about the recruitment of suitably qualified staff, training programs, and maintaining a work-life balance.

November 2017



Ground-breaking in Ulsan, South Korea: WACKER is expanding its existing production facilities for dispersions and dispersible polymer powders. We are constructing a new spray dryer for dispersible polymer powders with a capacity of 80,000 metric tons, as well as a further reactor for dispersions based on vinyl acetate-ethylene copolymer (VAE). About €60 million is being spent on this project, with production set to begin in 2019.

January 2018



The Bavarian government commended WACKER for its policy of workplace inclusiveness. Johannes Hintersberger, State Secretary at the Bavarian Ministry of Social Affairs, presented Wacker Chemie AG with the "Inclusion in Bavaria – We Work Together" emblem.

March 2018



At the Bavarian Young Scientists Competition, which WACKER sponsors, 79 budding scientists presented their scientific and technical projects to a specialist jury in Munich.

April 2018



WACKER acquired a production plant for biopharmaceuticals from SynCo Bio Partners Luxembourg S.à r.l. The new subsidiary, Wacker Biotech B.V., is based in Amsterdam.

April 2018



WACKER opened a new production site for silicone elastomers in Jincheon, South Korea. The new plant manufactures silicone sealants and specialty silicones for the electronics industry.

May 2018



The Bavarian government recognized WACKER as a family-friendly company. Participating in the state's "Successful. Family-Friendly" corporate competition, WACKER was commended for its exemplary support in reconciling family life and work.

May 2018

Following the loss event at the Charleston, Tennessee (USA) site in September 2017, WACKER gradually began ramping up the production facilities again. WACKER is also constructing a new plant for pyrogenic silica there.

June 2018



WACKER joined the “Familienpakt Bayern” network (Family Pact Bavaria) of the Bavarian government and Bavarian industry. By doing so, the company underscored its goal of promoting a family-friendly corporate culture.

July 2018



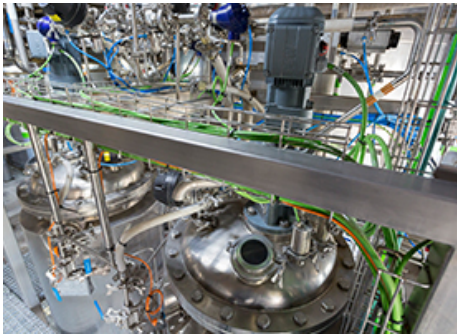
Bavarian State Governor Dr. Markus Söder visited the Burghausen plant. He was met by Dr. Peter-Alexander Wacker (Supervisory Board chairman), Dr. Rudolf Staudigl (president and CEO) and site manager Dr. Dieter Gilles. They explained Burghausen’s importance as the oldest and largest site in the Group’s production network.

September 2018



At the European Silicon Days in Saarbrücken, Dr. Herbert W. Roesky, Emeritus Professor of Inorganic Chemistry at the Georg-August University of Göttingen, was presented with the WACKER Silicone Award for his work on low-valence silicon chemistry.

September 2018



WACKER BIOSOLUTIONS began producing fermentation-generated cystine at its site in León, Spain.

September 2018



Germany's chemical industry opened its gates to the public. WACKER opened its Burghausen and Nünchritz sites and Munich-based central research facility for the event. More than 25,000 visitors turned up.

October 2018



WACKER presented the Alexander Wacker Innovation Award in the product-innovation category to two Burghausen-based chemists. They developed binders for producing especially high-performing adhesives, sealants, wood varnishes and coating materials.

November 2018



At the China International Import Exhibition (CIIE) in Shanghai, WACKER's booth attracted numerous visitors interested in new technologies such as 3D printing with silicones. CIIE was attended by WACKER Executive Board members Dr. Rudolf Staudigl and Dr. Christian Hartel, who welcomed guests such as Christian Hirte, Parliamentary State Secretary at Germany's Federal Ministry for Economic Affairs and Energy.

Structure and Operations

Group Structure and Business Operations

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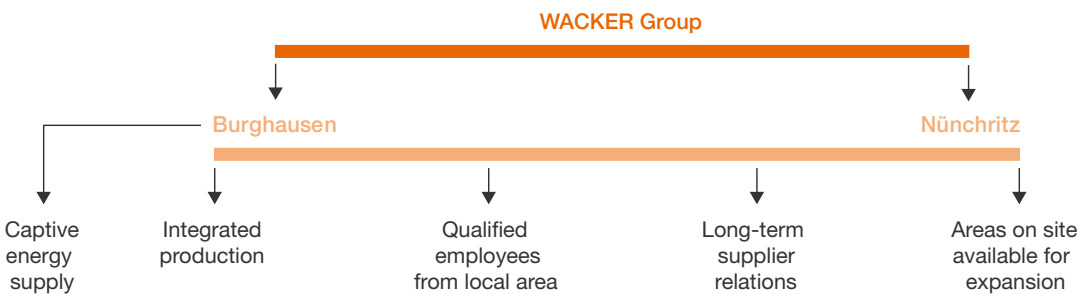
Business Model of the Group

WACKER is a global company with state-of-the-art specialty chemical products found in countless everyday items, ranging from cosmetic powders to solar cells. Our portfolio includes more than 3,200 products supplied in over 100 countries.

Silicon Is Our Main Starting Material

Most of our products are based on inorganic starting materials. Silicon-based products account for about 70 percent of WACKER sales, and primarily ethylene-related products for 30 percent. Our customers come from virtually every major industry, including base chemicals, electrical engineering and electronics, the solar, textile and food sectors, consumer goods, medical technology and biotech. As a producer of silicones and polymers, we are particularly well represented in the construction and automotive sectors. WACKER is one of the world's largest manufacturers of polysilicon for the semiconductor and solar industries.

Key Factors for Multidivisional Sites



Technical Competence Centers: Support for Sales and Marketing Activities

WACKER operates all over the world. Our sales strategy is centered around expanding our presence in growth markets. In total, WACKER has 50 sales offices in 32 countries. Our sales organization is supplemented not only by a network of technical competence centers, where customers learn about WACKER's product portfolio, but also by the WACKER ACADEMY, where we offer technical training sessions on our products and their application fields. In 2018, we opened a new technical competence center in Anyang, South Korea.

24 Production Sites

WACKER's integrated global production system consists of 24 production sites (2017: 23): ten are in Europe, seven in the Americas and seven in Asia. The Group's key production site is Burghausen, Germany. At this site alone, we have over 8,100 employees (including temporary workers and trainees). In 2018, Burghausen manufactured around 950,000 metric tons of product, accounting for almost 50 percent of the Group's production output. Nünchritz is WACKER's second multidivisional site alongside Burghausen.

See interactive map of [WACKER sites](#)

Legal Structure

| GRI 102-3 | GRI 102-5 |

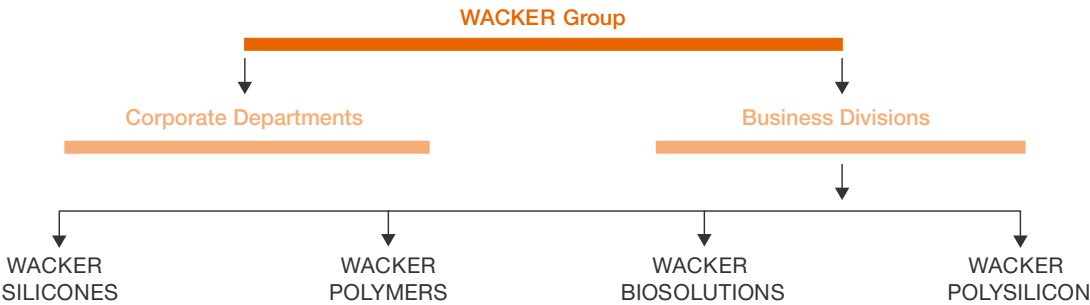
In November 2005, WACKER became a stock corporation (AG) under German law. Headquartered in Munich, Wacker Chemie AG holds a direct or indirect stake in 54 companies belonging to the WACKER Group. The consolidated financial statements cover 51 fully consolidated companies. Three companies are accounted for using the equity method. Wacker Chemie AG and a number of its subsidiaries also have branch offices, but they are of only minor significance for the Group.

Four Business Divisions

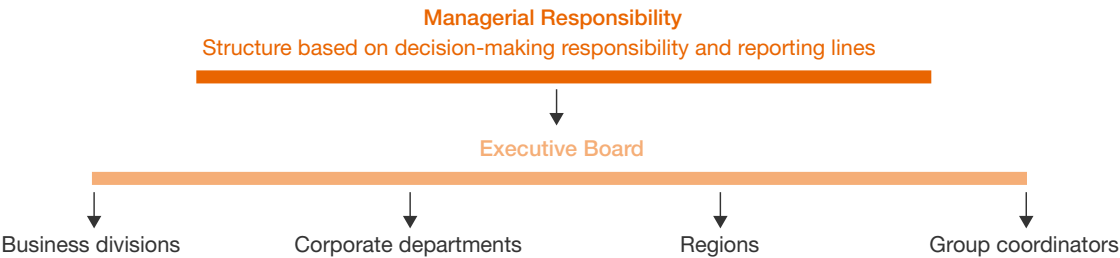
WACKER is based on a matrix organization with clearly defined functions and has four business divisions.

Each business division has global responsibility for its products, manufacturing facilities, markets, customers and results. Regional organizations are responsible for all business in their respective countries. WACKER's corporate departments primarily provide services for the whole Group, although some also have production-related functions.

Group Structure



Group Structure in Terms of Managerial Responsibility



Key Products, Services and Business Processes

| GRI 102-2 | GRI 102-6 | GRI 102-7 |

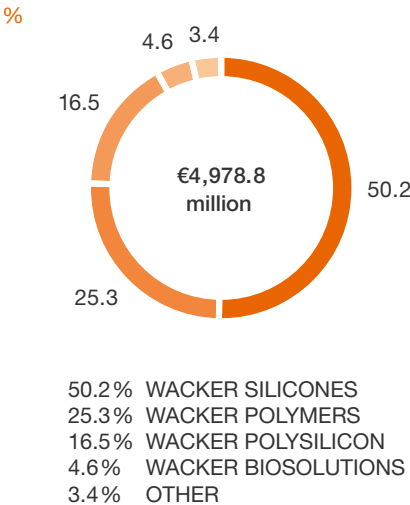
Overall, the range of products and services at each of our divisions remained unchanged during the reporting period. In several application areas, though, we expanded our product portfolio. WACKER SILICONES has our broadest range with more than 2,800 products. The division produces both specialties and standard products.

WACKER POLYMERS makes state-of-the-art binders and polymeric additives (such as dispersible polymer powders and dispersions). These are used in diverse industrial applications or as feedstock. Customers include the paint, coating, paper and adhesive industries. The main customer for polymeric binders is the construction sector.

WACKER BIOSOLUTIONS supplies customized biotech and catalog products for fine chemicals. Products include pharmaceutical proteins, cyclodextrins, cysteine, polyvinyl acetate solid resins (for gumbase), organic intermediates and acetylacetone. The division focuses on customer-specific solutions for growth areas, such as food additives, pharmaceutical actives and agrochemicals.

WACKER POLYSILICON produces hyperpure polysilicon for the semiconductor and solar sectors.

Divisional Shares in External Sales



External Sales by Customer Headquarters

€ million	2018	2017	2016
Europe	2,096.7	1,970.4	1,850.9
The Americas	878.2	838.7	825.6
Asia	1,756.9	1,886.2	1,751.6
Other regions	247.0	228.9	206.1
Group	4,978.8	4,924.2	4,634.2

Management, Supervision and Governance

Management and Supervision

| GRI 102-18 | GRI 102-22 | GRI 102-23 |

In compliance with the German Stock Corporation Act (AktG), Wacker Chemie AG has a two-tier management system, comprising an Executive Board and a Supervisory Board. The Executive Board has four members.

Wacker Chemie AG is the parent company and thus determines the Group's strategy, overall management, resource allocation, funding, and communications with key target groups (especially with the capital market and shareholders).

On October 31, 2018, Harald Sikorski stepped down as employee representative on the Supervisory Board, as he had taken up a new post in another district outside Bavaria. At the Executive Board's request, Jörg Kammermann was appointed to the Supervisory Board by order of the District Court of Munich on November 14, 2018.

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Executive Board Responsibilities

Dr. Rudolf Staudigl
President & CEO

WACKER POLYSILICON

Executive Personnel, Corporate Development, Corporate Communications, Investor Relations, Corporate Auditing, Legal, Compliance, Retirement Benefits

Dr. Christian Hartel

WACKER POLYMERS

WACKER BIOSOLUTIONS (since July 1, 2018)

Human Resources (Personnel Director), Corporate Research & Development (since July 1, 2018), Intellectual Property (since July 1, 2018), Corporate Engineering

Region: Asia

Dr. Tobias Ohler

Corporate Accounting and Tax, Corporate Controlling, Corporate Finance and Insurance, Information Technology, Procurement & Logistics

Region: The Americas

Auguste Willems

WACKER SILICONES

WACKER BIOSOLUTIONS (until June 30, 2018)

Sales & Distribution, Site Management, Corporate Security, Environment/Health/Safety, Product Stewardship, Corporate Research & Development (until June 30, 2018), Intellectual Property (until June 30, 2018)

Regions: Europe, Middle East

Executive Board and Supervisory Board in the 2017/2018 Reporting Period

At its meeting of December 7, 2017, the Supervisory Board of Wacker Chemie AG confirmed the re-appointments of president and CEO Dr. Rudolf Staudigl and Executive Board member Dr. Christian Hartel. Dr. Rudolf Staudigl's contract was renewed for a further three years (until September 30, 2021) and that of Dr. Christian Hartel for five years (until October 31, 2023). Effective January 1, 2017, Manfred Köppl was elected as the new deputy chairman of the Supervisory Board. Hansgeorg Schuster joined the Supervisory Board on January 1, 2017, but then left it due to the sale on March 14, 2017 of shares in Siltronic AG. At the Executive Board's request, Barbara Kraller was appointed to the Supervisory Board by order of the District Court of Munich on April 24, 2017.

At its meeting on March 6, 2018, the Supervisory Board of Wacker Chemie AG renewed the contract of Executive Board member Auguste Willems for a further five years (until December 31, 2023). On May 9, 2018, the Annual Shareholders' Meeting in Munich elected the shareholder representatives for the Supervisory Board. Newly elected was Ann-Sophie Wacker, who replaced shareholder representative Dr. Thomas Strüngmann on the Supervisory Board.

All the other shareholder representatives were re-elected to the Supervisory Board. At its inaugural meeting, directly after the Annual Shareholders' Meeting, the Supervisory Board confirmed Dr. Peter-Alexander Wacker as its chairman. The employee representatives on the Supervisory Board had been elected by Wacker Chemie AG's employees and executives before the Annual Shareholders' Meeting. They elected Ingrid Heindl to the Supervisory Board to replace Dagmar Burghart as employee representative.

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Governance and Shareholder Structure

Corporate governance is an important part of a company's success and of responsible corporate management and supervision. Wacker Chemie AG attaches great importance to the rules of proper corporate governance. In the [2018 annual report](#), the Executive Board provides details – also on behalf of the Supervisory Board – on corporate governance in accordance with Section 3.10 of the German Corporate Governance Code (the Code) and on corporate management in accordance with Sections 289 f and 315 d of the German Commercial Code (HGB).

It contains the Executive and Supervisory Boards' work procedures, the [declaration of conformity pursuant to Section 161 of the German Stock Corporation Act](#) (AktG), and information on key corporate management practices.

Wacker Chemie AG's largest shareholder continues to be Dr. Alexander Wacker Familiengesellschaft mbH, Munich. It holds over 50 percent of the voting shares in Wacker Chemie AG (2017: over 50 percent). Blue Elephant Holding GmbH (Pöcking, Germany) also had no voting-share changes to report in 2018, with its holding in Wacker Chemie AG remaining at over 10 percent (2017: over 10 percent).



Management

As a core element of WACKER's business model, sustainability is one of the company's five strategic goals. Responsible stewardship means that WACKER also contributes to at least seven of the UN's sustainable development goals.

Dr. Susanne Leonhartsberger is managing director of Wacker Biotech GmbH. Her team develops active ingredients for applications such as drugs.

Vision and Goals

| GRI 102-12 | GRI 102-15 |

Founded on a vision and five goals, our strategy is an appreciation of what we aspire to achieve. Our strategy is focused on profitable growth and the goal of attaining a leading competitive position in most of our business fields, while observing the principle of sustainable development.

WACKER's Vision

We develop intelligent solutions for sustainable growth.

As an innovative chemical company, WACKER makes a vital contribution to improving the quality of life around the world.

In the future, we want to continue developing and supplying solutions that meet our rigorous demands – creating added value for our customers and shareholders, and growing sustainably.

WACKER's Goals

- **WACKER products and solutions are our customers' first choice.**

All of our activities focus on our customers' needs. Satisfied customers are the basis of our success. We are constantly working on enhancing our product quality and improving our services. The better we succeed at this, the more we can grow with our customers, deepen our understanding of their needs and provide them

with higher added value. To achieve this, WACKER focuses on direct contact and on exchanging information personally. Through our technical competence centers and the WACKER ACADEMY, we work closely with customers to develop tailored solutions. Our strength lies in our long-term relationships, based on trust, with the people in our markets.

- **We want to be one of the world's best employers.**

Our employees' health and safety are our greatest assets. At WACKER, the success we achieve together is based on a supportive and challenging environment. We ensure that our employees can develop their skills, realize their potential, assume responsibility, take initiative and contribute their own ideas by offering them basic and advanced training opportunities. What we expect is a performance-oriented mindset, coupled with sound professional and social skills. To this end, we want to provide secure jobs, exceptional employee benefits and a work culture that facilitates a positive work-life balance. Clearly focused on commercial success, we value teamwork that is based on mutual reliance, trust and fairness.

- **We tap new markets via product and process innovations for tomorrow's world.**

We develop products that are vital for tomorrow's world. That's why we invest in research and development. Our innovative strength is reflected in the high sales percentage of new products. We are skilled at transferring newly developed production processes to globally

competitive manufacturing plants. At WACKER, innovation also means "making what is good even better." Our "Wacker Operating System" (WOS) program aims at systematically optimizing our processes. Employees receive the necessary training at our own WOS academies. As the quality and cost leader in many of our business sectors, we realize that "becoming better is a never-ending process."

- **We continuously increase our company value.**

WACKER sees itself as a performance-oriented company, geared toward increasing its long-term value. Economic success is essential for pursuing and achieving our strategic goals. Our annual sales should grow more than world GNP. We want to be among the most profitable companies in our industry. This is why value-based management is an integral part of our corporate policies. We measure our success against clearly defined indicators and continuously focus on earning more than our cost of capital. We want to be among the top three suppliers in each of our business sectors. To this end, we always strive to increase our competitive edge – in cost, quality and technology.

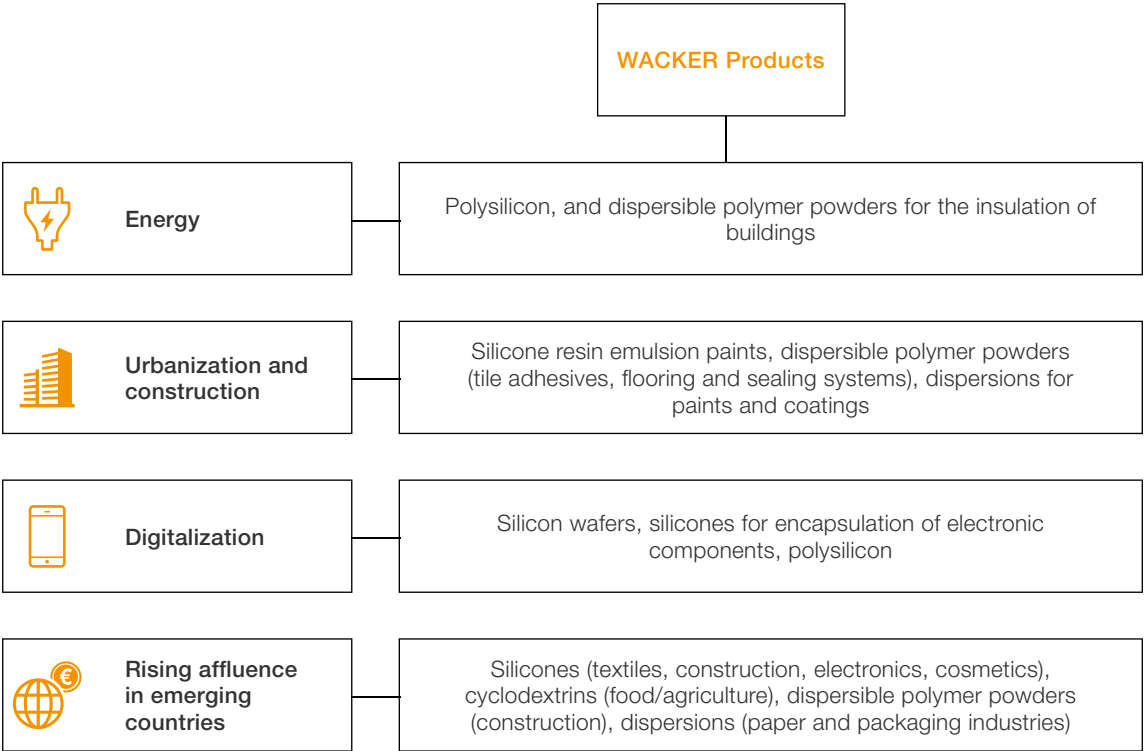
- **Our responsibility as a company extends beyond our business activities.**

Our commitment to sustainability encompasses ecological, economic and social aspects. Our actions are guided by the underlying principles of the UN's Global Compact and the chemical industry's Responsible Care® initiative. Our products, technologies and processes meet the highest standards. For years, sustainability has

been an integral part of WACKER's production and business processes. One of our greatest strengths is our closed material loops, where we use byproducts from one production stage as starting materials for making other products. This reduces our consumption of energy and other resources. Driven by our deeply rooted values, we take on social responsibility. We pursue this commitment near our sites and wherever people are in need around the world. Society's trust in our actions is an essential component of our long-term economic success.

Our strategic goals are oriented toward the highly promising fields of energy, urbanization and construction, digitalization, and rising affluence in emerging countries. WACKER offers products that satisfy these global trends.

Up-and-Coming Fields



New Strategic Goals until 2020

In 2016, we presented our strategy for the WACKER Group until 2020. Our strategic goals for the next few years are:

1. Expanding our production capacities, with capital expenditures below depreciation.
2. Growing faster than the chemical-industry average.
3. Focusing even more strongly on sustainability.
4. achieve attractive margins within the business cycle.
5. Increasing our cash inflow from operating activities.

As part of the “focusing even more strongly on sustainability” strategic goal, we have initiated the WACKER Sustainable Solutions project that is aimed at developing a sustainable business strategy and focuses on the following topics:

- Increasing the proportion of renewable raw materials in the chemical divisions (WACKER SILICONES, WACKER POLYMERS and WACKER BIOSOLUTIONS);
- Systematically evaluating the life cycle of the portfolio;
- Stepping up communication to customers about the added value of sustainable products.

Contribution to the United Nations' Sustainable Development Goals

In September 2015, over 150 heads of state and government approved the 2030 Agenda for Sustainable Development at the UN Summit in New York. Governments and civil society were consulted when 17 Sustainable Development Goals (SDGs) that are to be fulfilled in all countries across the world were drawn up.



WACKER is committed to responsible stewardship and contributes to the implementation of the following SDGs, in particular:

SDG 4: Quality Education

The WACKER relief fund (WACKER HILFSFONDS) provides support to victims of natural disasters and helps rebuild devastated regions. Here, the foundation focuses on education for children and young people.

SDG 7: Affordable and Clean Energy

The energy sources of the future are the sun, wind, water, biomass and geothermal power. WACKER is making a significant contribution to their efficient use. It is among the main suppliers worldwide of polysilicon for the production of solar modules, for example. Wind turbines consist of composite materials that are bonded together. This requires high-impact modifiers, supplied, for instance, by WACKER. Silicone films from WACKER are used to convert wave power into electricity.

SDG 8: Decent Work and Economic Growth

WACKER ensures that its employees can realize their potential, assume responsibility and contribute their own ideas by offering them basic and advanced training opportunities. We want our employees to have secure jobs, generous employee benefits and a work culture that facilitates a positive work-life balance. We place great emphasis on offering all our employees equal opportunities and humane working conditions. Further, our aim is to ensure that any employees who are disabled or have chronic health issues are integrated in the workplace over the long term. Vocational training has always been a focus of WACKER's personnel-development activities. We offer our employees attractive compensation, good promotion prospects and a share in our company's success.

SDG 9: Industry, Innovation and Infrastructure

Through our R&D activities, we are pursuing the goal of creating innovative products and applications for new markets and promoting future trends such as sustainable energy production and storage, the increase in mobility, urbanization, digitalization and the rise in prosperity.

SDG 12: Responsible Consumption and Production

We regard lowering our consumption of raw materials, energy and water as a key aspect of sustainable business management. Reducing solid, liquid and gaseous waste – in particular greenhouse gases – is a perpetual goal. In integrated production, we minimize waste by feeding byproducts back into the production loop. Waste heat from one process is utilized in other chemical processes. We endeavor to avoid waste throughout a product's entire life cycle.

SDG 13: Climate Action

With our products, we contribute to reducing the emission of gases that are harmful to the climate. This includes products for insulating buildings, silicone resins for facade protection, polysilicon for the production of solar modules, heat-transfer fluids for solar power generators, and silicon-based materials for lithium-ion batteries. In our own production, we are continuously improving the energy efficiency of the processes, thus lowering the specific energy consumption and associated specific CO₂ emissions.

SDG 17: Partnerships for the Goals

WACKER collaborates with suppliers and customers worldwide to promote sustainable business practices. Two global initiatives form the basis for sustainable corporate management at WACKER: the chemical industry's Responsible Care® initiative and the UN's Global Compact. WACKER is a member of the Together for Sustainability (TfS) initiative. It aims at developing a global program for responsible procurement of goods and services and improving the ecological and social standards of suppliers.

The depicted SDGs describe:

- The global challenges that WACKER can help overcome,
- The significant opportunities for WACKER's operations, and
- The guiding principle for innovations at WACKER.

Business Principles

| GRI 102-16 |

Alongside our vision and goals, our business principles represent the third pillar of our corporate policy guidelines. These principles – laid down in five corporate codes – govern how the Group should achieve its objectives. The five codes are the Code of Safety, the Code of Conduct, the Code of Innovation, the Code of Teamwork & Leadership, and the Code of Sustainability. The codes are supplemented by a body of regulations and directives.

Code of Conduct

The Code of Conduct contains our principles for dealing with business partners and third parties. It also governs the handling of information, confidentiality and data security, the prevention of money laundering, and the separation of personal and business interests.

■ [Code of Conduct](#)

Code of Innovation

The Code of Innovation specifies our principles concerning research and development, partnerships, patents and innovation management.

■ [Code of Innovation](#)

Code of Teamwork & Leadership

The Code of Teamwork & Leadership outlines our understanding of teamwork and leadership. Key aspects here include trust and esteem, motivation and success, recognition and development, teamwork and equal opportunity, worklife balance and the positive example set by managerial employees.

- [Code of Teamwork & Leadership](#)

Code of Safety

The Code of Safety defines our safety culture and sets safety guidelines for workplaces, facilities, and products and their transport.

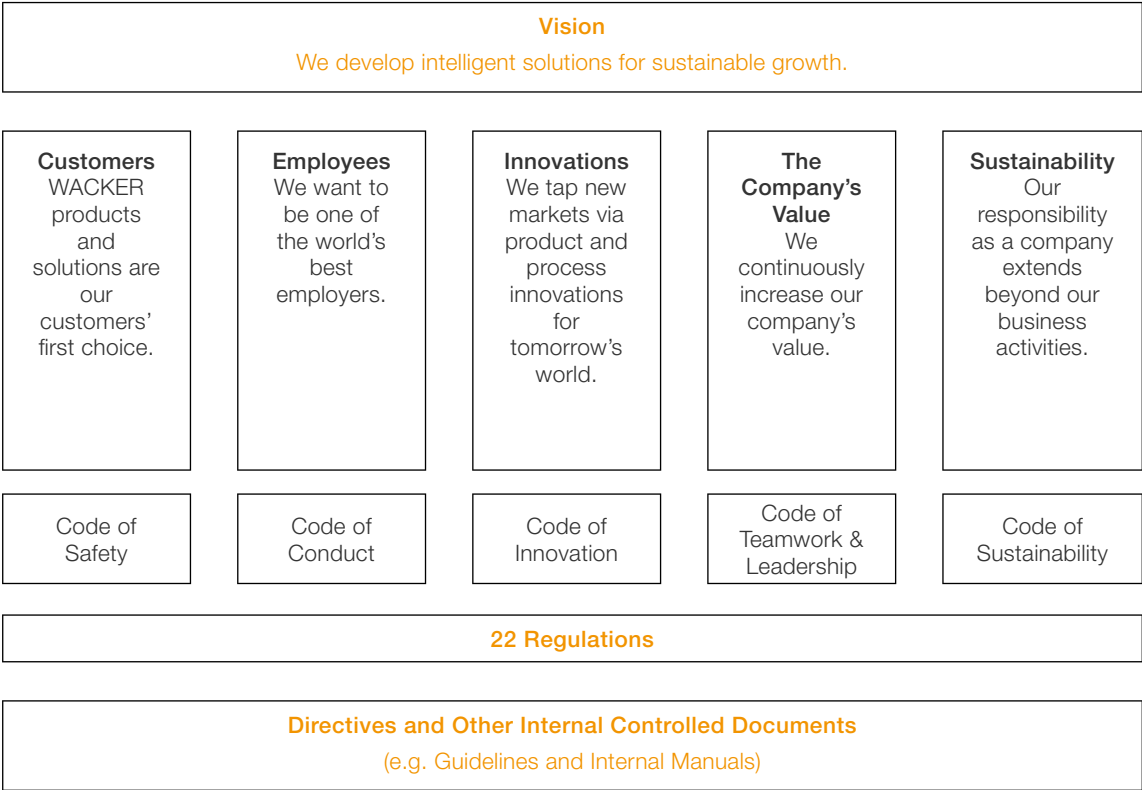
- [Code of Safety](#)

Code of Sustainability

The Code of Sustainability lists principles for sustainability to be adhered to by R&D, procurement and logistics, production and products, and describes our commitment to society.

- [Code of Sustainability](#)

Vision – Goals – Business Principles



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Voluntary Commitments

GRI 102-11 | GRI 102-12 | GRI 102-17 | GRI 102-30 |
GRI 412-1 |

Two voluntary global initiatives form the basis for sustainable corporate management at WACKER: the chemical industry's **Responsible Care®** initiative and the UN's **Global Compact**. WACKER has been an active member of the Responsible Care® initiative since 1991. Program participants undertake to continually improve health, safety and environmental performance on a voluntary basis – even in the absence of statutory requirements.

We attach equal importance to economic and social goals. This explains our strong focus on environmental protection, plant process safety (for both employees and neighbors), occupational safety, and product safety (for customers and end users).

The UN's Global Compact is another guideline for our actions. We joined the initiative in 2006. Member companies commit to implementing the Global Compact's ten principles, which are derived from the Universal Declaration of Human Rights, the

International Labour Organization's Declaration on Fundamental Principles and Rights at Work, and the Rio Declaration on Environment and Development. We observe the Global Compact's ten principles, which address social and environmental standards, anticorruption and the protection of human rights (see [Progress Report](#)).

Human Rights

- Principle 1: Businesses should support and respect the protection of internationally proclaimed human rights within their sphere of influence, and
- Principle 2: make sure that they are not complicit in human rights abuses.

Labor Standards

- Principle 3: Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining,
- Principle 4: the elimination of all forms of forced and compulsory labor,
- Principle 5: the effective abolition of child labor, and
- Principle 6: the elimination of discrimination in respect of employment and occupation.

Environmental Protection

- Principle 7: Businesses should support a precautionary approach to environmental challenges,
- Principle 8: undertake initiatives to promote environmental responsibility, and
- Principle 9: encourage the development and diffusion of environmentally friendly technologies.

Anti-Corruption

- Principle 10: Businesses should work against corruption in all its forms, including extortion and bribery.

New regulations such as [the UK's Modern Slavery Act](#) and Germany's [National Action Plan](#) on Business and Human Rights show that respect for human rights continues to be an important social issue. As a company, we are going to identify and evaluate the risks of our business activities even more systematically to take greater account of them in our decision-making processes.

Organization

Management Structures

GRI 102-18 | GRI 102-19 | GRI 102-20 | GRI 102-26 |
GRI 102-29 | GRI 102-31 | GRI 412-1 |

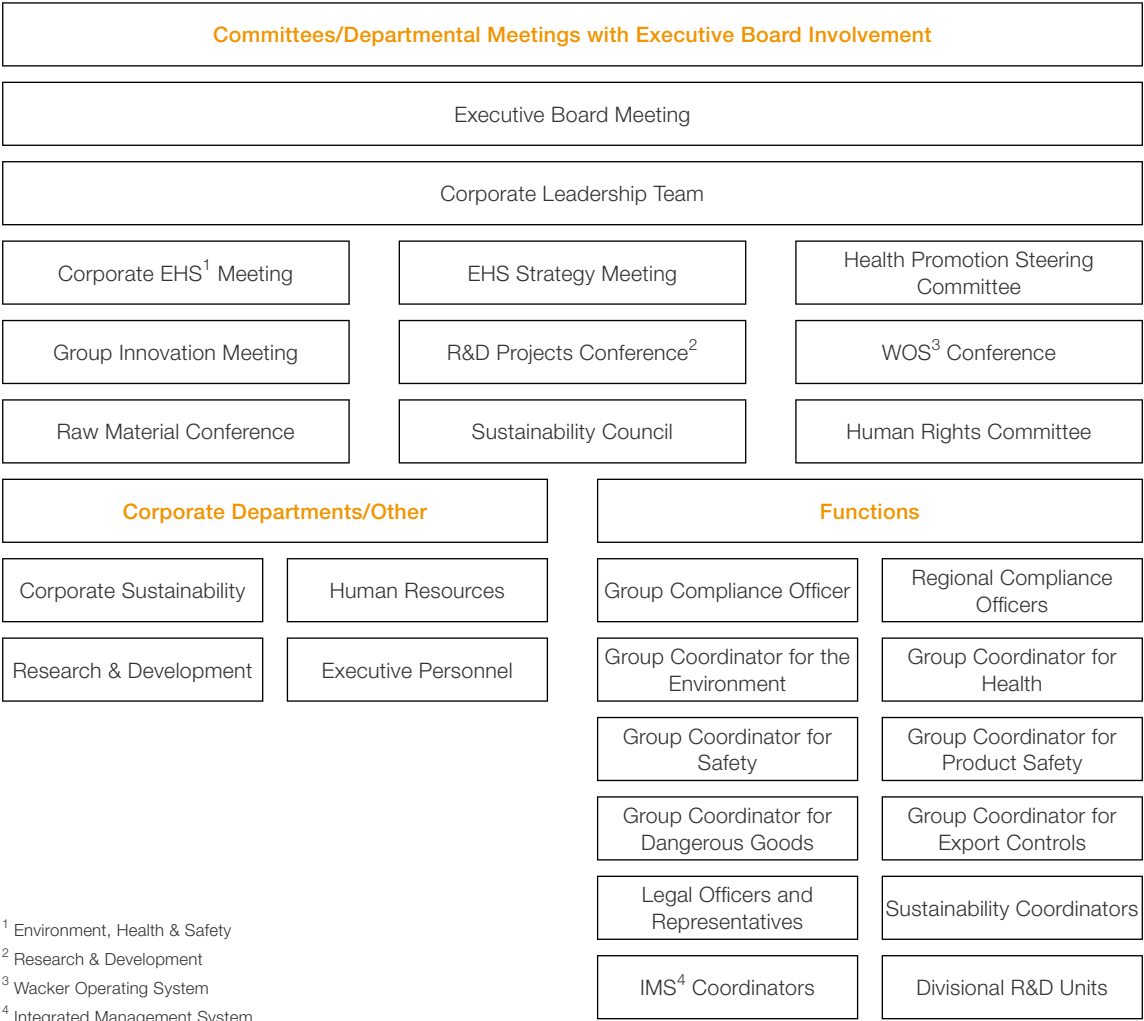
Wacker Chemie AG's four-member Executive Board oversees the Group's strategies, resources, infrastructure and organizational structure. Dr. Rudolf Staudigl is the Board's President and CEO. Other members are Dr. Christian Hartel, Dr. Tobias Ohler and Auguste Willems.

An Executive Board Meeting is WACKER's highest decision-making authority. Below the Executive Board, there are various committees whose membership spans several organizational sectors and legal entities. These committees ensure that corporate strategies are implemented groupwide.

The Corporate Leadership Team (CLT) discusses strategically important topics, analyzes possible trends affecting markets and our competitors, and discusses key topics not directly connected with day-to-day business. The CLT comprises the entire Executive Board, business-division presidents and corporate-department heads.

The main committees for environment, health, safety and product safety are the annual Corporate Environment, Health and Safety (EHS) Meetings and EHS Strategy Meetings, led by the Executive Board member responsible for EHS & PS. Person-

Coordinating Sustainability at WACKER



¹ Environment, Health & Safety
² Research & Development
³ Wacker Operating System
⁴ Integrated Management System

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nel policies are dealt with monthly in the HR Strategy Meeting while employee health is addressed once a year by the Health Promotion Steering Committee – both are chaired by WACKER's personnel director.

The Raw Material Conference and the WOS Conference focus on the Group's productivity projects and goals and are led by the Executive Board member responsible for Corporate Engineering. The Group Innovation Meeting and the R&D Projects Conference cover innovation strategies and projects.

Environmental, health and safety officers meet for an international EHS & PS Conference once a year. They exchange experiences and discuss the progress made regarding sustainability topics of groupwide significance. EHS & PS management focused on the Americas in 2018 and on Asia in 2017. Related activities involved an increasing number of on-site inspections at our various plants.

The Corporate Sustainability department oversees the implementation of WACKER's voluntary commitments under Responsible Care® and the Global Compact and coordinates our sustainability activities worldwide.

In 2018, WACKER founded a Human Rights Committee whose members are experts from the Corporate Sustainability, Compliance, Legal Affairs, Human Resources, Procurement & Logistics and Sales departments or are human rights specialists. This committee is tasked with prioritizing potential impacts on human rights at WACKER and throughout the supply chain. It is also responsible for checking existing management approaches in terms of mechanisms that fulfill a protective and monitoring function, as well as for identifying weak points and meeting the need for information.

WACKER Sustainable Solutions
Launched in 2018, our WACKER Sustainable Solutions program puts our goal of focusing on sustainability into effect. This program is intended to anchor sustainability-related aspects more firmly in our business models, to identify new, sustainable business opportunities and to minimize sustainability-related risks at an early stage.

- WACKER Sustainable Solutions aims to:
- Promote and expand our existing sustainable business fields
 - Set up new sustainable business
 - Identify and assess sustainability-related risks to our business portfolio at an early stage

During the reporting period, the Executive Board held a Sustainability Council to deal with monitoring and coordinating the WACKER Sustainable Solutions Program. This council is attended by members of the business divisions and corporate departments, who rate the company's sustainability performance. The Sustainability Council coordinates interdepartmental measures and reviews the progress made by the program.

Topics Highlighted by Sustainability Management
The regional focus of sustainability management in 2018 was the Americas. Our sites at Charleston, Adrian, Eddyville and Calvert City underwent health and safety audits. Sustainability management focused on Asia in 2017. The Chinese sites in Nanjing, Shanghai and Zhangjiagang, as well as the Kolkata site in India, underwent occupational health and safety inspections.

Personnel Responsibility

GRI 102-19

Our compliance organization focuses on compliance with legal requirements and internal company regulations. The Group compliance officer supervises and guides a network of regional compliance officers.

Responsibility for the key areas of environment, health and safety, export control, hazardous materials, and product stewardship rests with the Group coordinators. In this capacity, they report directly to the WACKER Executive Board, and define group-wide standards in the form of goals and processes. These standards are to be followed by every corporate sector and site worldwide. Alongside the Group coordinators, WACKER has legally mandated officers for managing specific areas in the respective regions (for example, in Germany, there are incidents officers and liaison officers for severely disabled staff).

Workplace and plant safety are vitally important for WACKER. That is why WACKER defines safety targets together with its executives in Germany (in upper and middle management) during its annual target-setting process. They are mandatory personal goals, especially for executives in production-related areas. They also influence the final performance evaluation.

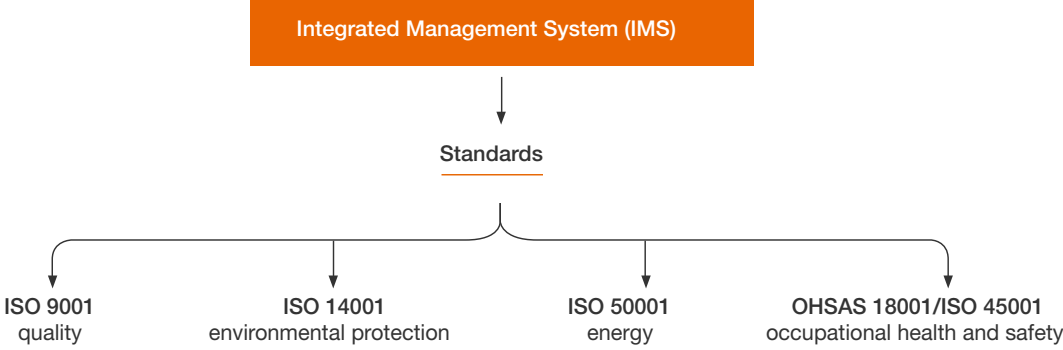
Management Systems

We control operational processes via our integrated management system (IMS). The system describes workflows and responsibilities, and stipulates uniform standards throughout the Group for quality, environmental protection, energy, occupational health and safety, and plant safety. It is based on customer demands, statutory regulations, our own sustainable business principles, and national and international standards.

We have our Group management system certified by an international certification organization in accordance with ISO 9001 (quality) and ISO 14001 (environmental protection), and have our German sites certified as per ISO 50001 (energy).

Our Group certification program ensures that all WACKER sites implement legal and customer-related rules as well as our corporate standards.

Integrated Management-System Standards



Almost every WACKER production site is included in the ISO 9001 (quality) and ISO 14001 (environment) Group certificates. Exceptions are the Kolkata plant of Wacker Metroark Chemicals Pvt. Ltd., India, and the Tsukuba site of Wacker Asahi Kasei Silicone Co., Ltd., Tokyo, Japan, which have corresponding individual certificates. In the reporting period, we recertified all sites to the new specifications of ISO 9001:2015 and 14001:2015.

As of 2012, all German sites belonging to Wacker Chemie AG and Alzwerke GmbH have been certified to ISO 50001 (energy management systems). The silicone-producing facilities at the Burghausen and Nünchritz sites in Germany, as well as at Jandira (Brazil), Zhangjiagang (China), Kolkata (India) and Tsukuba (Japan), have been certified to the ISO 22716 standard for the cosmetics industry.

We align our processes and standards relating to occupational health and safety with the international OHSAS 18001 standard. Our Jandira (Brazil) and Jincheon (South Korea) sites have an OHSAS certificate.

See interactive map of [certified WACKER sites](#)

Controlling Instruments

At WACKER, 22 groupwide regulations govern topics of overall significance for the company. They concern management, organization and collaboration, law and compliance, strategy and business processes as well as financing, controlling, accounting and taxes. Numerous other controlled documents regulate processes for environmental and health protection, plant and workplace safety, and product safety, on a Group, regional and site-specific level.

The Group's corporate carbon footprint helps WACKER identify measures for improving climate protection. That is why we calculate greenhouse gas emissions in line with the Greenhouse Gas Protocol. We divide them into direct emissions (Scope 1), indirect emissions from procured energy (Scope 2), and emissions produced along the supply chain (Scope 3). Scope 3 relates to emissions produced by procuring raw materials, constructing new plants, disposing of waste or by transporting products. During the reporting period, we adopted an even more detailed approach to recording Scope 3 data. As in the past, we forwarded WACKER's carbon footprint to the Carbon Disclo-

sure Project (CDP) during the current reporting period. Registered [CDP](#) users can download the details.

We use our sustainability-reporting system (SPIRIT) to record environmentally relevant and safety-related events, to plan internal and external audits and coordinate the implementation of measures as part of our Integrated Management System (IMS).

Productivity Programs

High productivity is a factor in WACKER's success. WACKER boosts productivity along the entire supply chain via its Wacker Operating System (WOS) program. Our goal is to continue reducing specific operating costs every year. WOS results are regularly reported to the Executive Board.

2017 and 2018 saw the implementation of more than 1,300 projects at our operational business and corporate departments. Some 900 of these concerned operations, with the corporate departments accounting for 400.

The focus of WOS during the reporting period was on improving:

- Plant utilization levels
- Specific energy consumption
- Raw-material yields
- Labor productivity
- Specific maintenance costs

In 2017, labor productivity improved by 6 percent across all WACKER plants. Specific operating costs fell 6 percent, with specific maintenance costs dropping 5 percent. Specific energy consumption within operations fell by more than 3 percent in 2017.

Higher energy prices and lower volume increases meant that specific operating costs rose 1 percent in 2018 and that the business divisions were unable to improve labor productivity or specific maintenance costs. On average, specific energy consumption within operations fell by almost 3 percent in 2018.

In the period under review, the WOS measures implemented made a business value contribution of some €140 million.

During the two-year reporting period, the WOS ACADEMY held courses at which over 200 employees were trained in new productivity methods, such as Six Sigma and LEAN. In addition to this training, we carried out projects aimed at reducing specific costs.

Idea Management

The ideas submitted by its employees help WACKER to do things better and stay competitive. In 2018, the number of improvement suggestions submitted rose slightly year over year. The participation rate (number of submitters per 100 employees) and the total benefit rose as well.

Since 1975, WACKER employees have submitted around 156,500 improvement suggestions. Over half of these – 85,160 suggestions – have been implemented, leading to company savings of €155 million. Submitters have received a total of €37.5 million in bonuses.

Idea Management

	2018	2017	2016
Number of improvement suggestions	6,425	6,345	6,504
Total benefit (€ million)	4.9	4.4	5.7
Participation rate ¹ (%)	35	33	34

¹ Submitters per 100 employees

The WACKER Employee Suggestion Program celebrated its 90th anniversary in 2018, holding discussion groups and organizing events and campaigns, such as an online quiz and the “Ensuring Health and Safety in Routine Work” initiative. This initiative asked employees to submit ideas about occupational safety. As a further measure to raise employee awareness of idea management, we made a [film](#) (in German only) that can be downloaded from our video portal.

At the 2018 National Congress held by Germany’s “ZI” Idea Management Center, a WACKER team won first prize in the Production and Engineering category. The [Idea Management Center](#) (ZI; website available in German only) is an interest group that promotes and disseminates idea and innovation management in Germany. WACKER is one of 150 member companies. The winning team convinced the judging panel with an intelligent combination of IT systems that speeds up lab results and saves analytical costs.

The WACKER BIOSOLUTIONS sites in Jena and Halle have been integrated into the Employee Suggestion Program since 2017.

We extended our online suggestion tool in 2017 to include a campaign function that features idea voting. Our aim is to intensify the controlled nature of idea management. Teams can use this new function, for example, to vote on ideas or ask a specific group of participants to submit suggestions for a common goal.

Risk and Compliance Management

GRI 102-17 | GRI 102-30 | GRI 102-33 | GRI 205-1 |
GRI 205-2 | GRI 205-3 | GRI 206-1 | GRI 307-1 |
GRI 412-1 | GRI 412-2 | GRI 419-1 |

Managing Corporate Risks

Risk and compliance management is an integral part of corporate management at WACKER. As a global company, WACKER is exposed to numerous risks directly attributable to our operational activities. Starting from an acceptable level of overall risk, the Executive Board decides which risks we should take to utilize opportunities available to the company.

The goal of risk management at WACKER is to identify risks as early as possible, to evaluate them adequately and to take appropriate steps to reduce them. We define risks as internal and external events that may have a negative effect on the attainment of our targets and forecasts. The scope of consolidation for risk reporting purposes comprises all WACKER majority shareholdings.

As a chemical company, we have a particular responsibility to ensure plant safety and protect human health and the environment. At all our production sites, there are employees who are responsible for plant and workplace safety and for health and environmental protection. Our risk management system complies with legal requirements and is integral to all our decisions and business processes. The Executive and Supervisory Boards

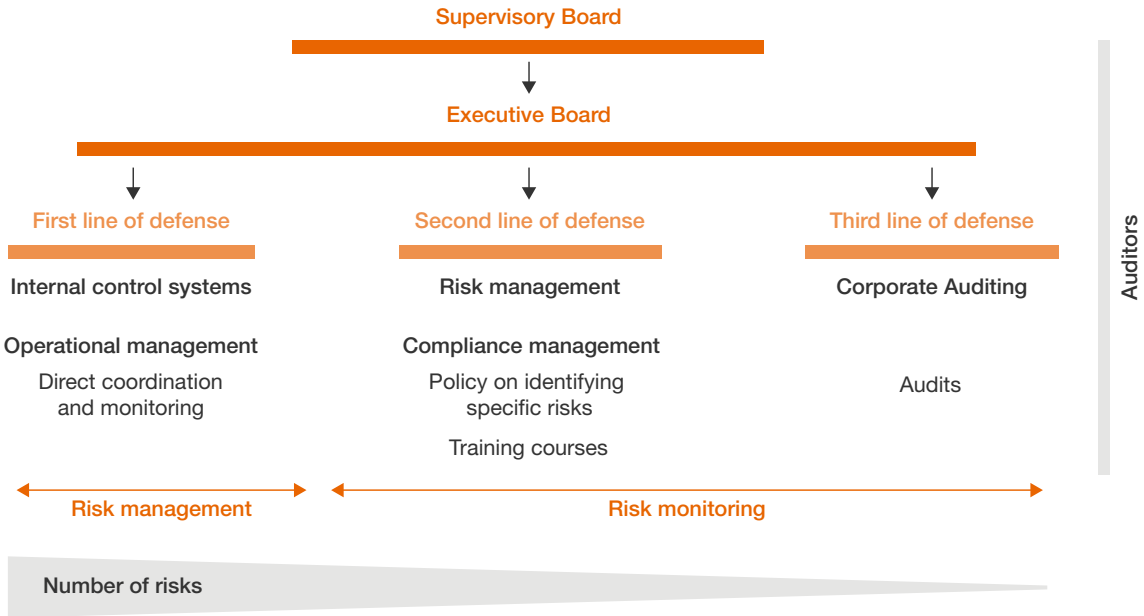
are regularly informed about the current risk status in the Group and at each business division.

WACKER follows the “Three Lines of Defense” model to effectively manage corporate risks and ensure compliance with legal provisions and the ethical principles of corporate management.

- The first line of defense is centered on operational management, which involves coordinating, monitoring and managing the risks that arise. It also includes the establishment of functioning internal control systems within the individual operational units.

- The second line of defense is formed by risk and compliance management. Risk management systematically tracks the main risks facing operational units and reports on the risks to the Executive Board. Compliance management ensures that the ethical principles of corporate management are observed. It identifies the relevant legal requirements and amendments, forwards them to all affected corporate units and holds courses on compliance for employees. The tax compliance management system ensures that Wacker Chemie AG and its subsidiaries comply fully and punctually with their obligations under tax law. Early involvement of the tax department

“Three Lines of Defense” Model



and checks on preliminary tax-related processes help minimize the corresponding risks.

- A third line of defense is provided by the Corporate Auditing department, which acts as an independent monitoring body for the Executive Board. This department conducts audits at regular intervals to review the risk management activities in place at the various corporate units and to check whether the internal control systems run by the operational units are effective. Corporate Auditing also liaises with the Compliance Management team, for example if anti-corruption investigations are undertaken or related measures implemented.

Compliance Management

WACKER's ethical principles of corporate management exceed legal requirements. They are summarized in our Code of Conduct. The Compliance Management department is responsible for ensuring that these principles and all related legislation are observed throughout the company. Training courses on compliance raise employees' awareness of the relevant risks and convey binding rules of behavior for daily work routines. These aspects are covered by WACKER's compliance regulation.

Our Compliance Regulation includes provisions on supplier management that cover information about conflict minerals.

Employees are instructed to inform their supervisors, the compliance officers, the employee council or their designated HR contacts of any violations they notice. They also have the option of reporting suspected violations anonymously via a protected channel.

WACKER has set up whistleblower hotlines in the USA, Brazil and China. WACKER Greater China has, for instance, a compliance hotline that enables employees and business partners to report any breaches anonymously. Furthermore, every year, employees in the region must sign a declaration regarding proper conduct.

The Group's compliance officers are responsible for implementing the compliance rules and regulations, and are on hand to advise employees on all matters relating to compliance. The WACKER Group has 21 compliance officers around the world: in Germany, the USA, China, Japan, India, South Korea, Brazil, Mexico, Singapore, Russia, Norway and the United Arab Emirates. Compliance issues arising in countries not listed here are handled in Germany by the Chief Compliance Officer with assistance from the Legal department.

Prevention is a key aspect of the work of compliance officers. They train, inform and advise employees and management on, for example, strategies and measures to prevent corruption and other breaches of the law. In 2018, a focus of classroom-training sessions was on India, Lebanon, Saudi Arabia and the United Arab Emirates. A year earlier,

we focused on Southeast Asia: Indonesia, Philippines, Singapore, Thailand and Vietnam. During the reporting period, training was offered not only to our own employees at the sites in question but also to our distributors' employees in these countries. Further classroom sessions were held at the Dubai site.

WACKER's compliance programs are designed to prevent misconduct, minimize the repercussions of misconduct, and – in accordance with the UN's Global Compact – identify any cases of corruption or other legal infringements. To promote compliance, we use such organizational methods as the separation of responsibility and our dual-control policy. Separation of responsibility makes it impossible for any one employee to single-handedly carry out transactions involving payments. The purchasing unit is thus quite distinct from the ordering unit. Dual control ensures that every critical transaction is checked by a second person.

Nothing came to our attention in the period under review that would have constituted a major infringement of compliance or would have endangered the proper functioning of the control systems and for which the effect on earnings would have exceeded €5 million.

Internal Auditing

The third line of defense is provided by WACKER's Corporate Auditing department, which acts as an independent monitoring body for the Executive Board. This department shares responsibility for effective internal control systems throughout the various operational processes and systems. When setting up an internal control system, the operational units must apply certain principles, such as a policy of dual control. These principles are defined in an internationally applicable regulation, where they are explained in more detail for critical functions.

On behalf of the Executive Board, Corporate Auditing performs – mainly process-specific – reviews of all relevant functions and corporate units, placing its focus on internal control systems. Audit topics are selected using a risk-driven approach. This takes account of risk management reporting, as well as the reports and information provided by the corporate departments, business divisions and major joint ventures/associates. The auditing schedule is supplemented and approved by the Executive Board, and discussed with the Audit Committee. If necessary, the schedule is adjusted

flexibly during the year to accommodate any changes in underlying conditions.

As a rule, those processes, corporate units and sites which demonstrate a higher risk potential in risk assessment are subject to more frequent audits. Criteria for the risk assessment include:

- The relevance of the function within the Group
- Consequences of possible loss or damage
- Possible effects of infringements of compliance
- The nature of findings from previous audits
- Classification of the country in line with the Corruption Perceptions Index (CPI)

During the reporting period, Corporate Auditing

- conducted audits at a number of subsidiaries and sites worldwide, examining the suitability, appropriateness and cost-effectiveness of key business processes, and the functionality of internal control systems.
- Another focus was on information technology, where audits were performed in the areas of IT security, IT infrastructure and license usage.
- Moreover, selected processes were audited in areas such as logistics, engineering, human resources and accounting.

- The conformity and efficiency of logistics processes and functions were audited,
- as were certain hazardous-material storage facilities to make sure they were operating in compliance with regulations.

Any process-optimization measures derived from the audits are implemented and systematically monitored by the Corporate Auditing department. It provides the Executive Board and Audit Committee with regular reports on the results and implementation status of the various measures.

External Controls

When auditing our annual financial statements, the external auditor examines our early-warning system for detecting risks. The auditors then report to the Executive and Supervisory Boards.

In 2018, an external audit examined, among other things, whether our internal auditing system complied with Standard 983 of the Institute of Public Auditors in Germany (Institut der Wirtschaftsprüfer). The audit determined that Wacker Chemie AG's Corporate Auditing department fulfills the International Professional Practices Framework (IPPF) requirements.

Preventing Corruption and Bribery

There is no room in our business model for bribery or corruption. Our principles on this are contained in our [Code of Conduct](#). All WACKER employees are required to follow this code.

Training courses on compliance sensitize employees to specific risks and to the rules of conduct that apply at work. Since 2018, compliance courses have been mandatory groupwide for all WACKER employees. Such courses previously targeted only employees with external business contacts. Recently, a compliance course was launched for all industrial workers in production, workshops, laboratories and logistics.

Employees involved in import and export processes must complete online training on export control every two years. Individuals working in particularly sensitive jobs, such as managing directors of regional subsidiaries and export control representatives, must complete a refresher course every year. Export control is based on national and international laws and aims to prevent the spread of weapons of mass destruction, combat international terrorism and uphold human rights. In this regard, it is important to inspect not only the item to be exported, but also the country of destination, the customer and the end use of the products.

Compliance Cases

	2018	2017	2016
Corruption Prevention			
Level of key fines and number of non-monetary penalties for non-compliance with requirements of environmental legislation	31	26	26
Percentage of legal entities examined for corruption/bribery risks	20	17	19
Employees trained in corruption prevention (%) ¹	50	50	50
Corruption and Bribery Incidents			
Examined	2	4	2
Concluded	1	4	1
Measures Taken as a Result of Corruption and Bribery Incidents²			
Written warnings	–	–	–
Termination of employment contract	–	1	1
Number of complaints	–	–	1
Level of key fines ³ and number of non-monetary penalties for breaches	–	–	–
Compliance Incidents Relating to Products/Environmental Issues/Business Conduct			
Level of key fines ³ for breaches of legal requirements relating to the supply and use of products and services	–	–	–
Level of key fines ³ and number of non-monetary penalties for non-compliance with environmental legislation	–	–	–
Number of complaints about anticompetitive behavior, violation of antitrust or monopolies legislation	–	–	–

¹ Employees who have contact with external business partners receive training every two years. That's around 50 percent of all WACKER employees.

² WACKER Germany only

³ Level of key fines: starting at €10,000

WACKER's corporate culture is characterized by mutual respect and trust. However, inappropriate behavior on the part of individual employees can never be eliminated. In these cases, we rely on our internal risk assessments.

WACKER's business activities are predominantly in countries with a low or very low risk of corruption, according to Transparency International's Corruption Perceptions Index (CPI).

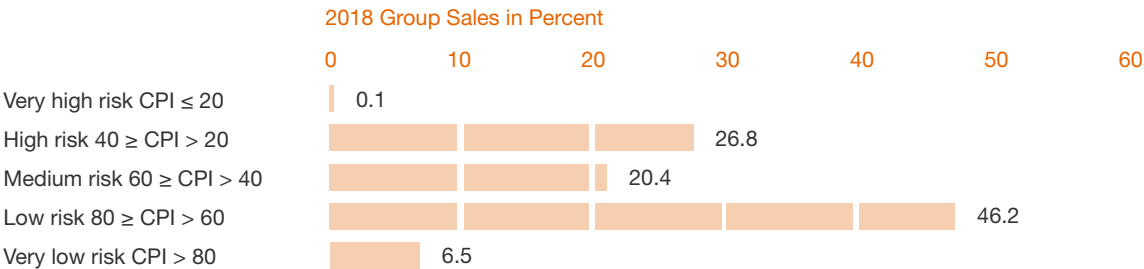
Data Protection

GRI 418-1

The way in which we gather and process personal data relating to all employees and external parties with whom we are in contact complies with data protection regulations with the sole aim of meeting the intended purposes.

European privacy law has changed fundamentally since May 25, 2018. Taking immediate effect in all member states of the European Union, the General Data Protection Regulation (GDPR) provides a uniform basis for implementing privacy law throughout the EU. The role of privacy law is to protect personal data. It includes any information about natural persons, such as name, contact data, date of birth, religion, gender, and even simply email addresses. The GDPR regulates the use and processing of personal data and obligates every company that

Sales Shares as a Function of Corruption Risk as per Transparency International¹



¹ Transparency International's Corruption Perceptions Index (CPI) ranks countries according to the level of corruption perceived in the public sector. The categories in this graph were compiled independently.

records personal data to do so only within narrow constraints and by taking a whole host of protection mechanisms into consideration.

Every WACKER employee who records, uses or processes personal data must always ask themselves whether this data is indeed necessary and has to be stored and if so, for how long. We must all undertake to ensure that no infringements of privacy law occur. Even before the GDPR took effect, we had introduced mechanisms to ensure compliance with existing data protection legislation.

All the same, the new EU regulation entailed considerable adaptation of these mechanisms. In 2017, we analyzed what action needed to be taken and adopted suitable measures. Applications and processes were adapted to GDPR requirements.

A mandatory online data protection course for employees was introduced in 2018. Employees who work in particularly affected departments are given additional individual training. Our Compliance Regulation now contains a supplement that describes the main aspects of the GDPR.

Information about the GDPR is available on our website and on our intranet. We use a film – which can be viewed on our internal video portal – to sensitize employees groupwide about the proper conduct to adopt when dealing with internal or external questions to do with data protection.

There were no justified complaints relating to the violation of customers' privacy or the loss of customer data during the reporting period.

Customer Management

GRI 102-43

WACKER provides products and services that benefit its customers. Satisfied customers are the basis of our success. To steadily increase their satisfaction, we are in constant dialogue with not only customers, but also suppliers and logistics providers.

Our customer relationship management (CRM) system provides effective support. Called Salesforce, our new CRM system contains customer profiles and all other relevant information about our customers. Salesforce complies with GDPR requirements.

We use this system to support key Sales activities, such as correspondence, the recording of business opportunities and the processing of samples. Complaints, too, are entered into this CRM system and

tracked until our final reply has been sent to the customer. Standardized measures, some of which are initiated automatically, ensure that both the customer and our team in charge are always kept up to date on the complaint status. This helps us to enhance processes, and stops errors from recurring.

WACKER offers existing and prospective customers a further service: the WACKER Infoline. Specialists provide advice on products and related applications by phone or email. If someone asks a question, they get initial feedback within eight hours and a detailed answer within 48 hours.

We regularly solicit feedback from our customers about the quality of our products and services. WACKER POLYMERS, for example, conducts annual customer surveys. Well over 100 Western European customers of the Construction Polymers business team took part in an online survey in

2018, answering questions regarding, for example, customer satisfaction with our products and services, and sustainability and digitalization. As in the past, our surveys and analyses confirmed positive customer feedback during the reporting period.

Our chemical business is determined by three customer categories: key accounts, customers, and distributors. At the end of the reporting period, WACKER had 36 key accounts, with whom we generated some 24 percent (2017: 25 percent) of our chemical-division sales. More than 50 percent of sales in 2018 stemmed from about 8,000 active relationships with other customers (2017: 55 percent). Around 23 percent came from distributors (2017: 20 percent). 20 key distributors accounted for about 50 percent of all distributor sales (with 50 key distributors accounting for around 65 percent in 2017).

Awards and Prizes

WACKER attaches particular importance to integrated environmental protection, high-quality products, excellent service and commitment to society.

This is reflected in the awards we've received from customers, authorities and organizations.

Environmental Protection, Quality and Commitment to Society: Awards and Prizes in 2017

Recipient	Award	Sponsor
Wacker Chemie AG		
	2017 "Inclusion in Bavaria – We Work Together" emblem	Bavarian Government
	Outstanding Vocational Training Company 2017 for Nünchritz site	Dresden Chamber of Industry and Commerce
	2017 Innovation Award for HELISOL®	SolarPACES Technology Network
	Supplier Award 2017 for Long-Term Relationship	Mölnlycke Health Care
	Top Supplier Award 2017	ResMed Ltd. Australia
	Prime Status 2017	ISS oecom Corporate Responsibility Ratings
	2017 Aenus Prize	Inn-Salzach Region
Wacker Chemical Corp.		
	Gold Status 2017	Wildlife Habitat Council, American Chemical Society
WACKER Greater China		
	Responsible Care® Chairman Award 2017	Association of International Chemical Manufacturers (AICM)
	Honour Award 2017 for economic and social development	Suzhou Government
	More than a Market Award 2017	German Chamber of Industry and Commerce in China, German Consulate General in Shanghai, Bertelsmann Foundation

Environmental Protection, Quality and Commitment to Society:
Awards and Prizes in 2018

Recipient	Award	Sponsor
Wacker Chemie AG		
	2018 Family-Friendly Company certificate	Bavarian Government
	2018 seal of approval for career-promoting and fair management trainee programs	Absolventa job portal
	First Prize in Idea Management 2018 (Production and Engineering Category)	ZI Idea Management Center
	Supplier of the Year 2018	DuluxGroup Australia
	2018 reputation analysis , first place in the chemical, pharmaceutical and biotechnology industries	Statista market research portal and brand eins financial magazine
	2018 Responsible Care® Award	VCI's Bavarian branch
	German Innovation Award 2018 for Coldplasmatech with SILPURAN®	Corporate initiative with Wirtschaftswoche magazine and Germany's Federal Ministry for Economic Affairs and Energy
	Gold Level 2018	EcoVadis
	Prime Status 2018	ISS oecom Corporate Responsibility Ratings
Wacker Chemical Corp.		
	Platinum Best Partner Award 2018	Bradley High School
WACKER Greater China		
	Local Development Promoter 2018	China Chemical Industry News
	Employer Excellence China 2018	51job
	Excellence in Employee Development Plan 2018	51job
	Top 100 Enterprise Contributor Award 2018 and Top 10 Foreign Invested Companies 2018	Xuhui District Government
	Shanghai Magnolia Gold Award 2018	Shanghai Municipal Government
Wacker Chemicals Korea		
	2018 medal for services to industry	South Korean Ministry of Trade, Industry and Energy with the Korea Foreign Company Associations
	Safety Awards 2018	Ulsan Chamber of Industry and Commerce

Dialogue and Materiality Analysis

Communication with Stakeholders

| GRI 102-40 | GRI 102-42 | GRI 102-43 |

Companies must have the consent and support of society. We want to maintain regular and open dialogue with all stakeholders. This is one of our business principles. We believe that dialogue offers us an opportunity to prepare for new challenges promptly, avoid risks and realize our full potential.

WACKER constantly communicates with a number of stakeholder groups throughout the world: employees, customers, suppliers, analysts, investors, journalists, scientists, neighbors and politicians, as well as representatives from NGOs, authorities and associations. We conduct this dialogue in many ways – through the outreach activities of WACKER's various management levels, sites and departments. The focus is always on face-to-face discussions, i.e. on direct contact. What's more, we communicate with stakeholders through:

- Surveys (e.g. on workplace safety, sustainability and reputation)
- Publications (annual report, press releases, employee newspaper, etc.)
- Special events (open-house days, supplier days, investor roadshows, management events, etc.)
- Tradeshows;
- Committee work and presentations

Effective and Long-Lasting Employee Dialogue

The groupwide employee survey that was held in 2018 covered the topic of sustainability. 73 percent of employees around the world agreed with the following statement: "In my organizational unit, we value sustainability."

To raise the profile of the topic of "Sustainable Corporate Management" further within the Group, the Corporate Sustainability unit launched an internal sustainability week in September 2018. The campaign focused on the UN's 17 Sustainable Development Goals and illustrated the contributions that both the company and its employees make in this field. The importance of the Sustainable Development Goals is also explained in a film clip in the online version.

WACKER appointed sustainability ambassadors, who supported the campaign by presenting topics and motivating employees at their sites to make a contribution. A total of ten sites took part, holding 28 activities on topics such as avoidance of trash, getting to work in an environmentally friendly way, and the efficient use of resources during production. The various activities were assessed by criteria such as dedication, scope, impact on society and the environment, and their connection to WACKER's business model. The Sustainability Council awarded the title of "Sustainability Ambassador 2018" to a team from WACKER Greater

China, which offered its employees a week-long program of activities.

External Assessments

WACKER has been participating in the sustainability assessments of the Carbon Disclosure Project (CDP) since 2007. Wacker Chemie AG took part in the Climate Change and Water Security surveys for the chemical sector in 2018. In the CDP's Climate Change Report, WACKER achieved a B (Management) on a scale from A (Leadership) to D (Disclosure). 2018 was the first year we took part in the Water Security questionnaire, achieving a D (Disclosure) on a scale from A (Leadership) to D (Disclosure). Registered CDP users can download the details of both these reports.

During the reporting period, we underwent the ISS-oekom Corporate Responsibility Rating procedure and achieved a B- (Prime Status). 108 chemical-sector companies were rated, including manufacturers of petrochemicals and specialty chemicals, polymers, agrochemicals, seed and other materials. Eight companies in total achieved Prime Status; consult the industry-specific report for details.

We achieved "Outperformer" status in the sustainability ranking performed by Sustainalytics; our environmental management systems were rated as being very strong environmental management systems.

We were ranked A in the 2017 sustainability assessment carried out by MSCI (Morgan Stanley Capital International), who noted that our Corporate governance practices are generally well aligned with shareholder interests.

Audits

As in past reports, WACKER underwent social audits during the current reporting period. In recent years, these audits have been mainly required by the consumer goods sector, which established an information and collaboration platform called SEDEX. WACKER is a member of this platform. In the period under review, the auditors inspected the sites at Jandira (Brazil) and Adrian (USA) against the SMETA 6.0 Standard (SMETA = SEDEX Members Ethical Trade Audits). The results can be viewed on the SEDEX Global platform.

We achieved Gold Level in re-assessments by Eco-Vadis CSR Ratings in 2017 and 2018.

Analysis of Material Sustainability Topics

| GRI 102-43 | GRI 102-44 | GRI 102-46 | GRI 102-47 |

WACKER communicates regularly with numerous stakeholder groups – ranging from employees, customers, suppliers, analysts, investors and journalists to scientists, neighbors, politicians, associations and NGOs. For years, WACKER has regularly held stakeholder surveys as part of its sustainability reporting.

Relevance of Our Sustainability Topics

In 2018, a global survey identified which sustainability topics are vital to our stakeholders and WACKER's upper management. The company and stakeholders give top priority to the following five topics:

- Safety of production plants
- Product safety
- Competitiveness and value trends
- Occupational safety and employee health
- Compliance.

As a chemical company, we also attach particular importance to the following topics:

- Transport and storage safety
- Risk management
- Energy consumption
- Conservation of natural resources
- Development of new, sustainable products

As part of our materiality analysis, we also took account in this report of the statutory definition of materiality pursuant to Sections 315 b, 315 c and 289 b through 289 e of the German Commercial Code (HGB). For major non-financial issues, we ensure that the relevant stakeholders are involved. The corresponding Executive Board committees deal with all key topics.

Participants in the Sustainability Survey

34 of WACKER's top managers participated in the online survey, including the Executive Board, members of the Corporate Leadership Team (CLT) and Group Coordinators for the following key aspects of sustainability:

- Environmental aspects
- Safety
- Sustainability
- Energy management
- Health
- Product safety
- Hazardous goods
- Export control
- Personnel
- Compliance management

267 stakeholders (individuals with links to our company) also completed our online questionnaire. The survey was conducted in Germany, China and the USA among other countries. It included analysts, customers, suppliers, employees and politicians, as well as representatives from authorities and NGOs.

Potential of Our Sustainability Performance

We polled stakeholders and top management not only about the relevance of sustainability topics, but also about the improvement potential of WACKER's sustainability performance. Stakeholders saw the greatest improvement potential as affecting the following topics:

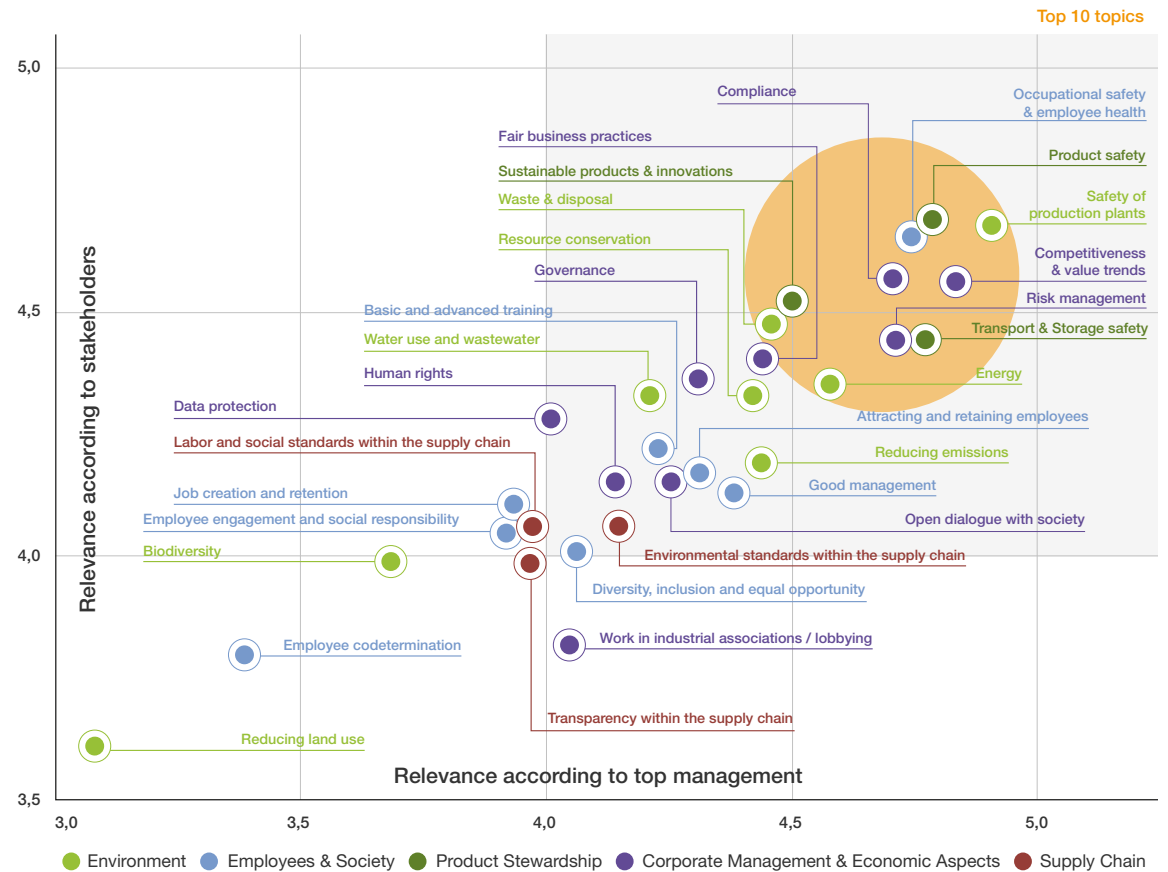
- Energy (environmental aspects)
- Attracting and retaining employees (employees)
- Competitiveness and value trends (economic aspects)
- Sustainable products and innovations (product stewardship)
- Transparency within the supply chain (supply chain)

The majority of top managers identified the biggest improvement potential as affecting the following topics:

- Energy (environmental aspects)
- Diversity, inclusion and equal opportunity (employees)
- Competitiveness and value trends (economic aspects)
- Sustainable products and innovations (product stewardship)
- Transparency within the supply chain (supply chain)

For reasons of continuity, we still report to a limited extent on topics that were rated by top managers and/or stakeholders as being of less relevance.

Materiality Analysis (Results of the Stakeholder Survey Held in 2018)



Goals and Outlook

Sustainability has been firmly rooted in our business processes for many years. Sustainable development means balancing economic, ecological and social factors in everything we do. The fact that we have made sustainability one of our strategic goals emphasizes its importance. As an innovative chemical company, WACKER makes a vital contribution to improving the quality of life around the world. In the future, we want to continue developing and supplying solutions that meet our rigorous demands – creating added value for our customers and shareholders, and growing sustainably.

Sustainability also lies at the heart of our strategic medium-term plan for the WACKER Group through 2020, which we presented at the Capital Market Day in October 2016. One of the five strategic goals reads: “Focusing even more strongly on sustainability.”

Our strategic alignment is based on three pillars to achieve a sensible balance for the measures we take and the goals we set. In this regard, we take account of a variety of interest groups, first and foremost our customers and employees, as well as our shareholders, hence the name of our program: SustainaBalance®.

SustainaBalance® – a Strategic Balance for Our Goals

Agenda 2022



Value UP

We are enabling our customers to provide more sustainable solutions



Footprint DOWN

We create efficient and safe operations, using resources responsibly, eliminating waste and minimizing our footprint



Collaboration BEYOND

As part of society, we are striving for a more sustainable value chain together with all our partners

Management

STATUS OF GOALS SET IN 2015/2016

Integrated management system: certification of the Charleston site, USA, to the ISO 14001 environmental standard. Recertification of all sites according to the new specifications of the ISO 9001:2015 and ISO 14001:2015 standards.

Corporate entity: Charleston site (USA) and groupwide

Deadline: 2017

Implementation status:

All the sites were recertified to ISO 9001:2015 and 14001:2015 in 2017. The Charleston plant (USA) was added to the ISO 14001 Group certificate in April 2019.

NEW GOALS

Integrated management system: Our Istanbul technical center will be added to the ISO 9001 Group certificate in 2020. The German sites will be recertified to new ISO 50001:2018.

FUTURE TOPICS

Since 2019, we have been aligning our occupational health & safety processes and standards with the new ISO 45001:2018 standard (previously OHSAS 18001). We are preparing certification of the sites in Jandira (Brazil) and Jincheon (South Korea) in line with the new ISO 45001:2018 standard.

In 2019, the regional focus of WACKER's sustainability management activities will be on Europe, and on Southeast Asia in 2020, where we will examine environmental, health and safety aspects at individual sites.

Supply chain

STATUS OF GOALS SET IN 2015/2016

Evaluate the sustainability performance of our main suppliers, which cover at least 70% of our procurement volume, as part of the “Together for Sustainability” (TfS) initiative

Corporate entity: Groupwide

Deadline: 2020

Implementation status:

More than 65 percent of our key suppliers and over 80 percent of the procurement volume they account for are covered by TfS.

FUTURE TOPICS

The TfS Initiative and WACKER have set themselves the following goal over the next few years: to use the data acquired to make greater advances as regards improvements to the supply chain, as well as to place even greater emphasis on examining and remedying existing weak spots. We regularly discuss sustainability topics and possible improvements with our suppliers, such as by holding conferences and information events and conducting audits.

Our aim is to use TfS to evaluate the sustainability performance of all our key suppliers.

WACKER is aiming to become a member of RSPO (Roundtable on Sustainable Palm Oil) by the end of 2019. The goal is to gradually increase the amount of certified palm oil used.

Production



LONG-TERM GOALS

Lower our average specific energy consumption (amount of energy per net production volume) by 50 percent, with 2007 as the base year.

Corporate entity: WACKER Germany

Deadline: 2022

Reduce specific CO₂ emissions by 15 percent per metric ton of net production – while maintaining a comparable product portfolio – from 2012 onward.

Corporate entity: WACKER Germany

Deadline: 2022

Reduce specific dust emissions (per metric ton produced) by 50 percent, with 2012 as the base year.

Corporate entity: Groupwide

Deadline: 2022

Reduce specific emissions of relevant volatile organic compounds (VOCs per metric ton produced) by 25 percent, with 2012 as the base year.

Corporate entity: Groupwide

Deadline: 2022

No incidents with relevant environmental inputs

Corporate entity: Groupwide

Deadline: Annually

Implementation status:

Goal was achieved in 2017. The loss event at the Charleston, USA site in September 2017 did not cause any relevant substance input into the environment.

Five metric tons of [vinyl acetate](#) (webpage available in German only; easily flammable and German Water Pollution Class 2) leaked from a pipe that had not been closed following maintenance work at the Burghausen site in April 2018. A relevant amount soaked into pervious ground and was eliminated by local remediation measures.



NEW GOALS

Reduce specific NO_x emissions by 25 percent, with 2012 as the base year.

Corporate entity: Groupwide

Deadline: 2022

The long-term goals regarding CO₂ emissions and energy consumption that applied at WACKER Germany have now been extended to the WACKER Group.

Reduce specific CO₂ emissions by a third, with 2012 as the base year.

Corporate entity: Groupwide

Deadline: 2030

Reduce specific energy consumption by half, with 2007 as the base year.

Corporate entity: Groupwide

Deadline: 2030

Reduce specific energy consumption by an annual 1.5 percent.

Corporate entity: business divisions

Deadline: annual (operational target)

FUTURE TOPICS

Energy

We are modernizing the Burghausen site's combined heat and power (CHP) plant for electricity and steam generation by installing a new gas turbine. This turbine operates more efficiently and more environmentally soundly than the existing one, which is almost 20 years old. Our investment helps to reduce greenhouse gas emissions further. With an output of 130 MW, the new gas turbine achieves fuel efficiency of more than 86 percent.

By making this investment, we will reduce carbon dioxide (CO₂) emissions by some 300,000 metric tons a year compared to the current public energy mix. Thanks to improved waste-gas technology, emissions of nitrogen oxide (NO_x) will drop by around 30 percent.

Water

We have been taking various measures since the start of 2019 to help improve our rating in the CDP's Water Security Report (2017 reporting year).

Nature Conservation

We launched a project in 2019 to upgrade the ecological status of unused green spaces at the Burghausen site with the aim of improving the habitat for insects.

A section of the embankment of the Alz canal near the Burghausen site is being cultivated as a wildflower meadow to encourage local flora and attract insects. As the owner of this land, we are using this project to stimulate ecological development in partnership with the Landschaftspflegeverband Altötting (Altötting Landscape Conservation Association; German-language website only). The project is supported by the Bavarian Environment Ministry's landscape conservation program.

Products

FUTURE TOPICS

Product Safety

During the next reporting period, we will continue to focus on the following:

- REACH registration of substances in due time and continued coordination of tasks relating to the WACKER Group and ECHA (European Chemicals Agency)
- Implementation of international GHS (Globally Harmonized System) legislation in due time
- Implementation of GPS (Global Product Strategy) through publication of GPS Safety Summaries for all relevant substances registered under REACH

As of 2020, chemical companies within Europe must supply information to the ECHA's network of poison centers. The European Commission and the chemical industry are working on the technical requirements for this. Another regulatory focal point is chemical nanomaterials. The number of national registers in which nanomaterials are recorded is increasing and will further augment the administrative workload for companies active in this market.

At the editorial deadline of this report, the nature of any post-Brexit chemicals legislation intended to replace REACH registration – should REACH not be adopted – had not yet been specified.

Environmental Compatibility

As part of the WACKER Sustainable Solutions program, our business divisions continue to conduct sustainable portfolio assessments.

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Research & Development

The Group’s research and development work remains focused on key strategic projects. WACKER intends to spend 10 percent of its R&D budget on key projects in 2019 (2018: 10 percent). Our R&D work prioritizes the highly promising fields of energy, electronics, consumer care, biotechnology and construction applications. One area of special emphasis is energy storage and renewable-energy generation.

Safety

STATUS OF GOALS SET IN 2015/2016

Reduce number of safety and environmentally relevant incidents per million hours worked to below 0.7

Corporate entity: Groupwide

Deadline: 2020

Implementation status:

In 2018, the number of safety-related and environmentally relevant incidents per million hours worked was still greater than the 2020 target. As of 2019, Wacker Chemie AG is classifying relevant incidents as per the updated Cefic or VCI definition. This will lower individual trigger thresholds and thus make smaller incidents relevant as well. Nonetheless, the set corporate goal of an incident rate of less than 0.7 per million hours worked by 2020 remains unchanged.

FUTURE TOPICS

Experts in explosion protection from all over the Group will be sharing their knowledge and experience and discussing improvements during 2019. In this regard, we will be providing additional support in the form of workshops in Asia and the Americas.

Employees



STATUS OF GOALS SET IN 2015/2016

“Health culture 2020” project: WACKER aims to develop its corporate health culture further in order to improve staff health and keep employees fit for work.

Corporate entity: WACKER Germany

Deadline: Implementation from 2016 on, sustainable improvement by 2020

Implementation status: The project made progress in the period under review. It focuses on four main areas: exercise, nutrition, state of health and prevention. Employees can avail themselves of programs relevant to each of these topics.

Reduce accident rate (number of accidents with lost workdays per million hours worked) to at least 1.7

Corporate entity: Group

Deadline: 2020

Implementation status:

The number of accidents with workdays lost totaled 2.9 per million hours worked in 2018. We are not satisfied with our accident rate and are stepping up our safety efforts to meet the goal in 2020.

Reduce chemical accidents with missed workdays to 0 and decrease chemical accidents with the potential for missed workdays by 50% compared to 2015

Corporate entity: Groupwide

Deadline: 2020

Implementation status:

2017 was the first time that the Groupwide goal of “Zero Chemical Accidents Involving Missed Workdays” had been met. This goal was not met in 2018, as three such accidents occurred that year.

The number of all relevant chemical accidents throughout the Group (whether lost workdays were involved or not) dropped from 65 in 2016 to

54 in 2018. The goal to reduce the number of chemical accidents by half by 2020 remains in place.



NEW GOALS

The aim is to raise the proportion of women at WACKER's first level of management to at least 16 percent and to raise it to at least 18 percent at the second level.

Corporate entity: Groupwide

Deadline: December 31, 2019

Bringing global occupational-safety processes and standards into alignment with the new international ISO 45001 standard.

Corporate entity: Group

Deadline: 2019



FUTURE TOPICS

The focus at our German sites in 2019 is on enhancing our safety culture by means of specific programs in the following areas: “Cleanliness and Tidiness,” “Avoidance of Distractions Caused by Cellphones” and “Taking ‘Outsiders’ on Inspection Rounds of Your Plant to Spot Any Shortcomings.”

Society

FUTURE TOPICS

WACKER's CHEM₂DO[®] experiment kit:

Expanding Additional Digital Services for Schools

Our CHEM₂DO[®] online platform gives teachers and students added value for innovative lessons: animations and examples of applications relating to the experiments in our kit can be viewed there. The animations have been specially designed for use in chemistry lessons. They make invisible processes visible and give students a deeper understanding of the chemical reactions and interactions taking place in the experiments. We presented our teaching tools at the didacta 2019 tradeshow and plan to return there in 2020.

“Young Scientists” Competition

We sponsor the Bavarian stage of the Young Scientists competition and will be organizing it for the 12th time in 2020.

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Supply Chain

In order to ensure sustainable business practices, WACKER places great emphasis on sustainable supply-chain management. WACKER is a member of the “Together for Sustainability” (TfS) procurement initiative.

Most of the freight containers that leave our sites in Germany are transported by rail mainly to North Sea ports.

Sustainability Along the Supply Chain

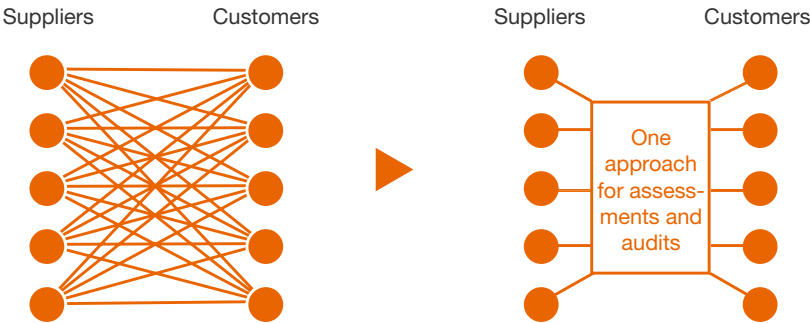
| GRI 102-9 |

Since WACKER has production sites in Europe, the Americas and Asia, it procures goods and services from numerous countries. As a member of both the United Nations Global Compact and the chemical industry's Responsible Care® initiative, we are committed to verifying that our suppliers fulfill generally accepted sustainability principles. Particularly important issues include working conditions, ethical standards, safety standards (especially for handling hazardous materials) and the management of local resources (water use, energy consumption, etc.).

For this reason, WACKER joined the Together for Sustainability (TfS) initiative in 2015. Launched by the chemical industry, this procurement initiative developed a process for auditing and assessing a supplier's sustainability performance. Standardized audit results are accessible to all TfS members – this allows suppliers to qualify for multiple customers with just one audit.

The 23 member companies of the TfS initiative work as a non-profit organization in collaboration with the European Chemical Industry Council (Cefic). In 2018, the Chartered Institute of Procurement and Supply (CIPS) recognized the initiative as a “Best Third-Sector/Not-for-Profit Procurement Project” with its CIPS Supply Management Award.

Sharing Supplier Evaluations through TfS



Processes and Tools

| GRI 308-2 | GRI 414-2 |

We identify our 500 most important global suppliers with the designation “Key Suppliers,” with the aim of using TfS to evaluate the sustainability performance of all of our key suppliers. Since joining TfS, we have made good progress along this path: over 65 percent of our key suppliers and over 80 percent of the global procurement volume they account for are already covered by TfS. Overall, more than 60 percent of our global procurement volume in 2018 was covered by TfS – for raw materials and energy, that figure is around 80 percent.

We document TfS goal attainment in monthly management reports.

The results of TfS assessments/audits are integral to our process of supplier evaluation. When the results are unsatisfactory, we speak to the supplier about how they could make improvements. Reassessments or repeated audits are used to follow up on progress, and these have resulted in improvements for roughly 60 percent of affected suppliers. Consistently poor results and lack of cooperation have consequences, and may ultimately lead to business relations being terminated.

Further, we expect our suppliers to use a management system that meets the requirements of

ISO 9001 (quality) or comparable specifications such as GMP (Good Manufacturing Practice). In the case of industrial suppliers, we also require certification to ISO 14001 (environmental protection).

Each year, WACKER honors its best suppliers and freight forwarders at annual supplier and logistics days – these now include an award in the “Sustainability” category as well.

TfS Supplier Evaluation

| GRI 308-2 | GRI 407-1 | GRI 414-2 |

Suppliers are evaluated by two methods:

1. Assessments based on a questionnaire issued by EcoVadis, an independent external service provider
2. Audits carried out by a TfS-certified auditing company

Assessments: Based on the principles of the UN's Global Compact and the Responsible Care® initiative, these online questionnaires are adapted to the size, country of origin and sector of the supplier in question. The assessments examine 21 criteria relating to the environment, social responsibility, ethics and the supply chain. EcoVadis specialists

analyze the information provided by the suppliers, add their own research findings and summarize the results in the form of a scorecard – which is linked to a corrective action plan. The assessments evaluate the sustainability performance of suppliers on a corporate level.

Audits: External auditors visit individual supplier sites and carry out on-site inspections. The TfS initiative regularly reviews auditor qualifications via a qualification training course and a corresponding test. As a key part of the audits, employees are asked questions to determine whether the information provided by management is implemented in the workforce. The audits cover 33 criteria relating to management, the environment, health & safety, labor law, human rights, and governance.

The auditors summarize their findings in a detailed report, which also contains a corrective action plan. Depending on the results, assessments and audits are valid for a period of one to three years.

As a general principle, all key suppliers must have a TfS assessment. Individual audits are performed in addition to the assessments – particularly when the supplier's business involves specific risks, and WACKER has defined risk regions and risk industries to this end. Also, suppliers with below-average EcoVadis assessment scores are singled out for

audits. Our medium-term goal is for all of our key suppliers to receive at least 45 of 100 theoretically possible points on their assessments. In our audits, we aim for no serious deviations from target specifications (critical or major findings) among our suppliers.

Over 200 WACKER suppliers participated in TfS assessments in 2017 and 2018, so that approx. 800 suppliers had valid TfS assessments by the end of 2018.

TfS audits were intensified a great deal – WACKER conducted a total of over 50 TfS audits during the reporting period, raising the overall number of audited suppliers to 75.

WACKER participated in setting up the [TfS Supplier Academy](#). We supplement this online supplier training program with regional classroom-based training opportunities on a regular basis. During the reporting period, these included events in the US and China.

When we joined TfS, we trained all of our purchasers in sustainability topics for the first time. Since then, the training has become an integral part of our orientation program for new purchasers.

Results

| GRI 308-2 | GRI 414-2 |

On an assessment scale of 0 to 100 percent, our suppliers had earned an average overall rating of 89 percent for all TfS audits by the end of 2018. At the same point, 62 percent of our key suppliers had achieved a score of at least 45 points or more on their EcoVadis assessments. The average performance rating for all suppliers assessed was 46.9 points.

TfS membership requires WACKER to evaluate its own suppliers in terms of sustainability and to undergo TfS assessments as a supplier itself. We were awarded the Gold Recognition Level in 2017 and 2018. In 2018, WACKER's rating rose from 65 to 72 points, placing us among the top 3 percent of the highest-scoring companies.

WACKER's US site in Adrian successfully completed a social responsibility audit during the period under review – reflecting the fact that we are supplementing sustainable stewardship of our resources by strengthening our commitment to ethical, socially responsible business practices. Proceeding according to the SMETA (Sedex Members' Ethical Trade Audit) process, the auditors investigated issues such as working conditions, occupational health and safety, environmental management and corporate ethics. We make the results of the audit available to interested customers in the Sedex (Supplier Ethical Data Exchange) database, an online platform disclosing a company's social and ethics-related processes throughout the supply chain.

Criteria of TfS Rating

We use the following criteria for assessing the CSR (corporate social responsibility) achievements of our suppliers:

- Does the supplier have a valid EcoVadis assessment?
- Or does the supplier have a valid TfS audit?
- Is the assessment and/or audit no more than three years old?

The result to do with Sustainability in our annual supplier assesment depends on

- Whether the key supplier shows willing as regards our request for a TfS rating, and on
- The actual result achieved in the TfS rating (EcoVadis assessment and/or TfS audit).

We intend to gradually raise the requirements for a good result over the next few years.

Rating	Requirements
Very good	■ A score of over 60 points on a valid EcoVadis assessment (no more than three years old) and not nominated* for a TfS audit. ■ or: A score of over 60 points on a valid EcoVadis assessment and a TfS audit with no critical or major findings.
Good	■ A score of over 45 points on a valid EcoVadis assessment and not nominated* for a TfS audit. ■ or: A score of less than 44 points on a valid EcoVadis assessment and a TfS audit with no critical or major findings.
Satisfactory	■ A score between 35 and 44 points on a valid EcoVadis assessment and not nominated* for a TfS audit. ■ or: A valid EcoVadis assessment (regardless of score) and a TfS audit (less than one year old) with critical or major findings for which follow-up actions have been initiated.
Adequate	■ A score of up to 35 points on a valid EcoVadis assessment and not nominated* for a TfS audit. ■ or: A valid EcoVadis assessment (regardless of score) and a TfS audit (one to no more than three years old) with critical or major findings.
Unsatisfactory	■ Expired or rejected EcoVadis assessment and not nominated* for a TfS audit. ■ or: A valid EcoVadis assessment (regardless of score) and a TfS audit (more than three years old) with critical or major findings for which no follow-up actions have been implemented.
No results	■ No EcoVadis assessment, no TfS audit, and not nominated* for either.

* Members of the TfS initiative can nominate a supplier for an audit if it has received a low EcoVadis assessment score, operates in a country in which CSR conditions pose a risk to the supply chain, etc.

Conflict Minerals

GRI 414-2

In some countries, severe human rights violations repeatedly arise in mining operations for certain minerals – including tantalum, tin, gold and tungsten. For this reason, WACKER takes great care to avoid procuring minerals from conflict areas. When we purchase raw materials containing tin, gold, tungsten or tantalum, we require our suppliers to confirm that neither they nor their sub-suppliers procure these minerals from the Democratic Republic of the Congo, Angola, Burundi, the Central African Republic, Republic of the Congo, Rwanda, South Sudan, Tanzania, Uganda or Zambia. Based on feedback, we have no evidence suggesting that the raw materials from our suppliers come from mines in these countries.

WACKER uses the CMRT (Conflict Minerals Reporting Template) for its reporting on conflict minerals, and the company updates this at least once each year. Developed by the Conflict-Free Sourcing Initiative (CFSI), the CMRT form simplifies how information on a material's country of origin and on the contracted smelter and refiner is communicated along the entire supply chain.

Palm Oil

WACKER SILICONES and WACKER POLYMERS use palm oil in the form of various fatty acid derivatives. Palm (kernel) oil is facing criticism for its association with frequent violations of human rights and environmental protection guidelines. For this reason, WACKER decided in 2018 to favor the use of fatty acid derivatives certified according to the Roundtable on Sustainable Palm Oil (RSPO). We have begun implementing this commitment in a production facility at the Burghausen site, and the proportion of these materials stemming from RSPO-certified sources is to be increased to 100 percent over the medium term.

The RSPO initiative is accelerating the implementation of sustainable practices in the global palm oil industry. In order to become certified, manufacturers have to demonstrate that they have a material flow control system. In addition, certified producers commit to complying with human rights standards, to reducing emissions and to refraining from clearing forests for plantations and from planting in peatlands with biotopes for protected species.



Production & Safety

WACKER has made progress in many areas that are of importance to sustainable business management. In the period under review, we invested €10 million in environmental protection.

Thomas Seitz feels he is treated as an equal despite his hearing impairment. He works in Burghausen, where integrated production reduces emissions and raw-material consumption.

Production and Safety

WACKER attaches particular importance to integrated environmental protection. This commences with product development and plant planning. WACKER continuously works on improving its production processes to conserve resources. A key task is to close material loops and recycle byproducts from other areas back into production. This enables us to reduce or prevent energy and resource consumption, emissions and waste, and to integrate environmental protection into our production processes. At WACKER, we monitor resource and waste targets at site and divisional levels.

In accordance with the core ideas of the [Responsible Care®](#) initiative, our environmental protection measures often go beyond what is legally required.

Responsible stewardship is one of the ways we contribute to the United Nations' [Sustainable Development Goals](#) (SDGs). In production, we focus on SDG 12 "Sustainable Consumption," SDG 13 "Climate Action" and SDG 17 "Partnerships for the Goals," for example.

Our groupwide standards for protecting the environment apply to all our production sites and technical competence centers. The site managers ensure that environmental protection requirements and environmental standards are met at their particular locations. The Group Coordinator for the Environment looks at how sites implement environmental standards in practice and performs random checks to verify legal compliance.

Our sites regularly inform the [public](#) about our environmental-protection activities, including annual community meetings at Nünchritz (Germany), as well as similar events with neighbors or "open houses" at Adrian (Michigan, USA) and Nanjing and Zhangjiagang in China. Our Burghausen and Nünchritz sites publish environmental reports (available in German only) containing environmental-protection facts and figures. In September 2018, we invited the public to open houses at our Burghausen and Nünchritz production sites and our central R&D facilities in Munich.

Our Burghausen and Nünchritz sites provide the public with information in the form of annual environmental and emission reports (available in German only):

- [Environmental Report Burghausen 2017](#)
- [Environmental Report Burghausen 2018](#)
- [Emissions Report Burghausen 2017](#)
- [Emissions Report Burghausen 2018](#)
- [Environmental Report Nünchritz 2017](#)
- [Environmental Report Nünchritz 2018](#)

- [Emissions Report Nünchritz 2017](#)
- [Emissions Report Nünchritz 2018](#)

WACKER has been a member of the [Bavarian Environmental Pact](#) (website available in German only) since it was founded in 1995. Since 2015, this Pact has been operating under the slogan "Jointly strengthening the environment and the economy." The Pact serves as a catalyst to promote an environmental partnership focusing on climate protection and energy conservation, raw-material efficiency and environmental technology, biodiversity, and environment-based management. Its primary aims are to strengthen companies' individual responsibility and avoid environmental pollution.

In 2018, [Saxony's Environmental Alliance](#) (website available in German only) recognized our Nünchritz site as one of the initiative's key partners with a certification valid until 2021. WACKER joined the Saxony-based partnership in 2000. It now has 150 member companies. For two decades, the partnership between Saxony's government, business, agriculture and forestry has championed innovative ways of taking responsibility for natural resources. Joining the organization means a voluntary commitment to verifying various certifications such as for the Integrated Management System and energy management system. The Environmental Alliance's advisory board sets out focus topics and targets in areas such as waste and CO₂ reduction.

Environmental Protection Costs

In 2018, WACKER invested €5.9 million in environmental protection (2017: €4.2 million). Environmental operating costs amounted to €82.9 million (2017: €78.3 million). Examples of investment in environmental protection in 2018 include the process control system for the waste disposal center at Burghausen and modernization of the waste-disposal installations and control room at Nünchritz. In 2017, our investments in environmental protection at the Burghausen site included analysis technology in the wastewater treatment plant and likewise the process control system for the waste disposal center.

Environmental Protection Costs

€ million	2018	2017	2016
Operating costs	82.9	78.3	78.4
Investments	5.9	4.2	2.4
Investments in environmental protection			
Water pollution control	3.3	1.7	3.3
Waste management	2.5	2.0	1.6
Noise reduction	–	–	0.1
Air pollution control	0.2	0.4	0.5
Climate protection	–	–	–
Soil remediation	–	0.1	–
Nature conservation and landscape management	–	–	–

Environmental Performance Assessment

WACKER has a system in place to assess its sites' environmental performance. This system is used to convert a site's total emissions and consumption of resources and energy into environmental units, which also include the use of water and amount of waste generated.

The environmental performance assessment incorporates both absolute quantities and weighting factors, which take account of four criteria:

- Environmental impact
- Safety of treatment/disposal
- Requirements imposed by environmental legislation and corporate policy
- Public acceptance

Energy consumption – electricity and heat consumption included in the environmental units – is very important to WACKER due to public awareness of the significance of greenhouse gases and international climate-protection agreements. Emissions of carbon dioxide (CO₂) and other greenhouse gases are largely energy-related at WACKER.

The number of environmental units increased by 8.1 percent in the current reporting period due to increased production volumes. In terms of gross production, the specific environmental units remained virtually unchanged from the previous reporting period.

Environmental Units for Chemical Production Sites

	2018	2017	2016
Environmental units	144,511	136,792	133,740
Gross production volume in 1,000 metric tons	17,813	16,966	16,483
Environmental units per 1,000 metric tons of gross production	8.1	8.1	8.1

Integrated Production – Our Greatest Strength

GRI 301-2

The highly integrated material loops at its major sites in Burghausen, Nünchritz and Zhangjiagang are one of WACKER's key competitive advantages. Basically, integrated production involves using the byproducts from one stage as starting materials for making other products. The auxiliaries required for this, such as silanes, are recycled in a closed loop. Waste heat from one process is utilized in other chemical processes. Integrated production not only cuts energy and resource consumption, but also improves the use of raw materials in the long term, and integrates environmental protection into our processes.

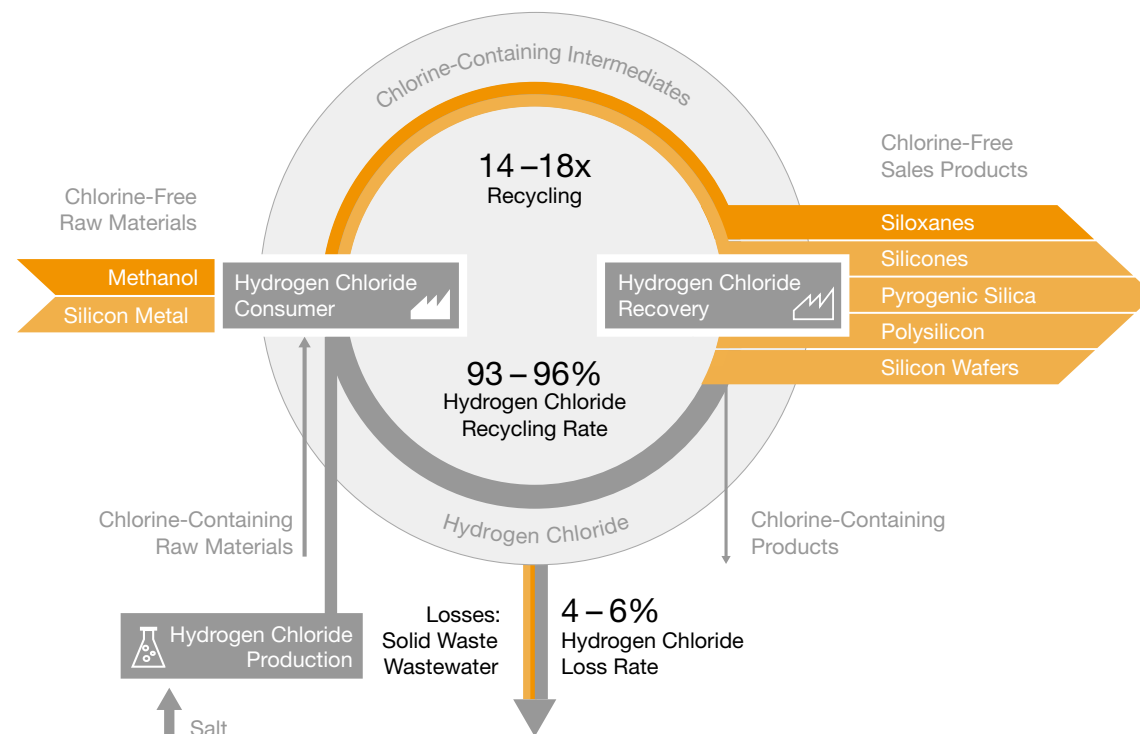
Our integrated production system is primarily based on salt, silicon, methanol, acetic acid and ethylene as starting materials. In our integrated processes, we optimize material efficiency by purifying byproducts and reusing them or making them available for external use. Examples:

- In our integrated ethylene production system, we use ethylene to obtain organic intermediates, which we then turn into polymer dispersions and dispersible polymer powders.
- Our integrated silicon production system operates along similar lines. Although comprising only a small number of raw materials – silicon, methanol and salt (sodium chloride) – this system enables us to manufacture over 2,800 different silicone products, as well as pyrogenic silica and polysilicon.

A further focus of our integrated production is to minimize hydrogen chloride consumption. Hydrogen chloride is an essential auxiliary deployed in the production of reactive intermediates from energy-poor natural materials. We then use these intermediates to make our end products.

Hydrogen chloride production requires a lot of energy. In our integrated material loop, we recover both hydrogen chloride and some of the energy in the form of heating steam during the conversion of the chlorine-containing intermediates to chlorine-free end products (such as silicones, hyperpure silicon or pyrogenic silica). We then return the recovered hydrogen chloride to the production loop and

Integrated Hydrogen Chloride System



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reuse it. This closed material loop reduces emissions and, due to lower raw-material consumption, shipment journeys.

We use a chlor-alkali membrane process to supply chlorine, hydrogen, caustic soda and hydrogen chloride as starting materials to our Burghausen site. This membrane electrolysis has enabled us to stop using mercury-based chlorine electrolysis and simultaneously cut energy consumption by around 25 percent per year. Thus, WACKER has fulfilled the chemical industry's voluntary commitment to phase out mercury-based processes by 2020 at the latest well ahead of schedule. In 2017, we increased energy efficiency by a further 8 to 10 percent by using new electrolysis cells.

Examples of savings potential for resources through our integrated production system:

- We recycle 93 to 96 percent of the hydrogen chloride that we use in the production loops at our Burghausen and Nünchritz sites. During the reporting period, we again worked on closing our material loops as much as possible and reducing the loss rate by means of optimization projects.
- In 2018, our integrated hydrogen chloride system in Burghausen prevented the emission of over 495 kilotons (kt) of CO₂ equivalents (CO₂e) (2017: 719 kt). The CO₂e effect dropped from 2017 to 2018, because we equipped our chlor-alkali electrolysis with more efficient membranes. These require less energy specifically to generate chlorine and, from it, hydrogen chloride. Due to the high reutilization rate, we save on fresh hydrogen chloride and, consequently, on raw materials and energy.
- We optimized the hydrogen loops in our integrated polysilicon production system and thus significantly lowered the consumption of hydrogen extracted from natural gas. This has led to a reduction in carbon dioxide emissions of 8,000 metric tons per year compared with 2016.

Zhangjiagang in China – alongside Burghausen (Bavaria) and Nünchritz (Saxony) in Germany – is our third major integrated production site. We employ state-of-the-art environmental technology in China, too, where we operate facilities according to stringent national and WACKER EH&S standards.

This also applies to our new site in Charleston in the USA, where we are further optimizing our system of integrated polysilicon production. We have erected a new production plant for HDK[®] pyrogenic silica there. This constitutes an important addition to the supply chain at the Charleston site, because the main byproduct of polysilicon manufacturing is tetrachlorosilane, which we can either convert and feed back into the production loop or we can use it to create added value by processing it further into HDK[®]. As already operated by WACKER at its Burghausen and Nünchritz sites in Germany, an integrated production system that combines polysilicon and HDK[®] facilities permits maximum flexibility in the processing of tetrachlorosilane, avoids the disposal of waste products and thereby enhances the viability of integrated production as a whole.

Energy

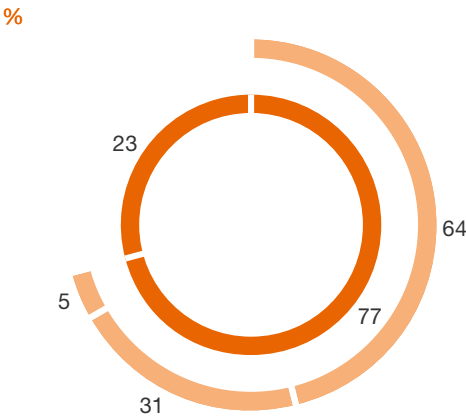
| GRI 302-1 | GRI 302-4 |

The chemical industry is one of the most energy-intensive sectors. WACKER's sites in Germany consumed 3,976 GWh of electricity in 2018 (2017: 3,946 GWh), representing approximately 0.8 percent of the country's electricity consumption. WACKER's German production sites account for over 70 percent of groupwide electricity needs.

WACKER is continually improving the energy efficiency of its processes. This enables us to remain globally competitive while at the same time contributing to climate protection.

Many chemical reactions generate heat that can be put to use in other production processes. In addition to recovering heat from such chemical reactions, we have been using integrated heat-recovery systems in Burghausen and Nünchritz for years and are continually improving and expanding them. In this way, we can reduce the amount of primary energy (natural gas) consumed by our power plants.

Electricity Supply 2018



■ Group electricity consumption: 5,178 GWh
77% Consumption in Germany
23% Consumption abroad¹

■ Electricity consumption, Germany: 3,976 GWh
64% Procured electricity
31% CHP²
5% Hydropower²

¹ Outside Germany, we purchase electricity from third parties based on the local standard energy mix.

² Burghausen

To enhance energy efficiency and reduce specific energy consumption (amount of energy per unit of net production output), the Executive Board has defined energy targets.

- We have set a goal of reducing specific energy consumption in Germany by 2022 to one-half of the 2007 level.
- In 2018, we introduced a global energy goal: we want to cut our global specific energy consumption by 50 percent between 2007 and 2030.

Energy Consumption

GWh	2018	2017	2016
Electricity consumption	5,178	5,460	5,199
Heat consumption	3,120	3,505	3,827
Primary energy use (total)	5,703	6,055	6,405
of which			
Natural gas	4,827	5,056	5,378
Solid fuels ¹	640	750	769
Heat (supplied by third parties) ²	236	249	258

¹ Coal, charcoal and wood; used as reducing agents at the silicon-metal plant in Holla, Norway

² Steam, district heating

Our primary source of energy is climate-friendly natural gas. At Burghausen, our largest site, we produce steam and electricity using a cogeneration system. The highly efficient combined heat and power (CHP) plant operates at more than 85-percent fuel efficiency, which is significantly higher than that of conventional power plants.

Additionally, Burghausen uses hydropower to generate electricity. At our Norwegian site in Holla, electricity comes mainly from hydropower.

At our site in Jincheon, South Korea, we installed solar modules on the roofs of factory buildings during the summer of 2018 and are now generating solar power there. Jincheon generated 364 MWh in the second half of 2018, which was fed entirely into the public grid. This amount is equivalent to about 15 percent of the site's total electricity consumption. WACKER is checking whether it will be possible to use all or part of this electricity that has been generated in a climate-neutral manner to power our own facilities. We made preparations at our site in Allentown, USA, for a photovoltaic system to go on stream in February 2019.

In 2018, we adopted energy-efficiency measures to further reduce specific energy consumption. These involved enhancing the heat-recovery processes and integrated systems used in our production plants.

Our German power plants – the hydroelectric and CHP plants in Burghausen and the cogeneration plant in Nünchritz – produced 1,431 GWh of electricity in 2018 (2017: 1,481 GWh), meaning that WACKER covered about 36 percent of its total energy requirements in Germany from its own production. Groupwide, carbon dioxide emissions from captive power plants subject to emissions trading rules and from silicon-metal production in Holla (Norway) totaled about 1.0 million metric tons in 2018 (2017: 1.0 million metric tons).

WACKER is subject to the regulations of the EU emissions trading system because of its power plants at the Burghausen and Nünchritz sites. We have covered shortfalls since 2014 by buying emission allowances for facilities subject to emissions trading.

Saving Energy with WOS

In the period under review, we again improved our energy efficiency with the help of projects that form part of our WOS (Wacker Operating System) program.

- The largest individual measure was the replacement of an air compressor at the Burghausen site's utility supply unit with a system that is some 20 percent more energy efficient.
- At WACKER POLYSILICON facilities in Burghausen and Nünchritz, among other things, we optimized the cooling of flanges that serve as connectors, e.g. for pipes and equipment. This has allowed us to save on steam and thus improve heat recovery and energy efficiency.

Hydroelectric Power

The Burghausen site has been supplied with electricity from Wacker Chemie AG's "[Alzwerke](#)" hydroelectric facility for almost a century (webpage available in German only). Average annual production is 265 GWh.

From 1922 to 2018, this power station generated more than 23,700 GWh of electricity. (As a comparison: this is equivalent to 13 million times the average [electricity consumption](#) per capita, which is around 1,770 kWh per year in Germany; link available in German only.) The Alz canal between Hirten on the Alz river and Burghausen on the Salzach river made it possible to harness the water – which plunges 63 meters into the turbines – for a hydroelectric power plant on the banks of the Salzach. The electricity generated by the Alzwerke plant was the key prerequisite for the chemical industry to settle in Burghausen.

Over the past decades, the hydroelectric facility has continuously increased its energy yield and annual availability. As well as for electricity supply, the water is used as cooling and process water and as an emergency power supply at the Burghausen site.

Emissions

We are continuously developing our production processes further to minimize emissions. Our environmental management controls emissions to water and air – greenhouse gases and air pollutants – as well as noise.

Air

GRI 305-1 | GRI 305-2 | GRI 305-3 | GRI 305-5 |
GRI 305-7 | GRI 413-1 |

Global warming due to rising emissions of carbon dioxide (CO₂) is a socially and economically relevant environmental factor. Its consequences can include extreme weather conditions, such as storms, drought or flooding, that vary from region to region, and their resulting effects, e.g. on agriculture and the availability of drinking water. A primary cause of climate change is the burning of fossil fuels. That's why we see energy efficiency as a key to ecologically effective climate protection.

The Group's corporate carbon footprint report is an important tool for improving climate protection. It covers three different scopes:

- **Scope 1** covers direct greenhouse gas emissions from sources of emissions at WACKER sites worldwide. Examples of such emissions include production plants, power stations, and steam-generation and waste-disposal plants.

Direct Greenhouse Gas Emissions

kt CO ₂ e ¹	GWP factor ²	2018	2017	2016
CO ₂ (carbon dioxide) ³	1	1,194	1,239	1,277
CO ₂ carbon dioxide (fossil)		1,166	1,213	1,252
CO ₂ carbon dioxide (biogenic)		28	26	25
CH ₄ (methane)	25	7.9	7.7	2.2
N ₂ O (nitrous oxide)	298	13.8	16.7	11.2
HFC (hydrofluorocarbons) ⁴	individual ⁵	105.6	271.6	176.9 ⁶
PFC (perfluorocarbons)	9,800	–	–	–
NF ₃ (nitrogen trifluoride)	17,200	–	–	–
SF ₆ (sulfur hexafluoride)	22,800	–	–	–

¹ CO₂e = CO₂ equivalents, as per Greenhouse Gas Protocol Scope 1 (direct emissions)
² The GWP factor (Global Warming Potential) is a measure of how much a gas contributes to the greenhouse effect compared with CO₂. For example, the GWP factor for methane over 100 years is 25 (according to IPCC Fourth Assessment Report 2007). This means that emissions from 1 kg of methane are 25 times more harmful than from 1 kg of carbon dioxide.
³ In line with the GHG Protocol, CO₂ emissions are categorized into fossil and biogenic sources. The latter are produced whenever renewable raw materials are burned or decompose.
⁴ The category of hydrofluorocarbons also contains subordinate amounts of emissions of other halohydrocarbons, which likewise contribute to the greenhouse gas effect.
⁵ The individual GWP factors of the individual substances are used to calculate the impact originating from halohydrocarbons. The factors range from 13 to 14,800 kg CO₂e/kg HFC.
⁶ The CO₂e emissions for HFCs were retrospectively adapted for 2016 and also calculated with the GWP factors of the individual substances. Commissioning of the Charleston site in 2016 led to higher diffuse emissions of refrigerants, which is why the 2018 level reflects normal operation.

- **Scope 2** covers indirect CO₂ emissions produced at the locations of our energy-supply facilities as a result of generating those quantities of electricity, steam and heat which WACKER produced.
- **Scope 3** includes all CO₂ emissions in the value chain that are produced upstream or downstream in relation to WACKER. Examples of such emissions include those produced by the production or transportation of raw materials, the generation of fuels or by the disposal of end-of-life products. The GHG Protocol divides these emissions into 15 categories, though WACKER only reports on those emissions relevant to the company.

Scope 1 Emissions

In 2017, direct emissions of carbon dioxide (Scope 1 of the Greenhouse Gas Protocol) declined by 3 percent year over year, chiefly due to improvements in the utilization of steam at the Charleston, Tennessee, site. The production shutdown that occurred at this site due to the loss event in September 2017 was another factor in the decline in CO₂ emissions.

In 2018, emissions of carbon dioxide declined by a further 3.6 percent year over year, mainly due to lower steam consumption at our Burghausen and Nünchritz sites.

Incident at Charleston

On September 7, 2017, a technical defect led to a hydrogen explosion that damaged a plant section at our US site in Charleston, Tennessee. This incident resulted in the release of some 38 metric tons of refrigerant, which translates to approximately 180,000 tons of CO₂ equivalents (CO₂e). This incident was the main reason for the strong increase in Scope 1 emissions in 2017 compared to 2016. We are investigating whether alternative refrigerants with significantly lower carbon footprints can be used in our plants.

Reduction of Scope 1 Emissions

A new steam line went into operation at the Nünchritz site in September 2018. This makes it possible to feed steam from polysilicon production heat recovery into silicone production and infrastructure. Alongside the cogeneration plant, the

hydrolysis and chloromethane (MeCl) synthesis facilities are so far utilizing the steam. The new steam line contributes to achieving the target of providing three-quarters of the steam demand through sustainable recovery by 2020. Then, only a quarter of the steam is to be generated by the cogeneration plant powered by natural gas. This will allow WACKER to save around 45,000 metric tons of CO₂ every year at the Nünchritz site.

At our Burghausen and Nünchritz sites, we are working on switching refrigerants for WACKER SIL-ICONES and WACKER POLYSILICON production processes to alternative materials with as low a greenhouse gas potential as possible. This long-term measure will contribute to further reducing CO₂e emissions in the event of a refrigerant leak.

Scope 2 Emissions

Our indirect CO₂ emissions from procured energy (Scope 2) amounted to 1,478 kilotons (kt) in 2018

Greenhouse Gas Emissions

kt CO ₂ e ¹	2018	2017	2016
Scope 1 (direct emissions)	1,314	1,528	1,348
Scope 2 (indirect emissions)	1,478	1,606	1,588
Scope 3 (indirect emissions), total ² , of which:	15,255	15,154	–
Upstream activities			
Category 1 – Purchased goods and services	5,648	5,555	–
Category 2 – Capital goods	461	298	–
Category 3 – Fuel and energy-related activities (not included in Scope 1 & 2)	499	595	–
Total of all other upstream activities ³	316	268	–
Downstream activities ⁴			
Category 9 – Downstream transportation and distribution	261	301	–
Category 12 – End-of-life treatment of sold products	7,655	7,973	–
Category 15 – Investments	161	164	–

¹ CO₂e = CO₂ equivalents, as per Greenhouse Gas Protocol
² WACKER's scope 3 emissions from 2016 and earlier were reported solely via CDP.
³ Contains CO₂e emissions in the following categories: Upstream transportation and distribution (Category 4), Waste generated in operations (category 5), Business travel (category 6), Employee commuting (category 7) and Upstream leased assets (category 8), which, due to their much smaller percentages, are reported in consolidated form only.
⁴ As a chemical company, WACKER does not – in line with the GHG Protocol – report any emissions from Processing of sold products (category 10) or Use of sold products (category 11). The following Scope 3 categories – Downstream leased assets (category 13) and Franchises (category 14) – are not relevant to WACKER and are consequently not recorded.

(2017: 1,606 kt). The strong reduction in the electricity to CO₂ emissions conversion factors for power generation in Germany and the United States (data as per CO₂ Emissions from Fuel Combustion, 2017 Edition, International Energy Agency) more than compensated for the increase in emissions from 2016 to 2017. We used energy-efficiency measures to further reduce weighted specific energy consumption and the associated specific CO₂ emissions – while maintaining a comparable product portfolio.

Higher output at Burghausen and Nünchritz entailed the procurement of additional third-party electricity, thus raising CO₂ emissions in 2018. This was more than offset by reduced energy consumption at the Charleston site. The electricity to CO₂ emissions conversion factors for power generation in Germany and the USA fell further. (Data as per CO₂ Emissions from Fuel Combustion, 2018 Edition, International Energy Agency). Overall, these effects reduced indirect CO₂ emissions from procured energy (Scope 2) by 8 percent.

Scope 3 Emissions

In addition to direct Scope 1 and indirect Scope 2 emissions, we report on any WACKER-relevant indirect Scope 3 emissions (Greenhouse Gas Emissions Table, Categories 1-3, 9 and 12). We calculate these by methods in line with the GHG Protocol (Corporate Value Chain Standard) based on WBCSD (World Business Council for Sustainable Development) guidance for chemical-sector companies.

In 2017 and 2018, we once again forwarded the WACKER Group's carbon footprint report to the Carbon Disclosure Project (CDP), which WACKER joined in 2007. In the CDP's 2017 and 2018 Climate Change Report for the chemical sector, we achieved a B on a scale from A (Leadership) to D (Disclosure). Registered CDP users can download the details, including the computation basis for Scope 1-3 emissions.

Emissions of Air Pollutants

t	2018	2017	2016
NO _x nitrogen oxides	1,810	1,860	1,970
NMVOC non-methane volatile organic compounds	860	880	890
CO carbon monoxide	355	336	331
Total dust	284	278	515
SO ₂ sulfur dioxide	767	692	731

Other Air Emissions

Groupwide nitrogen oxide (NO_x) emissions fell by 2.9 percent in 2018, mainly due to reduced steam consumption. The lower levels of NO_x emissions in 2017 were attributable mainly to the drop in production at the Holla site. Compared with the previous year, we succeeded in reducing specific NO_x emissions at our Holla site by almost 3 percent per metric ton of product in 2017.

One of our environmental targets is to halve specific dust emissions per metric ton of gross production groupwide between 2012 and 2022. This target primarily affects the production of silicon metal at the Holla site. The improvements made in recent years, especially to the baghouses, helped us achieve our target figure of 50 percent for the first time in 2017.

Maintenance and project work at the Holla site's baghouse caused total dust emissions to rise by 2.4 percent year over year in 2018. We still reduced our specific dust emissions by 48 percent, already nearly achieving our target of halving them from 2012 to 2020.

Emissions of non-methane volatile organic compounds (NMVOCs) fell by 2 percent in 2018. Lower production volumes at the Nanjing and Ulsan sites are among the reasons for this drop. In 2017, NMVOC emissions dropped by 1 percent. At our Nünchritz site, we managed to reduce NMVOC emissions by almost 20 percent thanks to operational improvements in siloxane production. At our Nanjing and Ulsan sites, NMVOC emissions rose in 2017 due to higher production output.

Stetten Salt Mine

At the Stetten site, the acceptance of backfill produced unpleasant odors for neighbors under unfavorable weather conditions in the 2015/2016 reporting period. We analyzed the underlying cause and worked on several solutions. One approach is to no longer accept backfill with a strong odor. We train our employees to eliminate materials with a strong odor both in advance when dealing with order inquiries and during acceptance checks.

We re-sealed cavities that had already been filled and we are closing up newly filled cavities with salt banks that are several meters thick. To adsorb odors, we conducted a long-term trial with cyclodextrins, which proved successful during the period under review. We now use cyclodextrins to bind odors in regular operation at the Stetten site. Since 2018, there have been no reports of unpleasant odors from backfill.

Immission Measurements

At the Burghausen site, we invested in a new environmental measurements vehicle for the plant fire department. It is a core element of mobile environmental monitoring in the event of operational disturbances, substance releases or unpleasant odors. As a key Crisis Management unit, the vehicle – on duty around the clock – is predominantly used for prevention, to rule out any risks for people and the environment. The integrated lab equipment makes measurements of air, gas, liquids and solids possible on the go. Experts at the plant fire department can collect data on site and pass it on to the Environment department's standby team, Crisis Management's emergency response team and the relevant authorities.

We take measurements at our largest site, Burghausen, in order to monitor whether our individual site facilities comply with legal emissions limits. Immission measurements in the adjoining [EU Habitats Directive site](#) (webpage available in German only) by an external assessor showed that the

values measured there are considerably below the legally permissible limit values or guideline values.

Sustainable Mobility Strategy

Climate protection also plays a key role in our fleet and passenger transport strategy. This strategy includes using environmentally friendly vehicles, keeping passenger transports and business trips to a minimum, organizing shuttle services, and maintaining a fleet of on-site bicycles.

We encourage our employees to investigate alternatives to taking a car, such as video conferences. At our Burghausen site, we provide 56 commuter bus routes, which some 4,000 of our employees use every day within a 50-km radius.

In China, we offer shuttle buses from residential areas to our sites in Nanjing and Zhangjiagang. There is also a shuttle bus system in place for employees of our Amtala site in India, which 70 percent of them use.

At our Burghausen site, we maintain a fleet of around 6,000 bicycles; our Nünchritz site has around 950 bicycles. We have been taking part in the ["JobRad"](#) project (available in German only) for leasing bicycles since 2018 and we again participated in the ["Cycle to Work"](#) campaign (available in German only) in the period under review.

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Our company car fleet, organized from Germany, has some 550 vehicles in Europe and Australia. Around another 100 company cars are in use in China, South Korea, Brazil and the USA. When we choose contracting companies for passenger transport, we assess the safety and environmental impact of the vehicles used by the bidders. Since 2011, our company car fleet in Germany has only included models that meet a minimum rating of “good” according to the safety and environmental assessment criteria issued by the German Automobile Association (ADAC). During the period under review, we worked on restructuring our company-car strategy; key aspects include safety and sustainability.

WACKER offers frequent travelers and employees who use company cars the opportunity of participating in safety and eco training. Regularly held safety weeks at our sites cover sustainable mobility topics.

Over two thirds of the materials-handling equipment (lifting trucks, stackers and towing vehicles) at our Burghausen and Nünchritz sites have electric motors. Groupwide, the switchover to energy-saving electric motors now covers other equipment, such as pumps and compressors.

In Burghausen, a shuttle bus picks up employees arriving from Munich at the train station and transports them to various destinations on site; an elec-

tric shuttle bus for visitors is used on the site. Electric and hybrid vehicles are part of our pool fleet. Our internal mail service at the Burghausen site has switched to electric vehicles. The technical departments for installation and on-call services use 25 commercial electric vehicles.

We encourage our employees to take the train when traveling between the Burghausen site and Munich headquarters. And we have negotiated a special ticket for this regular route with SüdOstBayernBahn, which includes public transport (e.g. the subway to the headquarters). An additional appeal of the special corporate ticket is a bonus card for frequent travelers. WACKER also provides employees with German Rail “Bahncards.”

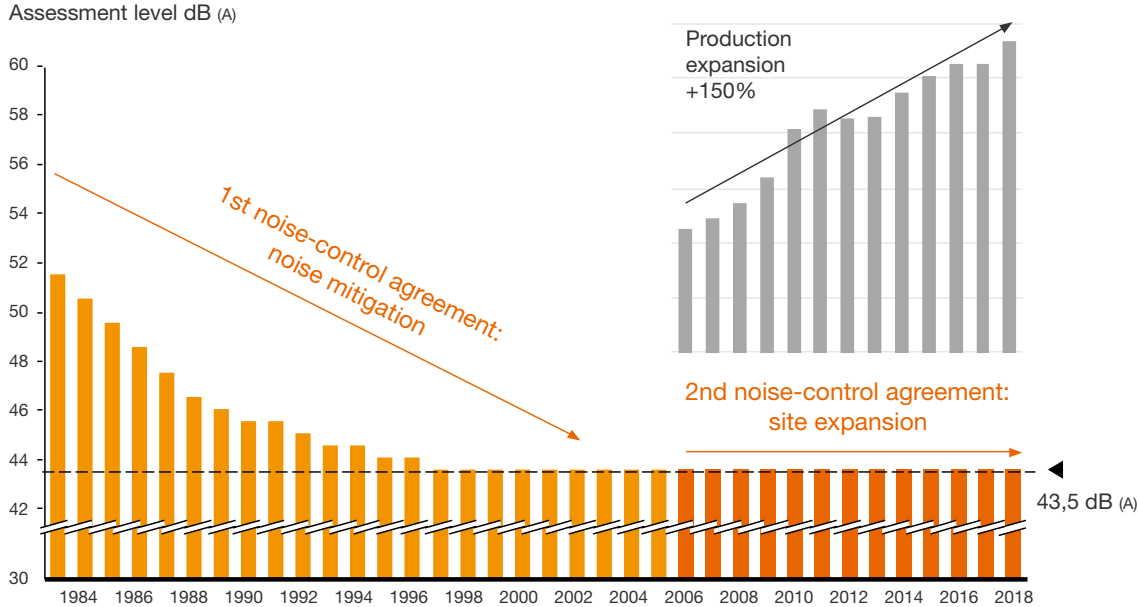
Noise

GRI 413-1

We see noise protection as an important part of our social responsibility. Noise causes stress for people – we work hard putting measures and projects in place to reduce noise at our production sites. And it has paid off: noise pollution at the Burghausen site has dropped significantly over the past 40 years. The immission-control experts from the Environment department are constantly patrolling the site. They check the noise level at workplaces and monitor the sound level the plant emits beyond the premises. The decibel levels measured at a central location in Burghausen are considered representative of the noise pollution emitted from the site. Under normal operating conditions, noise from the production plant comes in at around 43 decibels at the measuring point – nearly 20 decibels less than the sound of a normal conversation.

The noise produced by the site is one twentieth of what it was when measurements began in 1976, even though the number of plants on site has increased by well over 100 percent during the same period. The basic principle underlying emissions control is that for every new source of noise, a previous, louder source has to be eliminated or improved. Some 1,800 sources of noise have been identified at the Burghausen site where they are categorized according to loudness and included in a comprehensive acoustic emission calculation.

Burghausen Noise Control Agreement



Relatively small sources of noise are reviewed every ten years and more significant sources every three years. When new buildings are erected, the noise-protection experts are involved early on in the planning phase. Acceptance measurements are carried out for all new plants, but also when changes have been made. In addition to in-house monitoring, an independent body conducts emissions testing every three years.

We use insulation, enclosures, mufflers and noise barriers to reduce noise produced by individual machines. When considering noise protection, the big picture must be taken into account: if, for example, loud machines are installed in high buildings with large windows, the glass surface will vibrate and increase the noise level.

Water

GRI 303-1 | GRI 303-2 | GRI 303-4 | GRI 303-5

Water is an extremely precious resource – not only as drinking water, but also as a raw material, solvent and coolant in many technical and chemical processes. At WACKER, we use water sparingly and protect natural water resources. We always purify our wastewater as effectively as possible and recycle the water by means of cycles in our production. We make sure that this multiple use does not increase energy consumption or otherwise negatively impact the environment.

In both 2017 and 2018, we again used the Global Water Tool™ (GWT) developed by the World Business Council for Sustainable Development (WBCSD) – or the WRI Aqueduct contained in that tool – to analyze the relative water stress index of the countries where our main production sites are located. Beside the water stress index, we are checking whether other water-related risk factors used in this tool are of relevance to WACKER's production sites. The current result is that 99 percent of our annual water use and over 91 percent of our production volume are in regions with adequate water availability levels.

In 2018, WACKER submitted its first CDP Water Security report (for the reporting year 2017), achieving a D on a scale from A (Leadership) to D (Disclosure). Registered [CDP](#) users can download the details.

Water Use/Emissions to Water

	2018	2017	2016
Water use (thousand m³)	227,510	197,430	207,930
Cooling water volume (thousand m³)	211,140	180,470	197,230
Wastewater volume (thousand m³)	17,110	17,290	16,560
COD (chemical oxygen demand) (t)	1,230	1,310	1,210
AOx (halogenated organic hydrocarbons) (t)	2.2	2.6	3.1
Heavy metals (t)	1.0	1.1	1.1
Total nitrogen (t)	173	163	200
Total phosphorus (t)	7.5	7.3	5.9

The very warm summer of 2018 meant we had to increase the throughput of cooling water to keep process temperatures in our Burghausen production plants at the required levels. That led to a 15-percent increase in water consumption. By optimizing waste water treatment at Burghausen, we achieved a reduction of around 6 percent in chemical oxygen demand (COD) and of 14 percent in halogenated organic hydrocarbons (AOx).

Water use declined by around 5 percent groupwide in 2017, mainly due to lower water use at the Burghausen site. Owing to the strong increase in plant utilization at Burghausen, COD rose by around 8 percent in 2017.

The process water used at Nünchritz comes from on-site wells (2018: 4,681,769 m³; 2017: 4,198,940 m³). Drinking water accounts for less than 1 percent of our total water use at this site.

At the Burghausen site, the WACKER BIOSOLUTIONS division improved cooling-water control in the production of VINNAPAS® UW resins. By optimizing the software control, we reduced the use of cooling water by some 46 percent per metric ton of generated product for this product group in 2018. We saved some 37,500 m³ cooling water and will use this optimized control for further savings.

During the reporting period, we improved the site infrastructure at WACKER's Calvert City dispersion site in Kentucky, USA, with the construction of a new cooling tower. This cooling tower reduces the plant's water, electricity and chemical usage. The new tower consumes significantly fewer chemicals for water treatment and enables savings in water and electricity consumption.

Soil and Groundwater

| GRI 303-2 | GRI 306-3 |

Like many other long-standing chemical companies, WACKER has some on-site soil contamination. In the pioneering days of chemical production, nobody was aware of the dangers posed by certain chemicals, or that some substances could remain in the ground for prolonged periods without undergoing degradation.

To remediate this legacy of contamination, WACKER has been extracting air from the soil at the Burghausen site since 1989. This predominantly removes highly volatile halogenated hydrocarbons from the soil, which are then incinerated to render them harmless. By the end of 2018, we had removed a total of 2,086 metric tons of chlorinated hydrocarbons (CHCs); the amount of contaminants removed in 2018 was 23 metric tons.

Since 2003, we have been using a groundwater stripping plant to treat an area of localized groundwater contamination east of the Burghausen site. By the end of 2018, 31 metric tons of CHCs had been removed, with pollutant concentrations having been reduced to one tenth of their original levels. In order to reduce the discharge of hexachlorobutadiene (HCBd) into the tailrace, we are continuing groundwater treatment of the site's contaminated areas. Currently, 23 kilograms of the pollutant is being removed per year. The results of our annual fish contaminant survey at Burghausen

indicate that fish from the Salzach river are quite safe to eat. The fish were monitored by [BNGF GmbH](#) – Specialists in Nature Conservation, Bodies of Water, and Fisheries (website available in German only).

There is some groundwater contamination at our Nünchritz site, too. This predates WACKER's takeover of the site and has already been cleaned up by means of temporary measures. As a temporary pilot measure, purification methods were examined and groundwater treatment started. This was followed by a remedial investigation, which we continued during the current period under review, to devise a concept for further remediation measures. In this and in flood protection at the Nünchritz site, we are collaborating closely with local authorities.

Waste

| GRI 306-2 |

In integrated production, we minimize waste by feeding byproducts back into the production loop. WACKER endeavors to avoid waste throughout a product's entire life cycle. Groupwide, we record the volume of waste we generate according to the criteria "to be recycled" and "to be disposed of", as well as "hazardous" and "non-hazardous".

With regard to waste, we prioritize prevention over recycling over disposal. We see it as one of our ongoing tasks to identify new ways of suitably recycling materials within and outside our sites. The Nünchritz site has achieved a recycling rate of over 98 percent since 2010.

It is very important to us that waste is recycled, treated and disposed of in an environmentally compatible and legally compliant manner. To this end, we monitor the disposal companies that we work with for recycling and disposal with regular audits and assess them according to four criteria:

- Quantity of disposed materials
- Company size of the service provider
- Potential of disposed materials to cause environmental damage
- Disposal costs

We complete systematic checklists for our reports when we visit disposal agents. Our German sites can exchange information about external disposal companies via our internal Environmental Information System (EIS).

Waste

t	2018	2017	2016
Total	182,750	161,820	152,720
Disposed of	49,690	41,400	38,640
Recycled	133,060	120,420	114,080
Hazardous	77,070	75,800	73,660
Non-hazardous	105,680	86,020	79,060

The groupwide 13-percent increase in waste in 2018 resulted from higher volumes of non-hazardous waste due to, for example, construction activities at Burghausen and due to the inclusion of the León site (Spain) in this report.

The 2017 groupwide increase of about 6 percent in waste volume is predominantly the result of increased production in Burghausen and of construction activity at the Burghausen and Holla sites.

We maintain a chemicals-exchange database. Burghausen site employees can use it to identify surplus substances, either in opened packaging drums, or in their original container. The database is a practical way to coordinate the recycling of surplus materials. For larger material volumes, our business divisions can avail of an online portal to advertise unused materials groupwide to avoid disposal.

Burghausen's Waste Consulting department provides information about proper waste disposal and opportunities for recycling. This department has been offering a new online tool since 2018. Via the intranet, special disposal of up to 500 kg of waste that is not routinely generated can be registered with the site's own waste incinerator, the waste-disposal center or Waste Consulting.

Logistics and Transport

GRI 102-9 | GRI 203-1 | GRI 305-3 | GRI 413-1

We constantly strive to improve our processes in order to optimize logistics chains and minimize shipment journeys or avoid unnecessary ones. Our Logistics department continuously analyzes the potential for optimizing transport routes and container/vehicle capacity utilization. We use electronic systems to organize in-plant transportation such that routes are short and wasted empty space is avoided.

To monitor our journeys, we also follow the "guidelines for determining the carbon dioxide emissions associated with logistics operations" (available in German only) issued by the German Chemical Industry Association (VCI). As well as checking carbon dioxide levels, we monitor noise emissions from the vehicles we use for our shipments. (Details of CO₂ emissions due to shipments of WACKER products to our customers can be found in the Greenhouse Gas Emissions Table under Scope 3 emissions in Category 9: Downstream transportation and distribution.)

At its production sites, WACKER processes raw materials from all over the world. We have developed a strategy for our supply chains that allows us to coordinate capacities for raw-material deliveries and exports, and to avoid empty space in containers. In addition, in our collaboration with shipping

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companies, our tendering for overseas imports and exports run in parallel. This allows us to assign containers for our raw-material deliveries that belong to the same shipping-company portfolio that we use for exports. The raw materials enter our train system in Hamburg; after the journey, the containers are unloaded at our sites and then loaded again directly for export. Transport of intermediates between our sites follows the same concept.

“Guidance for Accounting & Reporting Corporate GHG Emissions in the Chemical Sector Value Chain” estimates the emissions from downstream transportation processes and goods distribution as low compared to other Scope 3 categories.

WACKER uses a refined computational model for calculating all the transportation processes of the products from the sites to the customer. It is based on factors from “Cefic-ECTA Guidelines for Measuring and Managing CO₂ Emissions from Freight Transport Operations.” The exported quantities rose in the reporting period, indicating that the transfer of transportation from road to rail has led to a reduction in transport-related emissions.

Logistics Hub

Wherever possible, we are switching from road to rail transport. Today, the majority of the freight containers leaving our German sites are transported by rail to North Sea ports, in particular. WACKER’s 600-meter-long container train travels every day from Burghausen or Nünchritz to the ports in Bremerhaven and Hamburg. In Burghausen, we transport almost 100 percent of container shipments by rail.

Globally, WACKER shipped a total of 2.3 million metric tons of finished and semi-finished products in 2018 (2017: 2.2 million metric tons). Burghausen, the Group’s largest logistics hub, increased its shipping volume in 2018 to around 920,000 metric tons (2017: 894,000 metric tons). Shipments totaled 45,000 truckloads and 16,000 overseas containers.

Our carbon footprint report contains details on our transport-related emissions.

We employ digital systems to support the increasing worldwide networking of supply flows. Thanks to these logistical tracking systems, we are increasingly able to track our shipments in real time worldwide and to respond promptly to any problems.

At the combined road and rail terminal in Burghausen (“KTB”; website available in German only), open to public use, the number of goods transshipments and transport connections has risen continuously. We ship silicon metal and other raw materials to the plants, and products to the ports by rail. Every day, these container trains connect the Burghausen and Nünchritz plants with the ports in Hamburg, Bremerhaven and Wilhelmshaven. They also run between Trieste (Italy) and Burghausen twice a week. Our freight containers are loaded directly onto container trains en route. This eliminates some 42,000 shipments by road, which reduces CO₂ emissions by approximately 3,500 metric tons per year.

From our Nünchritz site, we transport some 7,500 containers carrying products to German seaports by rail and inland waterways from Riesa every year. When we procure raw materials, they are primarily transported by rail, either in containers or tank cars. Where possible, we use emptied, cleaned raw-materials containers for product shipments. We thus avoid some 1,100 return transports of empty raw-materials containers every year and the same number of delivered empty containers for product shipments.

Reducing Shipment Routes

In integrated production, we transport products and byproducts from one plant to neighboring facilities by pipeline. For large quantities, the transport of products by pipeline is cost-effective, safe and emission-free. Ethylene, one of our most important raw materials, is piped to our Burghausen site from the adjacent OMV Deutschland site. The Ethylene-Pipeline South (EPS; website available in German only) helps us to ensure the long-term availability of this key raw material. The 370-km pipeline, which runs west from Münchsmünster in Bavaria across Baden-Württemberg to Ludwigshafen in Rhineland-Palatinate, transports the raw material without emissions and at very low energy costs.

Our Nünchritz plant obtains cartridges for silicones from a packaging manufacturer in nearby Grossenhain. Burghausen obtains reusable IBCs (intermediate bulk containers) and drums from suppliers. We are increasingly using 1,000-liter IBCs for shipping silicone fluids and emulsions. WACKER fills over 160,000 of these containers annually, which it obtains from a supplier a short distance away. This supplier recycles some 16 percent of these cleaned containers for reuse.

Short distances to service providers and maximum avoidance of empty space in the containers help to minimize emissions and waste. We are implementing similar measures at our sites in China, Japan and the USA. As an alternative to tank containers and IBCs, we also use flexitanks to transport liquids to Brazil, China, India and the Middle

Transport Volumes for the Burghausen Logistics Hub



East, for example. WACKER mounts the flexitanks in containers in such a way that, once the flexitank has been emptied, the container can be used for another cargo straight away, without having to be cleaned first.

The tank containers we use are made from a composite material that has a lower dead load. As a result, we can transport more freight without increasing the maximum weight. This also helps us to transport larger quantities in fewer shipments.

We exchange electronic data with our shipping agents so that they can plan their trips as efficiently as possible and ensure their vehicles are always fully loaded. Our strategy of focusing on regional shipping agents helps avoid empty runs. It enables the agents responsible for a particular postal code area to plan return journeys in their region so that trucks are almost never partially laden. Our annual assessment of shipping agents extends to their environmental performance. For example, we ask

how their vehicles are rated in European emission standards (such as the Euro 5 exhaust emission standard). The number of Euro 5 and higher category vehicles used by our logistics providers has increased from just under 8 percent in 2006 to over 65 percent in 2018; the number of vehicles in the Euro 6 category is now greater than 45 percent.

Transport Routes to ChemDelta Bavaria

One of the major infrastructure projects in the ChemDelta Bavaria region is the electrification of the rail route to Munich and its expansion to two tracks. This project is making good progress. Previously, the rail line to Burghausen had been in the same condition as in 1897, with the exception of a few enhancements over recent years. One bottleneck was the section between Altmühldorf and Tüßling, where three rail lines meet; around 1 percent of German freight traffic passes through here. This bottleneck was removed in May 2017. With the electrification of the Tüßling – Altötting – Burghausen section, the expansion of the entire Markt Schwaben – Mühldorf – Freilassing route is scheduled for completion in 2030.

We are involved in the “Magistrale für Europa” (Major Rail Route for Europe) initiative, which has been committed to the expansion of the rail connection between Paris and Budapest under the slogan “from patchwork to network” for the past 20 years. The Munich – Mühldorf – Freilassing section is on this route.

The expansion of the A 94 Munich to Passau autobahn made further progress in the period under review. A PPP (public-private partnership) project is funding the stretches from Pastetten to Dorfen and Dorfen to Heldenstein – these are scheduled to open in 2019.

Nature Conservation

| GRI 304-1 | GRI 304-2 | GRI 304-3 | GRI 306-5 |

Our environmental-protection efforts to conserve resources and reinstate habitat help maintain the balance of species. Burghausen’s Site Planning unit develops strategies for limiting land use. We have implemented a site development plan that contains a renaturation proposal and ensures that we also use spaces between buildings and old plants. We carefully assess the impact that site expansions may have on nature and biodiversity and – in consultation with the authorities – implement environmental mitigation programs to offset these impacts.

Covering 232 hectares (about the same size as Munich’s historic downtown district), our Burghausen plant borders an EU Habitats Directive site (webpage available in German only) alongside the Salzach river. To check whether the operation of our facilities has any effect on this nature reserve, we regularly monitor our air pollution levels (especially nitrogen oxide emissions, NO_x). In this regard, we had an external consultant compile an environmental-exposure register for the site. For the period under review, the results again show that operation of our plant does not impact the preservation and development goals of the reserve near the site.

We are cooperating with the Bavarian State Agency for the Environment (website available in German only) in monitoring the appearance of the

protected Aesculapian snake on our Burghausen site premises. In Germany, Aesculapian snakes are only known to be found in five areas, one of which is the Salzach region near Burghausen.

Naturnahe Alz e.V.

As part of the Bavarian Environmental Pact, WACKER and seven other ChemDelta Bavaria companies formed the “Naturnahe Alz” (Natural Alz) association (website available in German only) to support Bavaria in the environmental restoration of the Alz River and enhancing its ecosystem in the long term. In 2018, the “Naturnahe Alz” association again donated €60,000, bringing its total investment in nature conservation to €200,000 since its foundation in 2015.

Wildlife Conservation: Projects in the USA

A group of employees at our US site in Adrian (Michigan) has set up nesting boxes for bluebirds, which are native to the region, and maintains a 2.0-km nature trail. The 97-hectare site also features native wildflower and butterfly gardens. An outdoor area of almost 81 hectares has been certified for the conservation of wildlife. The employees are dedicated to nature and wildlife conservation. For its dedication, the Adrian team was once again awarded the Gold Status of the US Wildlife Habitat Council (WHC) in the period under review.



Plant and Transport Safety

Operating plants and processes in a manner that poses no risk to people or the environment is an important objective at WACKER. To this end, we have installed a groupwide safety management system that addresses both workplace and plant safety.

Prevention

| GRI 306-3 | GRI 403-2 | GRI 403-3 | GRI 403-5 |
| GRI 403-7 |

Risk Management

The first stage in ensuring the safety of our plants is to systematically identify risks and assess them. This includes analyzing not only how well we control the energy present in a process (e.g. pressure, heat), but also what effect a single error might have on a chain of events that could culminate in the escape of a substance or an accident. After completing this comprehensive analysis, we specify safety measures to prevent undesired events.

Safety Training & Inspections

WACKER attaches particular importance to providing its safety experts with ongoing training. We hold regular training sessions, for example, on plant safety and explosion-damage protection. Group experts organize safety training at WACKER sites, including those outside Germany. The regional

focus of sustainability management in 2017 was Asia. The Chinese sites Nanjing, Shanghai and Zhangjiagang, as well as the Kolkata site in India, underwent occupational health and safety inspections. In 2018, we audited our sites at Charleston, Adrian, Eddyville and Calvert City in the USA.

In 2017, WACKER Greater China organized Safety Days at its Shanghai, Zhangjiagang and Nanjing sites for the sixth time. The Charleston site held a Safety Day in 2018, while the Adrian site in the USA and Jandíra in Brazil held such events in both years of the current reporting period. Another Safety Day took place at the Singapore site, where WACKER employees completed a training course aimed at increasing safety awareness and improving the ability to respond correctly in the case of an emergency.

Low accident figures are a reflection of safety-conscious conduct. At WACKER, we give special recognition to facilities that operate for sustained periods of time without a reportable accident. Some of these have also been honored by institutions outside the company. The site manager of the Ulsan plant in South Korea, for example, was presented with a Safety Award from the Korean Chamber of industry and Commerce in 2018. The Ulsan site received this award to honor the fact that it had notched up 17 years without an accident.

No matter how many preventive measures are taken, accidents and environmentally relevant incidents can never be completely ruled out. At

WACKER, we make sure we learn from such events to prevent their recurrence. One example of this is an incident that occurred in 2017: at the Burghausen site, trichlorosilane leaked from a defective pipe bridge, due to corrosion. The incident prompted the development of a program with which pipe bridges have since been protected even better against corrosion and checked more intensively – at all WACKER sites that have pipe bridges or long connecting pipes outside buildings.

Transport Safety

WACKER ensures that its products are safely stored and transported. We carefully inspect vehicles before loading them, especially where hazardous goods are involved. In 2018, we had inspections carried out on some 12,000 trucks (2017: over 11,000). If a vehicle fails an inspection, we refuse to deploy it until the defects have been remedied. Failure rates have been extremely low for years now. The rate for 2018 was about 2.0 percent for hazardous goods shipments leaving Burghausen, our largest site (2017: 1.4 percent).

As elsewhere, we rely on well-trained personnel for transport safety. In 2017/2018, more than 2,700 employees in Germany alone attended classroom-training sessions on the shipment of hazardous goods, while over 1,700 participated in online courses on securing freight.

We regularly discuss the issue of transport safety with our logistics providers in Germany, for example during our annual Supplier Day. If deficiencies are

found, we agree on improvements and then follow up on their implementation. WACKER uses in-house criteria and internationally recognized systems to select logistics providers and assess their performance. Via contractually defined specifications (such as a requirements profile for providers of road transport logistics), WACKER ensures that both its contractors and their subcontractors meet the company's stringent safety requirements. As part of the annual audit plan, selected hazardous-goods shippers are audited for compliance with these requirements and, if necessary, improvement measures are agreed.

For products with a high hazard potential, we use packaging and tanks of the highest quality. In addition, we assess the route to be taken by these transports and choose the one with the lowest risk.

When monitoring the distribution of our products, we also record any transport incidents not involving hazardous goods, as well as those that have no negative impact on people or the environment. Such incidents are an important factor in the annual assessment of our logistics providers. We recorded a total of 11 transport incidents that did not involve hazardous goods in both 2017 and 2018.

Transport Accidents

Number of Accidents	2018	2017	2016
Road	3	6	2
Rail	–	2	4
Sea	–	–	–
Inland waterways	–	–	1
Air	–	–	–

Incident Management

| GRI 403-2 | GRI 403-4 |

Our safety management focuses on prevention. Even so, safety-critical incidents cannot always be prevented. Across the Group, we promptly enter any incident relevant to safety, health or the environment in the IT system we use for sustainability reporting (SPIRIT). The reports are evaluated and measures tracked. Incident reports that offer cross-division or cross-site learning effects are processed and forwarded to any company units with a similar risk potential.

Employees in Germany are able to use the idea management system to quickly and easily report safety-critical situations. As a result, hazards can be avoided at an early stage before they lead to an accident. Safety-critical situations are also reported in all our other regions and recorded across the Group.

Every WACKER site has its emergency response plan detailing cooperation between internal and external emergency response teams and the

authorities. Once a year, the plant fire departments at our largest sites, Burghausen and Nünchritz, conduct emergency drills coordinated with the local fire and emergency services. These drills provide a practical opportunity to rehearse a large-scale emergency response. Afterward, the exercise is analyzed to identify and eliminate any weak points. In the reporting period, the practice scenarios focused on fighting clouds of harmful substances and sealing defective piping, among other things. Training drills are regularly carried out at our major foreign sites, too, such as Charleston (USA) and Zhangjiagang and Nanjing (China).

WACKER's plant fire department in Burghausen also trains fire departments from the local area. In addition, we invite fire departments operated by other companies and municipalities to our premises, where they can prepare their response to accidents involving hazardous goods. If necessary, all our plant fire departments – including those at the Nünchritz and Charleston sites – support local firefighters during large-scale emergency responses. Our plant fire departments were called out in this way once in 2017 and eight times in 2018.

TUIS: Accident Assistance

The German chemical industry established its Transport Accident Information and Emergency Response System (TUIS; website available in German only) in 1981 to provide assistance in the event of chemical accidents. WACKER was involved in this network right from the start. Today, TUIS comprises some 130 chemical companies,

along with their plant fire departments and specialists (chemists, toxicologists, production experts, etc). Public services, such as fire departments, police and disaster control agencies, can contact TUIS for telephone consultation services or request specialized equipment or assistance from experts. TUIS is part of the German chemical industry's contribution to the Responsible Care® initiative. WACKER's TUIS experts can be called on to assist with accidents involving our products anywhere in the world.

WACKER Firefighters' Activities for TUIS

	2018	2017	2016
Stage 1: Expert advice by phone	20	27	17
Of which transferred to other TUIS fire departments ¹	2	2	–
Stage 2: Expert advice at accident scene	4	1	1
Stage 3: Technical assistance at accident scene	7	2	5
Total	31	30	23

¹ Reasons include: shorter journey times; WACKER is not a product specialist

Accidents and Incidents

GRI 403-2

In 2017, there was an explosion at the US production site in Charleston, Tennessee. It was caused by a technical defect, prompting a leak of hydrogen, which subsequently caught fire, thereby severely damaging an important facility of the production plant. In the wake of this incident, two plant employees were taken to the hospital for examination, but were discharged on the same day. This incident was investigated in detail, including any potential improvement measures for this and other WACKER production plants.

The modular filter equipment at Burghausen's multifunctional facility was affected by a spark that caused a fire in October 2018. This happened while measures were being taken to clear out a blockage between a pump and a filter. Four Wacker Chemie AG employees were injured. One of them was discharged after being treated as an outpatient at WACKER's own Health Services, while two employees spent a short time in an outside hospital. One employee was treated in a clinic and underwent rehabilitation before returning to work in March 2019. The incident was not caused by a technical fault. We have now taken measures to prevent such blockages in the future. We reviewed the processes in place at all WACKER Group production sites for performing such work.

We use the criteria of the European Chemical Industry Council (Cefic) to assess safety and environmentally relevant events (see diagram). These include substance spills, fires and explosions, as well as incidents that have no adverse impact on people or the environment, e.g. if all of a spilled substance was contained by the catch basin or the sewer system and was eliminated by in-plant wastewater treatment facilities.

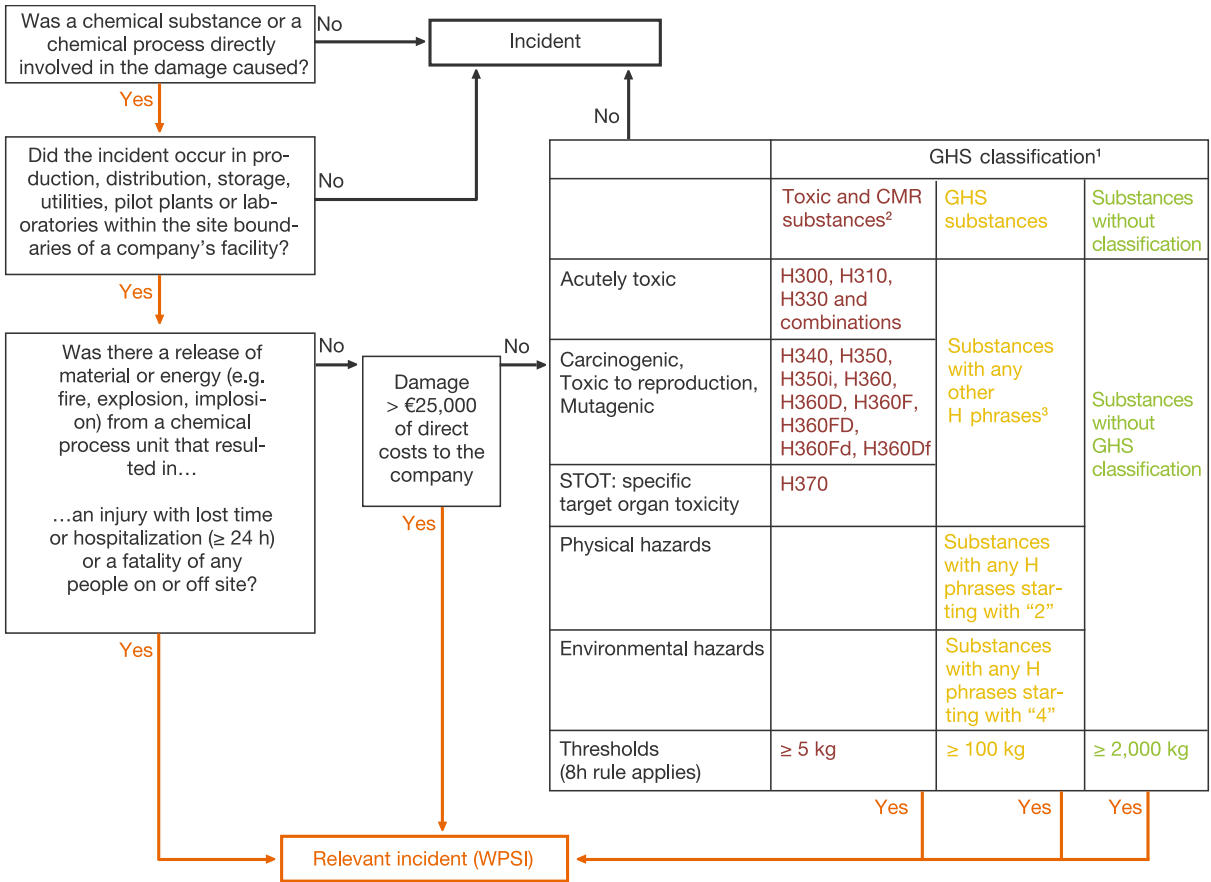
Safety and Environmentally-Relevant Incidents¹

	2018	2017	2016
Group	37	22	44
Groupwide environment- and safety-related incidents per 1 million hours worked ²	1.7	1.0	2.1

¹ According to criteria laid down by the German Chemical Industry Association, VCI
² WACKER Process Safety Incident Rate (WPSIR)

We depict the number of safety-relevant and environmentally relevant incidents in relation to 1 million hours worked. This performance indicator, which we call the WACKER Process Safety Incident Rate or WPSIR, is tracked across the group so that we can improve our safety management record. Our WPSIR was higher in 2018 than in 2017. The causes of the incidents were investigated in detail. Measures were then taken to avoid these kinds of incidents and similar ones in the future.

Basis for the Evaluation of Events According to Cefic Criteria in 2017/2018



¹ GHS = Globally Harmonized System of Classification and Labeling of Chemicals
² CMR = substances that are carcinogenic, mutagenic and toxic to reproduction
³ H phrases = describe hazards emitted by chemical substances or formulations;
H phrases that begin with: 2 = physical hazards, 3 = health hazards, 4 = environmental hazards

a

WACKER

b

Management

c

Supply Chain

d

Production &
Safety

e

Products

f

Employees

g

Society

h

GRI Index &
Glossary



Products

WACKER ensures that all of its products, if used correctly, are free of any risk to health or the environment. We seek to identify possible risks to health and the environment throughout a product's entire life cycle – from the R&D stage through to use and disposal.

Our silicone fluids have a wide range of applications.
High-temperature-resistant HELISOL[®], for example, boosts efficiency levels in solar thermal power plants.

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WACKER

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GRI Index &
Glossary

Products

WACKER ensures that all of its products, if used correctly, are free of any risk to health or the environment. We seek to identify possible risks to health and the environment throughout a product's entire life cycle – from the R&D stage through to production, use and disposal.

Responsible stewardship is one of the ways we contribute to the United Nations' [Sustainable Development Goals](#) (SDGs).

Our products come into play in the implementation of, for example, [SDG 7](#) "Affordable and Clean Energy", [SDG 9](#) "Industry, Innovation and Infrastructure", and [SDG 13](#) "Climate Action."

Product Safety

| GRI 102-2 | GRI 416-1 | GRI 417-1 |

WACKER provides information on the safe use of its products and is continually working to prevent or reduce the use of product ingredients that are harmful to human health or the environment. WACKER sells its products in compliance with the chemical legislation applicable in the country of destination.

For our product developers, we maintain a list of about 650 substances that WACKER products must or should no longer contain. In addition to prohibited and restricted chemicals (such as materials listed in [Annexes XIV and XVII of the EU's REACH Regulation](#)), these include substances that are undesired by many companies.

As far as possible, we avoid substances that are on the European Chemicals Agency's List of Substances of Very High Concern ([SVHC](#)).

During the reporting period, we set up the Identifying Substances and Mixtures of Concern (ISC) system for the systematic assessment of products in a database, and we are now testing it.

Product Information

We continually update our product information and constantly revise our risk assessments – which relate, for example, to safety aspects and environmental impacts – to promptly take account of new findings. When there are new findings that have to be included in the substance safety report to comply with REACH requirements, we adapt our risk assessments accordingly.

When advertising our products and services, we make sure that our brochures, for example, contain verifiable data and precise, legally compliant terminology and wording that reflect current scientific knowledge.

The following are examples of how our advertising provides product sustainability information:

- With [BELSIL® eco](#), WACKER SILICONES has established a [product line for silicone fluids](#) that are produced using biomethanol obtained from renewable resources such as straw or grass clippings.
- During the reporting period, WACKER POLYMERS developed its [VINNECO®](#) product line, which consists of binders based on renewable raw materials.

Material Safety Data Sheets

Only some 40 percent of WACKER products require a material safety data sheet (MSDS) by law. We go beyond these requirements and compile these sheets for all our sales products – not just for those classified as hazardous substances. WACKER publishes over 75,000 such data sheets in up to 35 languages.

WACKER publishes a wide range of information in its MSDS to ensure that substances and mixtures are handled correctly:

- Designations of substances and mixtures
- Potential risks
- Composition and information about ingredients
- First-aid measures
- Fire-fighting measures
- Response in the event of accidental release
- Handling and storage
- Restriction and monitoring of exposure; personal protective equipment
- Physical and chemical properties
- Stability and reactivity
- Toxicological data
- Environmental data
- Notes on disposal
- Transportation guidelines
- Legislation
- Other information

REACH

REACH legislation, which came into force in 2007, governs the registration, evaluation, authorization and restriction of chemicals within the European Union. Comprehensive data are gathered through REACH, imposing high requirements on the manufacturers, importers and users of chemical products. All substances on the European market that are used or imported in annual quantities exceeding one metric ton must be registered and evaluated. The scope of evaluation work is largely determined by the quantity produced or imported and the expected risks. Particularly high-risk substances are subject to regulatory approval.

How REACH Works

R – Registration

- As a rule, companies have been required since June 2008 to compile data records for any substances that have been manufactured or imported in quantities of >1 metric ton/year
- Transition periods for the registration of substances scheduled to end on May 31, 2018, at the latest
- New substance registrations and their updates will continue to be necessary in the future

E – Evaluation

- The authorities evaluate registrations and substances
- This may make it necessary for companies to meet additional information-related requirements
- ECHA publishes certain kinds of data online
- Companies use registration data in their safety data sheets

A – Authorization of

- Under REACH, the authorities can initiate a more extensive regulation of substances: approval, restriction or other measures
- Every five years, the EU Commission reviews how the regulation is being implemented (June 2017, 2022, 2027)

CH – Chemicals

As part of REACH, WACKER had submitted 480 registration dossiers, including any revisions, to the European Chemicals Agency (ECHA) by late 2018. In the course of its regular evaluation activities, ECHA requires additional information for many of the dossiers, all of which we provided on time in 2018.

The industry had to register what are known as phase-in substances (essentially substances that have been established on the market for some time) over the course of three phases extending from 2010 to 2018. WACKER has been working intensively on preparing for and implementing REACH since 2006. To this end, we created a REACH team, headed by Corporate Product Safety (CPS) and composed of experts from CPS (toxicol-

Source: German Chemical Industry Association (VCI)

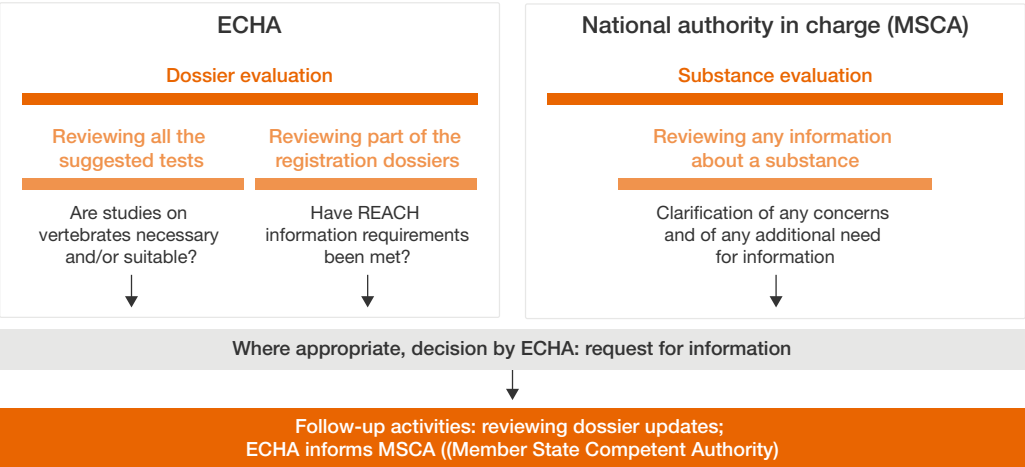
ogists and registrants), Raw Materials Procurement and the business divisions.

The final REACH registration deadline for phase-in substances (greater than one metric ton per year) expired on May 31, 2018. WACKER was in close contact with its suppliers, systematically requesting definitive statements about registration status and the further availability of raw materials. The registration process has meanwhile been concluded for all relevant substances.

As part of China REACH, we submitted 119 registration dossiers to the Chinese environment ministry by late 2018, while 619 such dossiers were filed in Taiwan.

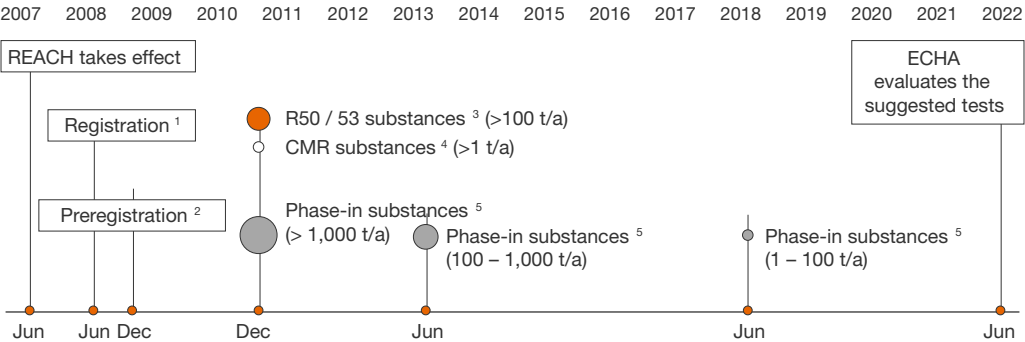
REACH demands extensive information about the properties of chemical products – which necessitates an increase in mandatory animal testing. WACKER makes every effort to avoid animal testing and only performs ECHA-required tests. Whenever possible, we use recognized alternative methods, such as in-vitro tests. We classify substances with similar properties into groups for testing and work within REACH consortia to exchange scientific data with other companies.

Evaluation of Registration Dossiers and Substances



Source: German Chemical Industry Association (VCI)

European Chemicals Agency's REACH Schedule



European Chemicals Agency's REACH Schedule: Deadlines for Submitting Dossiers

¹ New substances >1 metric ton/year

² Phase-in substances >1 metric ton/year

³ R50/53 substances: "highly toxic to aquatic organisms" and "may have long-term harmful effects in bodies of water"

⁴ CMR substances: carcinogenic, mutagenic or toxic to reproduction

⁵ Phase-in substances: predominantly old substances listed on the EINECS inventory (European Inventory of Existing Commercial Chemical Substances on the market before 1981)

GPS

To promote the safe use of chemicals, the ICCA (International Council of Chemical Associations) has developed the [Global Product Strategy](#) (GPS), which is a guideline on how to assess chemical properties and provide product safety information.

In Europe, most GPS requirements are satisfied by the EU's REACH and CLP (Classification, Labeling and Packaging of Substances and Mixtures) regulations. By the end of 2018, we had published 75 Safety Summaries on the [ICCA chemicals website](#) for the substances we registered under REACH.

GHS

[GHS](#) (Globally Harmonized System of Classification and Labeling of Chemicals) is a United Nations initiative for harmonizing the classification and labeling of hazardous substances.

It is up to individual countries to decide whether to adopt the system, and, if so, which modules to accept, and when. GHS was introduced to Europe in January 2009 in the form of the EU's CLP Regulation (on the classification, labeling and packaging of substances and mixtures). More information on this regulation is available online from the European Commission.

By 2015, we had reclassified our mixtures pursuant to EU GHS (some 7,000 mixtures). The ECHA has set up a central classification and labeling register for hazardous substances. We have been registering all relevant substances here since 2011.

We provide our employees with online training and a wide range of informative literature on GHS. Not only production and laboratory workers (who handle GHS-labeled chemicals on a daily basis) must attend certain mandatory courses, but also, for example, safety officers (who prepare SOPs). Employees who label vessels, piping and equipment have to attend these courses as well.

Overview of Hazard Symbols in the EU



Explosive



Flammable,
self-reactive



Oxidizer



Gas under pressure



Corrosive



Acute toxicity
Categories 1 to 3



Irritant, specific target
organ toxicity Category 3,
acute toxicity Category 4



Dermal sensitizer,
specific target organ
toxicity Categories 1 and 2



Hazardous to the
aquatic environment

GHS (Globally Harmonized System of Classification and Labeling of Chemicals) is a United Nations initiative for harmonizing the classification and labeling of hazardous substances.

Nanomaterials

There are several definitions of the term "[nano-material](#)," which depend on the specific regulatory context. There are as yet no definitive specifications for many nano-specific analysis methods.

WACKER identifies these materials on the basis of the [EU Recommendation on the Definition of Nanomaterial](#) (2011/696/EU). This recommendation, in turn, is based on the ISO TC 229 "Nanotechnologies" standard and is to be incorporated into REACH legislation as of January 1, 2020.

Nanomaterials possess innovative properties that significantly enhance products and processes. As is true of all chemical substances, the possible risk of inhalation by, or dermal or oral exposure to, production staff and users must be taken into account. Nanomaterials do not pose a hazard per se. It is, however, conceivable that their specific physical properties – size and surface area – may entail more pronounced effects on health than non-nanoparticles, especially as regards inhalation.

The significance of oral intake is primarily being discussed for food applications. In 2018, the European Food Safety Authority (EFSA) published guidance for investigating and assessing nanomaterials.

Based on existing studies, absorption through the skin is considered less relevant, as only minimal, if any, dermal resorption was observed in most cases. (Source: German Hazardous Substances Committee (AGS), Announcement on Hazardous Substances, BekGS 527, “Manufactured Nanomaterials” (in German only), September 2016.)

The resistance to biodegradation or solubility in biological media of nanomaterials represents a key criterion in their hazard analysis. If such materials are sufficiently soluble, a conventional hazard analysis can be performed.

We have recorded all the nanomaterials that we produce or use and have assessed their hazards and risks in accordance with statutory requirements. We have created an internal measurement strategy to characterize products based on uniform standards.

Most of these products are nanostructured – a classification that includes materials whose internal structures are nanoscale (between 1 and 100 nanometers), but whose external dimensions are greater than the nano-range. Except for their surface-dependent properties, nanostructured materials generally behave similarly to non-nanoparticles.

Nanostructured products include HDK[®] pyrogenic silica, a powder that we have sold as a thickening agent, filler and flow enhancer for over 40 years and which we use ourselves. The HDK[®] product group is part of the synthetic amorphous silica (SAS) substance class. We have collaborated with external scientific institutes to examine its physicochemical properties in detail, and extensive toxicological, eco-toxicological and epidemiological data are available. Due to their solubility, SAS are eliminated rapidly from the lung and, consequently, do not exhibit any overloading of the lung’s cleaning function or lasting negative effects in the lung.

We collaborated with the Technical University of Dresden to compile standardized test instructions on the granulometric characterization of silicas and on the examination of their dustiness. In the course of this partnership, we also validated methods for measuring nanoparticle number concentrations (aggregate/agglomerate < 100 nm). We investigated the potential release of nanoparticles from HDK[®] at our labs and during HDK[®] production, finding no evidence of relevant HDK[®] nanoparticle release.

During the reporting period, we continued exploring the issue of nanomaterials, working in national and international committees and task forces. As part of these efforts, we pay particular attention to nano-specific regulatory requirements (such as national nanoparticle registers and specific REACH requirements), which we implement accordingly. We inform our customers of how our products are assessed and of issues relating to regulatory compliance.

Genetic Engineering

The chemical industry is increasingly falling back on biotech processes to ensure its products are manufactured sustainably. WACKER is among the companies that exploit the potential of modern molecular biology and genetic engineering methods to produce high-value specialty and performance chemicals right through to complex proteins based on renewable raw materials. For instance, we use a genetically optimized *E. coli* system (ESETEC®) to produce pharmaceutical proteins as highly specific active ingredients for drugs.

We also prioritize safety when using genetically modified techniques in that we comply with laws and regulations, industry-wide standards and our own rigorous internal safety provisions. We handle genetically engineered organisms solely in closed systems, which prevents anything from being released into the atmosphere. WACKER itself does not make any genetically modified substances, nor does it distribute them.

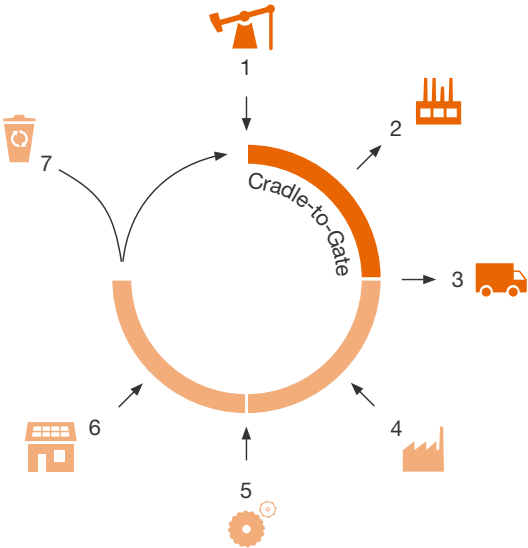
Environmental Compatibility

GRI 303-1

WACKER takes sustainability criteria into account at every stage of the product life cycle, especially for research and development projects. We aim to minimize our ecological footprint by using low-environmental-impact raw materials and, at the same time, to make solutions that offer greater sustainability possible on the market. As a result, our customers in turn increase their sustainability performance.

The assessment of the sustainability of products takes account of economic, environmental and social aspects along the entire product life cycle. In 2018, we launched the **WACKER Sustainable Solutions** program in order to assess our portfolio in accordance with objective criteria as regards contribution to sustainability. In this way, we want to continually increase the proportion of products that contribute to sustainability. By the end of 2018, we had assessed 80 percent of our products. This assessment will form the basis of future portfolio management in our business divisions and for our communications on sustainable solutions.

In an overview of our **sustainable products**, we give examples of the ecological compatibility of our portfolio.



- 1 Raw materials and resources
- 2 Production at WACKER
- 3 Factory gate / shipment
- 4 Production at the customer
- 5 End-product manufacturing
- 6 Phase of use by end consumer
- 7 Recycling / disposal

Life Cycle Assessments

Our life cycle assessments (LCAs) look at a product's entire life cycle – a “cradle-to-gate” assessment extending from manufacturing to the factory gate – in order to quantify its environmental impact. This allows us to gauge the sustainability of our products and production processes, and to improve them accordingly.

In an LCA, we take account of all relevant, potentially harmful effects on soil, air and water, as well as all material flows associated with the system in question. This includes raw-material consumption and emissions from supply and disposal processes, from energy generation and from transport.

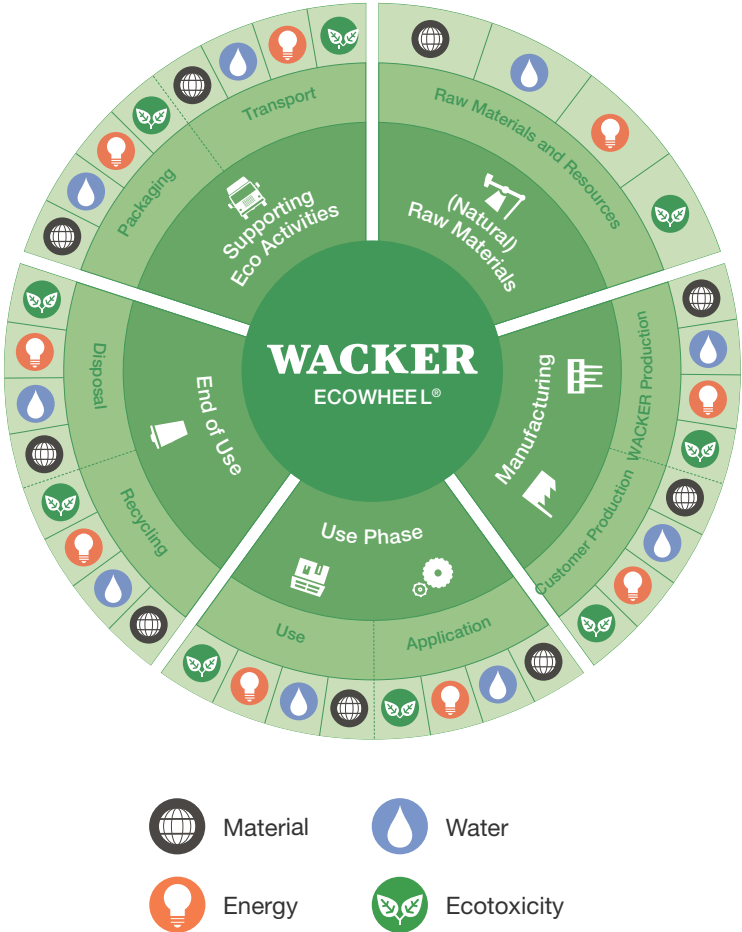
During the reporting period, WACKER POLYMERS updated the LCA data for dispersions and for dispersible polymer powders. WACKER SILICONES had LCAs performed for the entire silicone production chain and supplied customers with updated data on request.

WACKER ECOWHEEL®

With the help of the WACKER ECOWHEEL®, we identify key sustainability topics and, together with our customers, set priorities for research projects. Our evaluations factor in the material, water and energy consumption of a product, as well as its ecotoxicity, over the entire life cycle.

In order to systematically assess raw materials that we use in our products, we are setting up our Identifying Substances and Mixtures of Concern (ISC) system in a dedicated database. In doing so, alongside regulatory factors, we are taking issues under public debate into account.

WACKER ECOWHEEL®



Research and Development

GRI 102-2

WACKER's research and development pursues three goals.

- Firstly, we contribute to the market success of our customers by searching for solutions that meet their needs.
- Secondly, we optimize our processes in order to be the technology leader and to operate sustainably.
- We concentrate on creating innovative products and applications for new markets and on serving highly promising fields, such as energy storage, renewable energy generation, electromobility, modern construction, and biotechnology.

Research Along the Supply Chain

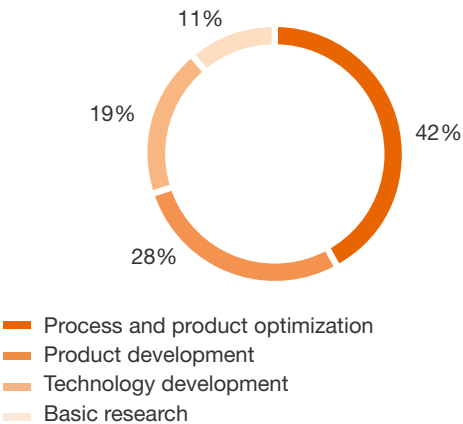
In our research and development projects, we examine the sustainability of our new products and processes. The following are some examples of our use of raw materials that benefit the environment:

- With **BELSIL® eco**, WACKER SILICONES has established a product line for silicone fluids that are produced using biomethanol obtained from renewable resources such as straw or grass clippings.
- In the **VINNEX®** product family, WACKER offers a binder system for bioplastics, allowing manufacturers to process polymers based on renewable resources just as they would standard thermoplastics.
- With its **VINNECO®** product line, WACKER POLYMERS developed binders based on renewable raw materials such as bioacetic acid during the period under review.
- **Silicone resins** are replacing organic binders in composites (materials made of silicone resins and natural fillers or high-strength fibers). We don't use organic solvents in the manufacture of such resins.

A large part of our R&D costs was spent on the development of new products and production processes. WACKER scientists are currently working on some 270 projects, 14 percent of which are key strategic projects. WACKER operates in highly promising fields, ranging from energy recovery and storage, electronics, automotive engineering and

construction through to household products, medicine, healthcare, cosmetics, food and biotechnology.

Breakdown of R&D Expenditures in 2018



The aim of our New Solutions initiative is to develop technically and commercially superior solutions for new applications. Combining expertise from across the company, we apply it where needed. This work accounts for about 5 percent of our projects. In 2018, we started a building-insulation project under this initiative.

Some of our research projects are subsidized by government grants. During the reporting period, these subsidized projects were centered on ongoing development of lithium-ion batteries.

Our R&D Workforce

WACKER conducts R&D at two levels: centrally at our Corporate Research & Development department and locally within our business divisions. Corporate R&D coordinates activities on a company-wide basis and involves other departments, such as Corporate Engineering (during process development). We also use a management process to keep our R&D projects transparent throughout the Group. We manage our product and process innovations groupwide in Project System Innovation (PSI), a project management system in which we systematically evaluate customer benefit, sales potential, profitability and technology position.

WACKER had 728 research and development staff in 2018 (2017: 728), accounting for 5.0 percent of the Group workforce (2017: 5.3 percent). Of these, 575 were employed in R&D in Germany and 153 abroad.

We Also Present Awards to Honor the Work of Our Researchers

The Alexander Wacker Innovation Award, a €10,000 prize bestowed annually since 2006, recognizes excellence in categories alternating between product innovation, process innovation and basic research.

- The 2018 award for product innovation was conferred on two chemists from the Burghausen site who developed binders enabling the production of especially high-performing adhesives and sealants, wood varnishes and coating materials. Fields of application include wood-flooring adhesives, joint mortars, crack-filling compounds, paints, tile adhesives and wear-resistant coatings for concrete floors. The binders are marketed under the **GENIOSIL® STP-E** brand.
- In 2017, the Alexander Wacker Innovation Award focused on basic research and was presented to a team for their research into the behavior of silicones at high temperatures. Four specialists from the Group's in-house research center, the "Consortium für elektrochemische Industrie," developed high-temperature-resistant silicone fluids to create **HELISOL®**: a product that enables efficiency levels in solar thermal power plants that are impossible to achieve with conventional heat-transfer media.

Collaboration with Customers and Research Institutes

Our business divisions conduct application-driven R&D, focusing on new processes for producing polycrystalline silicon and on product and process innovations in biotechnology and in silicone and polymer chemistry. We collaborate with customers, scientific institutions and universities to achieve successful research results more quickly and efficiently.

In 2018, WACKER's roughly 45 research projects saw us collaborating with 40 international research institutes on three continents (2017: some 26 research projects with more than 20 research institutes). Our collaborative efforts cover topics that include electricity storage, process simulation and process development.

Our **WACKER ACADEMY** locations serve as a platform for sharing industry-specific knowledge between customers, distributors and WACKER experts. The focus here is on providing training tailored to specific industries, such as the cosmetics, construction and paints sectors, for applications in our WACKER BIOSOLUTIONS, WACKER SILICONES and WACKER POLYMERS business divisions. The training centers' proximity to our development and test laboratories promotes the sharing of ideas and enables participants to conduct practical on-site tests. We ensure our seminars remain state of the art through our work with our own internal application technology and research facilities, as well as with universities and institutes.

Research for Sustainable Development

Our R&D work prioritizes the highly promising fields of energy, electronics, consumer care, biotechnology and construction applications. One area of special emphasis is energy storage and renewable-energy generation.

Energy from the Sun

- Polysilicon for photovoltaics
- Heat-transfer fluids for solar power plants

Energy from Water

- Electroactive polymers for wave power plants

Energy Storage and Conservation

- Active materials for lithium-ion batteries
- Thermal insulation materials for housing construction

Corporate R&D Research Projects

One focus of our basic research is the chemistry of low-valence silicon for medium-to-long-term use in industrial applications (such as catalysis). In this area, we are working very closely with the Institute of Silicon Chemistry at the Technical University of Munich.

The goal of our research into lithium-ion batteries is to develop silicon-based high-capacitance anode materials in order to significantly increase the capacity and energy density of lithium-ion cells. Industrially fabricated test cells exhibit up to 30 percent higher capacity – depending on the cell format – than graphite-based reference cells. Relevant developmental products are currently being evaluated at leading cell manufacturers.

During the reporting period, another research focus was our work on **ESETEC® 2.0**, a microbial production system for the class of biopharmaceuticals known as antibody fragments. Additionally, WACKER is developing a new generation of ESETEC® strains to control protein production, folding and release more flexibly for new classes of pharmaceutical proteins. This new concept of ESETEC® 3.0 strains makes it possible to release a protein at just the right time in a process.

Business-Division Research Projects

WACKER SILICONES Invests in Energy Efficiency

At WACKER SILICONES, researchers have developed updates to multilayer systems of our ultra-precision silicone films. Using novel silicone electrode materials, they created multilayered laminates that, as actuators, can transform electrical signals into mechanical movement, for example.

During the period under review, one focus was on thermally conductive materials for optimum heat and weight management in batteries of electric vehicles. To increase electronic productivity even further, we are researching solvent-free, room-temperature-curing silicones for the optical bonding, sealing and embedding of electronic components.

Further, we have developed self-adhesive elastomers that bond effectively – even at low temperatures – to diverse substrates. These novel adhesives, which are based on our highly reactive silane-terminated polymers, exhibit excellent binding power in combination with silicone resins.

Composites – materials combining silicone resins and natural fillers or high-strength fibers – remain a focus of our research. These materials can be used, for example, as artificial stone or as a structural component in the construction, energy and automotive industries.

We are working on the controlled release of active substances from silicone-containing network structures of the kind used in wound-care and medical technology, for example. Our spherical silicone resin particles provide a new platform for versatile applications, one such example being as an antiblocking agent in polymer films.

WACKER POLYMERS: Focus on Low-Emission Products and Renewable Raw Materials

At WACKER POLYMERS, one research priority is functional polymer binders for use in construction and other sectors. We are continually improving our VOC-free products.

We are continuing to focus on renewable raw materials such as bioacetic acid and starch derivatives. In the reporting period, we launched functionalized polymer dispersions, dispersible polymer powders and polymer resins that are used to manufacture enhanced dispersion (latex) paints, adhesives and cementitious building materials.

WACKER BIOSOLUTIONS Is Working on Bioactives

At WACKER BIOSOLUTIONS, research is geared to strengthening the division's biotech expertise. We are working on production methods and technologies to manufacture high-quality bioactives for use in the food industry and as nutritional supplements.

We are developing our ESETEC® production platform to enable its use in the manufacture of pharmaceutical proteins that are not easily accessible. In cyclodextrins, we are working on applications for the pharmaceutical, agrochemical and industrial sectors.

WACKER POLYSILICON: Solar-Cell Efficiencies Still Rising

In the field of solar modules, huge technological progress is being made at every step of the solar value chain. Cell efficiency is also rising continually. The highest cell efficiencies are attainable only with the kind of hyperpure polycrystalline silicon that WACKER POLYSILICON produces. Reference studies such as the International Technology Roadmap for Photovoltaics (ITRPV) show efficiencies of almost 22 percent for monocrystalline solar cells produced with PERC (passivated emitter rear cell) technology. Efficiency is a measure of how much of the radiant energy absorbed by a solar cell is transformed into electricity. High-efficiency monocrystalline cells (such as heterojunction or interdigitated back contact solar cells) achieve efficiencies of 22–24 percent. High-performance segments like these require WACKER-quality polysilicon.

Sustainable Products

| GRI 102-2 | GRI 302-5 |

As one of our five **corporate objectives**, we emphasize sustainability in the product life cycle – from the raw material to its use by our customer:

Raw Materials

- Silicones for polymers that are not based on crude oil
- Renewable sources
- Sustainable procurement strategy

Processes

- Designed to save energy and resources
- Recycling within production

Products for the Industries of Tomorrow

- Solar
- Building insulation
- Electromobility

Creating Added Value for Our Customers

- Product stewardship
- Increase the sustainability of customer products

Our planet's climate is changing. Climate change affects the environment, the economy, and society, as well as our living conditions. We meet these challenges with innovative technologies that save energy and conserve resources. WACKER has a series of products that contribute to sustainability in areas that will be of global importance going forward, such as energy efficiency, urbanization and rising affluence.

Energy

The energy sources of the future are the sun, wind, water, biomass and geothermal power. WACKER product lines – including products in line with the UN's Sustainable Development Goal **SDG 7** for affordable and clean energy – will help us use these resources efficiently.

Energy-Efficient Mobility

We actively support climate-friendly mobility – whether in battery research or as a manufacturer of high-tech materials for electric vehicles. Specialty silicones can withstand the higher temperatures that arise in car engines which have been downsized to achieve better fuel efficiency. When carbon-fiber-reinforced plastics (CFRPs) are coated with silicones, the weight is reduced by 80 percent compared to steel. That makes CFRPs a key component in the automotive sector for extending the range of electric vehicles and reducing the fuel consumption of combustion engines.

Our high-performance plastics ensure that the heat generated by electric drives and batteries is dissipated efficiently. As gap fillers, our silicone products conduct the heat from battery modules to the temperature-regulating systems. We offer a range of **silicone products** here, e.g. SEMICOSIL® 96x TC, SEMICOSIL® 9712 TC and 9754 TC, ELASTOSIL® RT 744 TC and SILRES® H 68 TC.

Our highly transparent liquid silicones for lighting systems support energy-efficient headlamp technologies that utilize LEDs as heat- and light-resistant encapsulation and lens materials. They make it possible to manufacture energy-saving LED components in large quantities with modest plant and process investment.

Energy from Wind and Water Power

With ELASTOSIL® Film, WACKER produces ultra-thin precision silicone film as roll stock. When these silicone films are laminated with electrodes, they act as dielectric elastomers and can be used, for example, in power plants that derive energy from ocean waves.

In offshore wind farms, the electricity is transmitted via undersea cables. Conductively modified silicone elastomers of the POWERSIL® brand meet the demanding requirements for cables laid in the open sea. Our customers use these silicone rubber compounds, transformer fluids and pastes in power transmission and distribution applications.

Energy from Solar Power

Our high-temperature-resistant silicone fluid HELISOL® can be heated up to 425 degrees Celsius and its viscosity remains low even at -40 degrees Celsius. Used in solar thermal power plants, the fluid enables high efficiency levels.

WACKER supplies the solar industry with ultrapure **polysilicon** and thus contributes to reducing CO₂ in power generation. As one of the main global suppliers of polysilicon for the manufacture of solar modules, we support the switch to renewable energy sources.

The solar power from solar installations to which we supplied **polysilicon** in 2017 will save some 466 million metric tons of CO₂ over the course of the installations' lifetime (30 years) compared to the current national energy mix. (By way of comparison, this figure is nearly equivalent to Brazil's annual CO₂ emissions, which amounted to 493 million metric tons in 2018.) This calculation is based on the "**Addressing the Avoided Emissions Challenge**" standard issued by the **WBCSD** (World Business Council for Sustainable Development).

The carbon footprint of polysilicon is essentially determined by two factors:

- First, the specific energy consumption per quantity of polysilicon produced
- Second, the carbon footprint of the electricity mix used in the production process

WACKER is a world leader in specific energy consumption when it comes to producing polysilicon based on the Siemens process. Our polysilicon sites use an electricity mix with a comparatively low carbon footprint. In international terms, WACKER's production of polysilicon is therefore very climate-friendly – especially compared to suppliers from Central China, whose specific consumption is higher and whose production plants are still largely powered by coal. If the amount of polysilicon produced by WACKER in a single year were manufactured by a Chinese producer using electricity from the national electricity mix in China, the CO₂ emissions from production would be some three million metric tons higher. This is roughly equivalent to WACKER's total direct and indirect CO₂ emissions in 2018.

German-based Fraunhofer Institute for Solar Energy Systems (ISE) has further improved the efficiency of multicrystalline solar cells. Measurements during the reporting period confirm an efficiency of 22.3 percent. Reference studies, such as the International Technology Roadmap for Photovoltaics (ITRPV), only showed efficiencies of around 19.5 percent for solar cells from standard production. With this new record, multicrystalline cells are venturing into performance areas previously reserved for monocrystalline material. As a starting material, the researchers used hyperpure polysilicon from WACKER.

A life cycle assessment (LCA) revealed that WACKER has the world's lowest carbon footprint

for polysilicon produced by the Siemens process. This LCA study was carried out in 2017 and 2018 to support our customers with French invitations to tender for solar systems, in particular. The ADEME (French Environment & Energy Management Agency) verified the results. This allows our customers to reduce the ecological footprint of their solar modules considerably and verify this achievement when answering invitations to tender in France. The first customer received a corresponding certificate in August 2018.

Urbanization and Construction

More than half of the world's population now lives in cities. This creates new challenges for our communal life. We need infrastructure that conserves resources better, construction that is more intelligent, and materials that are lighter. As one of the world's leading producers of construction chemicals, WACKER is contributing to the development of livable cities in keeping with both the UN's Sustainable Development Goal SDG 9 for industry, innovation and infrastructure and SDG 13 for climate action.

An example of considerable importance to cities in emerging markets suffering from water shortages is the use of waterproofing membranes based on VINNAPAS® binders to seal canals reliably and economically, thereby preventing water loss.

ETONIS® is an additive for pervious concrete in which the surface has pores that absorb liquid. The use of ETONIS® as a polymer modifier makes con-

crete structures last longer, as it increases their mechanical strength and protects them from freeze/thaw damage and road salt.

ETONIS® is used in the construction of what are known as sponge cities, a concept that is of particular importance in countries such as China. This innovative road engineering technique helps to prevent floods caused by heavy rainfall, especially in densely populated urban centers, where traditional concrete renders extensive, paved-over surfaces largely impermeable to water. When used in road surfaces, ETONIS® also helps reduce vehicle noise by five to eight decibels.

Dispersible Polymer Powders for Building Insulation

Saving energy – particularly in construction – is going to be an important field of endeavor throughout the world, as climate change will require insulating buildings from heat as well as cold. VINNAPAS® dispersible polymer powder ensures that adhesive mortar sticks to both the wall and the insulation material in external thermal insulation composite systems/exterior insulation and finish systems (ETICS/EIFS).

ETICS or EIFS consist of a multilayered composite material in which the addition of a dispersible polymer powder yields a lasting, stable insulation system. The dispersible polymer powder improves both the adhesion and the impact strength in what is known as the embedding coat. Hydrophobizing VINNAPAS® polymer powders are especially effective

tive in protecting the top coat from moisture. VINNAPAS® dispersible polymer powders allow manufacturers to produce insulation boards comprising different materials, including renewable substances such as cork and wood-wool.

There is enormous potential for using ETICS/EIFS technology to reduce greenhouse-gas emissions over the long term. Heating or air-conditioning accounts for more than half of a building's energy demand. In buildings that are insufficiently insulated, a large portion of this energy is lost through the exterior – an average loss of 25 percent for a free-standing, single-family home. In a ten-story apartment building, 40 percent of the heating energy is lost through exterior walls (data for Germany; available in German only).

Around 20 to 30 percent of heating energy is lost through poorly insulated windows. ELASTOSIL® silicone rubber seals windows, is weather-resistant and withstands temperature fluctuations.

Dispersions for Environmentally Sound Paints

Applications for VINNAPAS® dispersions include their use as binders for interior-wall paints. Particularly eco-friendly dispersions are those made without substances that emit formaldehyde or APEO-based surfactants (alkylphenol ethoxylates), and that contain just minute amounts of volatile organic compounds (VOCs). More and more of our dispersions are made without any APEOs, plasticizers or solvents at all.

No organic solvents are used in WACKER's VAE technology. And the reason is the chemical structure: VAE copolymers are hydrophilic (water-loving). So, instead of organic solvents, water can serve as the film-forming aid.

Examples of products introduced in the reporting period:

- We manufacture our VINNAPAS® EZ 3011 dispersion for low-emission interior paints without the use of APEOs, plasticizers, film-forming aids or solvents. It has a low formaldehyde content of less than 20 ppm. The low-odor dispersion can be used to produce formulations with a low VOC content of less than 1 g/l.
- A dispersion based on vinyl acetate and ethylene (VAE), VINNAPAS® EP 3360 is suitable for matte and semi-matte wall paints and plasters that exhibit high scrub resistance and hiding power. It has a very low residual monomer content (< 200 ppm) and formaldehyde content (< 20 ppm). It requires neither organic solvents nor coalescing agents. It thus lends itself to the formulation of low-odor paints that have a low volatile-organic-compound content (VOC < 1 g/l). The dispersion is ideal for locations where paints with low emission values are a must, such as children's bedrooms, hotels and public buildings (e.g. hospitals and schools).

SILRES® 710 is WACKER's highly effective, concentrated anti-graffiti agent. Thanks to the permanent, elastic, protective silicone film that it forms, graffiti can be easily washed off with water, while stickers, posters and signs can be removed effortlessly. The product contains no organotin compounds or oximes, and is formulated with low solvent.

Binders Made of Renewable Raw Materials

More and more customers in construction, paints, adhesives, textiles and the paper industry value the use of renewable raw materials. We can meet that wish, as our approach to sustainability begins right at the raw-material stage.

Since this reporting period, we have been using renewable resources to manufacture commercial quantities not only of dispersions based on vinyl acetate-ethylene copolymer (VAE), but also of further products based on vinyl acetate – all marketed under the VINNAPAS® brand. WACKER uses two methods for producing binders based on renewable resources, which we are marketing under the new VINNECO® product line.

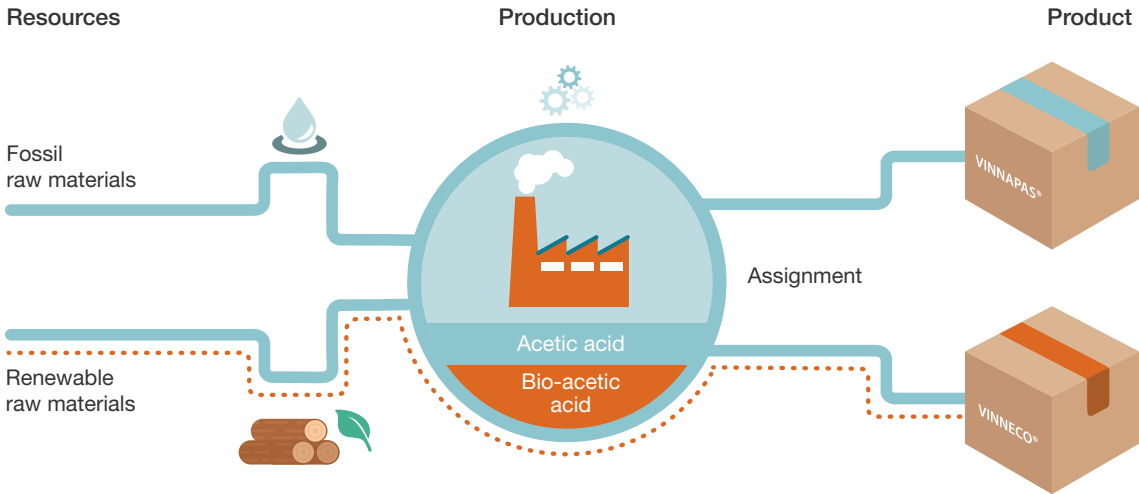
Bio-Acetic Acid

The first method uses bio-acetic acid, which occurs as a byproduct in the timber industry. WACKER applies the biomass balance method to verify the proportion of bio-acetic acid in the finished product. The method, which we are applying in vinyl acetate-ethylene production, has been certified by the TÜV SÜD international technical inspectorate in

accordance with the global CMS 71 standard. This independent certification assures our customers that we replaced the required quantities of fossil resources with an equivalent amount of renewables for our biomass-balanced products.

The wood originates from sustainably managed forests that are certified by the PEFC[®] (Programme for the Endorsement of Forest Certification Schemes). The bio-based acetic acid meets WACKER's quality standards and is characterized by high purity and color compatibility, as well as low water content. Chemically and physically, the bio-acetic acid is identical to the conventional, fossil-based one.

Biomass Balance Method



Balance of the starting materials used has been inspected and certified by TÜV SÜD

Mixing both types of acetic acid does not affect the end product's properties. All of these aspects favor the biomass-balance method, which can be used to calculate how much VAE dispersion was produced from renewable and, thus, non-fossil raw materials. With our binders based on renewables, our customers can ensure that the required amount of bio-acetic acid that comes solely from certified producers has entered their production loop.

Starch from Potato Processing

For the second method, WACKER is cooperating with Dynaplak, a Dutch company. Among the materials used in the production of VINNECO[®] dispersions is starch, which is a side-stream product of potato processing. The experts at Dynaplak

employ an innovative technology to modify the starch and so enhance its performance. WACKER and Dynaplak then combine the enhanced product with polymers based on vinyl acetate-ethylene to create a new, hybrid binder. The modified biopolymer accounts for 30 percent of the new product. This means that the VAE content, which is usually produced from fossil raw materials, can be reduced by around one-third. As a result, the manufactured product has a lower carbon footprint.

Dispersible Polymer Powders for Tile Adhesives, Flooring and Insulation Systems

Urban centers are booming worldwide. Wherever space gets tight, the buildings get taller, which puts new demands on materials. Dispersible polymer powders for tile adhesives and flooring systems help make it possible to coat untreated floors more quickly. This is because self-leveling flooring compounds cure more quickly and are ready for the next flooring layer sooner (wood, tiling or carpeting). Polymer-modified tile adhesives make it possible to install tiles of any type or size quickly and easily. Polymer modification also reduces the amount of material used, with little cement needed. Both applications produce few emissions and allow our customers to make environmentally friendly products in keeping with environmental standards such as EMICODE[®] EC1 Plus or Blue Angel.

The water-repellent VINNAPAS[®] 760 ED dispersion does not need any solvents, plasticizers, film-forming aids or alkylphenol ethoxylates (APEOs). Launched during the period under review, this

product is used to waterproof indoor pools, basements and bathrooms, for example. According to an assessment by the German Federal Institute for Risk Assessment (BfR), it is suitable for contact with drinking water.

Silicone Resins for Lasting Protection of Building Exteriors

SILRES® BS products protect exterior paints and plasters, making exteriors attractive for longer and better insulated, and thus improving their energy efficiency. Silicone resin emulsion paints (SREPs) are permeable to water vapor, which improves the indoor environment. A coat of high-quality silicone resin emulsion paint reduces heat loss from external walls by as much as 40 percent. Heat is lost faster from damp walls – the role of silicone resins is to help keep the walls dry. A SREP coating decreases heat demand by an average of 4.6 percent. The use of silicone resin emulsion paints and plasters extends renovation intervals for building exteriors by up to 25 years. Some listed buildings cannot be insulated with ETICS/EIFS technology, making silicone resin emulsion paints one of the few materials that will improve a building's energy balance.

Rising Affluence

Affluence is on the rise almost all over the world, increasing expectations as regards housing, food, health and general convenience. WACKER is spearheading innovations to meet these expectations sustainably. We want growth in standards of living – particularly in emerging markets – to be

supported by our energy-saving and resource-efficient products, such as polymers, for the paper and packaging industries, and cyclodextrins, for foodstuffs.

With **BELSIL® eco**, WACKER SILICONES has established a product line for silicone fluids that are produced using biomethanol obtained from renewable resources such as straw or grass clippings. These silicone fluids, which were introduced in the period under review, find use in personal-care products.

The designation “eco” means that we only use renewable raw materials and silicon in the production of BELSIL® silicone fluids. Though our BELSIL® eco products have the same properties as silicone fluids made with petroleum-derived raw materials, they have a more favorable carbon footprint.

The international TÜV SÜD technical inspectorate has certified our mass balance method for verifying the use of renewable raw materials in silicones manufacturing. We thus have a recognized procedure for tracking the use of renewable raw materials throughout the production process, as far as the end product. Since we also use plant-based methanol in our production, we can offer exclusively biomethanol-based silicone fluids.

Our BELSIL® DM 5700 E silicone emulsion is suitable for use in sulfate-free shampoos. Launched during the reporting period, this product contains an emulsifying system that consists of an alkyl

polyglycoside and sorbitan laurate. These nonionic surfactants are based on renewable raw materials and make the new emulsion particularly mild and gentle on the skin.

Medicine and Pharmaceuticals

Medical technology is another area in which we have launched several products during the reporting period.

Thanks to their electroactive properties, our extremely thin ELASTOSIL® Film precision silicone films can make movement visible in functional textiles. If such films are used as components in electrical systems to convert an applied voltage into movement, they enable, e.g. in the field of medicine, the design of very precise and efficient pumps or the development of artificial muscles.

Our 3D printing process for silicones, which we offer under the **ACEO®** brand, facilitates applications for the automotive, aerospace and mechanical-engineering industries, but also the manufacture of medical and health-care products, e.g. printing of organ parts.

Coldplasmatech (website available in German only), a company based in Greifswald, northeastern Germany, that works with WACKER's SILPURAN® range of silicones for medical applications, has won the 2018 German Innovation prize in the startups category. The competition is an initiative set up by various companies and is sponsored by the Federal Ministry for Economic Affairs and Energy. Coldplas-

matech has developed an innovative wound treatment process using cold plasma. This is an electrically charged gas that can sterilize wounds and promote healing. Multi-resistant bacteria that fail to respond to antibiotics can be destroyed by contact with cold plasma. Coldplasmatech has developed devices that work with large silicone dressings in order to treat large wounds, e.g. for bedridden patients.

Our film entitled “Biotechnology – Chemistry for Life” provides insights into the activities of our WACKER BIOSOLUTIONS.

During the period under review, we received approval from the FDA (US Food and Drug Administration) to manufacture the active agent in a thrombolysis drug. Wacker Biotech GmbH produces the pharmaceutical Reteplase – the active ingredient in the drug Retavase®, which pharmaceutical company Chiesi markets in the USA. The medication is used to treat acute heart attacks. Wacker Biotech has transferred the manufacturing process for the active Reteplase to its GMP (Good Manufacturing Practice) plant in Halle an der Saale (eastern Germany).

With FOLDTEC®, our E. coli-based refolding technology, we make the production of highly pure pharmaceutical proteins without the use of antibiotics possible. During the reporting period, Wacker Biotech revised one of Fresenius Medical Care's processes and, with FOLDTEC®, made industrial-scale production of the GMP process possible with higher yields

and greater purity. The antibody fragment made in this process is used in medication for apheresis treatment.

In 2017, we presented results depicting how our nature-identical hydroxytyrosol HTEssence® affects coronary health. A human clinical study demonstrates that HTEssence® is able to significantly reduce LDL (low-density lipoprotein) cholesterol. Reducing LDL has been found to support heart health. High LDL levels are one factor contributing to coronary heart diseases and atherosclerosis.

Hydroxytyrosol is a highly effective antioxidant found in olives with positive effects on blood pressure, joints and the immune and cardiovascular systems. Wacker Biotech produces its nature-identical hydroxytyrosol free of unwanted byproducts and with a defined amount of active ingredient. HTEssence® can be processed in food supplements or beverages. The US NCEP (National Cholesterol Education Program) estimates that each 1-percent reduction in LDL cholesterol can reduce the risk of heart disease by 1 to 2 percent. Accordingly, an LDL cholesterol reduction of 8 percent may reduce the risk for heart diseases by 8 percent or more.

FERMOPURE® is WACKER's brand name for its activities relating to amino acids. At the new site in León, Spain, we manufacture L-cystine – the starting material for L-cysteine – by fermentation. Due to their entirely plant-based and inorganic raw materials, WACKER cystine and cysteine are purely vegan. Any potential contamination due to animal

or human pathogens is thus eliminated. They are suitable for use in food and pharmaceutical products, finding use as a raw material in flavorings, as additives in baked goods and in baby and toddler products. Nutritional supplements contain cystine and cysteine for strengthening the skin, hair and nails. The pharmaceutical sector uses cysteine in expectorants or to produce insulin, for example.

Sports Nutrition

Coenzyme Q10, a vitamin-like molecule, and curcumin, an extract from turmeric, can increase not only general performance, but also muscular endurance and regeneration, and reduce exercise-induced muscle damage. Moreover, curcumin is an antioxidant that is capable of lowering inflammatory markers after exercise and of delaying the onset of sore muscles. However, both substances are only sparingly soluble in water and difficult for the human body to absorb. Cyclodextrins can boost their bioavailability, for example, curcumin complexed with cyclodextrins is 40 times that of the pure extract obtained from turmeric. Curcumin, which is fat-soluble, is encapsulated by the water-soluble gamma-cyclodextrin, yielding a complex that forms a molecular dispersion in water. CAVAC-URMIN® can be processed not only to dry or powdered dietary supplements, such as tablets, capsules and energy bars, but also in beverages.

Our CAVAQ10® coenzyme-Q10 complex is a sports nutrition supplement. Coenzyme Q10 is present in every human cell, where its function is to efficiently transform ingested food into energy. Studies have

linked the ingestion of coenzyme Q10 with enhanced performance and delayed onset of fatigue. Cyclodextrins enhance the stability of the substances and improves absorption by the body.

A human clinical trial by WACKER partner Cyclochem in Japan showed that coenzyme-Q10-gamma-cyclodextrin complexes protect muscle cells by functioning as free-radical scavengers and antioxidants. The evidence for this took the form of reduced levels of biomarkers in the blood after administration. Normally, these markers are increased as a result of tissue damage.

Sustainable Binders

VINNAPAS® EF 3101 is a vinyl acetate-ethylene (VAE) copolymer dispersion that we developed for rotogravure paper coatings of superior print quality. We produce this binder without the use of alkylphenol ethoxylate (APEO) surfactants. The product meets the specifications of several environmental standards, e.g. the EU Ecolabel for graphic paper, and of food-contact regulations of the German Federal Institute for Risk Assessment (BfR Recommendations XIV and XXXVI) and the US Food and Drug Administration (21CFR176.170/180).

In VINNAPAS® EP 400 E, we launched a dispersion for paper and packaging adhesives on the market during the period under review that we produce with a low formaldehyde content of less than 20 ppm.

Our GENIOSIL® XM 20 and GENIOSIL® XM 25 binders enable adhesives and sealants manufacturers to do without the use of conventional plasticizers. These polymers, which we also introduced in the reporting period, improve the bonding properties of plasticizer-free adhesives.

Renewable Raw Materials

Wood-plastic composites (WPCs) are composed of up to 75 percent wood fiber (sawdust, etc.) and a thermoplastic polymer such as polypropylene or high-density polyethylene (HDPE). WPCs can be molded into the desired form with modern plastic technology processes: extrusion, compacting, thermoforming, and injection and rotational molding. GENIOPLAST® PP is a WPC additive that substantially improves throughput, which in turn increases energy efficiency. Areas of application include floor coverings and automotive interior trims.

Conserving Water

DEHESIVE® SFX is a solvent-free silicone polymer that serves as a highly efficient coating material for label release liners and films. For pulp and paper manufacturing we offer PULPSIL® 968S, a silicone surfactant that improves pulp dewatering, thus reducing water consumption and evaporation costs, conserving energy in the process.

Many people still wash their clothes by hand in Africa and Asia. Thanks to the SILFOAM® single-rinse technology, our anti-foaming agent eliminates the need in detergents for more than one rinse

step. This saves as much as 50 percent water – corresponding to a total of 180 million liters during the reporting period, based on the amounts sold primarily in South Africa and India, which are key markets.



Employees

WACKER needs skilled workers if it is to remain innovative and competitive. Globalization, demographic change and regulatory requirements are making diversity and inclusion as well as basic and advanced training increasingly important issues. We need the skills of all our employees. Their diversity enhances our performance.

Manuela Foh, a lab technician, has been at WACKER since training to become a chemical laboratory assistant. She tests and develops products like environmentally compatible binders for interior paints.

Employment Structure

| GRI 102-7 | GRI 102-8 | GRI 401-1 | GRI 402-1 |

Jobs

	2018	2017	2016
Group	14,542	13,811	13,448
Germany	10,291	9,984	9,775
International	4,251	3,827	3,673
Percentage outside Germany	29.2	27.7	27.3
New hires, groupwide	1,798	1,208	1,167
Percentage new hires, groupwide	12.4	8.7	8.7

WACKER's headcount rose by 5.3 percent (731 employees) in 2018, while 2017 had seen an increase of 2.7 percent (363 employees). The major reasons for this growth were the start-up of poly-silicon production in Tennessee in the USA (2017), high utilization rates at our production plants (2018) and the integration of WACKER BIOSOLUTIONS' new site in Amsterdam.

Germany accounts for around 70 percent of employees, while the remaining 30 percent are based elsewhere. 96 percent of WACKER employees groupwide have permanent contracts.

Permanent and Fixed-Term Employees

	2018	2017	2016
Group	14,542	13,811	13,448
Permanent employees	13,989	13,403	13,074
Fixed-term employees	553	408	374

The company follows a flexible personnel-planning strategy in order to deal with production peaks and economic downturns, while at the same time protecting the permanent staff. If measures to reduce personnel costs become necessary, these are decided in close consultation with employee representatives.

Temporary Workers (as of Dec. 31 Reporting Date)

	2018	2017	2016
Group	109	169	178
Of whom Germany	75	138	138
Of whom international	34	31	40
Percentage¹ temporary workers, groupwide	0.7	1.2	1.3
Percentage temporary workers, Germany	0.7	1.4	1.4
Percentage temporary workers, international	0.8	0.8	1.1

¹ Ratio of temporary workers to employees groupwide

WACKER regularly informs its employees regarding current trends within and outside of the Group that could affect business development. Employees receive up-to-date and comprehensive information on material changes in operations. We hereby observe the respective national and international duties of disclosure.

Personnel Development

Vocational Training

GRI 401-1

WACKER needs committed and skilled workers if it is to remain innovative and competitive. We offer our employees a favorable foundation for exploiting their potential and further developing their skills – beginning with vocational training all the way to a variety of advanced training options. There are training and incentives programs available for each qualification and career move.

Trainees

	2018	2017	2016
Number of new trainees	191	188	174
Number of all trainees (all phases)	599	601	596
Number of apprentices graduating	185	171	178
Of whom hired by WACKER on completion of training ¹	157	144	154
Total number of employees in retraining	–	–	–
Trainees/retrainees as a percentage of total WACKER Germany employees	5.5	5.7	4.7

¹ In most cases where an apprentice was not hired, this was the apprentice's wish – for example, because they are continuing their education at college or university.

WACKER has made vocational training a focus of its personnel-development activities. We provide training at the Burghausen, Nünchritz, Stetten, Halle, Cologne and Munich sites in Germany.

The principal facility is the Burghausen Vocational Training Center (BBiW), which was established by WACKER in 1969. The BBiW offers not only initial vocational training, but also retraining and advanced training for young people and experienced staff. Well known beyond the local area, the center believes that its responsibility extends to providing training to non-WACKER staff from 21 partner companies. In 2018, 59 trainees from these companies started courses at the BBiW (2017: 60).

BBiW courses cover 21 vocations. The main focus is on the scientific and technical jobs typically encountered in the chemical, electrical and metal-working sectors. Of the 599 trainees (2017: 601), 488 (2017: 503) were in scientific and technical disciplines and 111 (2017: 98) in business-related fields. Furthermore, WACKER resumed training of IT professionals in 2018, with three trainees starting a course to become IT specialists.

Since 2018, the BBiW has been extending its chemical technician training course to include the new national elective qualification "Digitalization and Networked Production" – so participants already gain digital skills during their training.

After graduating, they have a good chance of finding employment. In the reporting period, WACKER offered jobs to all suitable trainees.

The BBiW's vocational training is complemented by seven work/study programs to bachelor level: business administration, business IT, computer engineering, engineering management, international business, electrical engineering and process engineering. Here, study at a vocational education institute alternates with quarterly practical phases. For these courses of study, WACKER collaborates with the universities of Mannheim, Heidenheim and Stuttgart, which specialize in work/study programs.

The high quality of WACKER's training is evidenced by all the awards won by its trainees. In 2017, the Nünchritz site produced Saxony's best trainee chemical technician – for the sixth time in a row. Fittingly, the Dresden Chamber of Industry and Commerce (IHK) named the Nünchritz site Outstanding Vocational Training Company 2017.

A chemical technician at WACKER Burghausen received the Master Craftsman Prize from the Bavarian state government in 2017. In the same year, the Upper Bavaria Chamber of Industry and Commerce honored another WACKER employee with an award for Best Electronics Technician for Automation Technology. WACKER employees were at the forefront in inter-regional competitions as well: they won two gold and two bronze medals at the Bavarian-Chinese welding competition at the IHK academy in Munich in 2017. What is more, a

WACKER trainee was among the winners at the national Equipment Engineering competition in 2018.

52 of the BBiW's trainees ranked as top graduates in 2017/2018 and received a distinction for passing their courses with a grade of 1.5 (on a scale of 1 to 5, with 1 being the best) or higher.

In 2018, WACKER received the Absolventa job portal's seal of approval for its fair and career-promoting management trainee program. The first five graduates of the program – which had been relaunched two years earlier – successfully completed their training in spring 2018 and WACKER hired them all. A new cycle of the trainee program started in October 2018 – this time for chemistry, sales and digitalization. The trainees receive wide-ranging and flexible training in their specific disciplines, not just in Germany, but at WACKER's non-German sites as well. During the 18-month program, they get to know the various job profiles in their functional areas and are specifically prepared for future employment with our company.

Advanced Training

| GRI 404-1 | GRI 404-2 | GRI 404-3 |

Advanced Training¹

Number of Training Hours per Employee	2018	2017	2016
Standard-pay-scale employees	16.7	15.7	18.7
Above-standard-pay-scale employees ²	27.0	21.4	21.4

¹ Excludes production-specific training. Includes internal and external seminars and advanced training courses. Figures apply to WACKER Germany.

² Third-level management (FK3) and executive personnel (OFK)

We afford all our employees the opportunity to participate in additional training. Personnel development at WACKER seeks to cultivate employees' strengths and to target specific groups. We encourage our employees to engage in lifelong learning and to remain open to change – especially since we have to adjust to longer working lives. At least once a year, employees and supervisors discuss development measures during performance reviews. This approach applies to all hierarchy levels.

Seminars/E-Learning Courses

Number	2018	2017	2016
Participants of seminars/conferences/advanced training courses ¹	15,398	16,282	15,194
E-learning courses ¹	73,532	60,957	64,805

¹ in Germany

In 2018, WACKER opened a new training center in Burghausen's Lindach business park. The center combines the latest technology with a flexible approach to space utilization. This makes it possible, among other things, to adopt a variety of design thinking methods and to broadcast video transmissions during training.

Employees in Germany can select advanced training courses from the wide range on offer under the WACKER training program. We currently offer some 220 seminars and training courses for a very wide range of target groups. Approximately 150 of these seminars promote technical skills development. Topics range from safety and environmental protection, to quality or project management, and on to business administration and IT. We support employees whose work involves international dealings by offering them seminars on language-related and intercultural topics.

Employees have access to a variety of (advanced) training courses at WACKER's international sites as well. For example, WACKER Greater China calculated that its courses were attended 42,814 times

on 5,471 training days in 2018 (2017: courses attended 35,845 times on 6,292 training days). The introduction of digital projects meant that the number of training days and times that courses were attended thus multiplied compared to earlier years. At Wacker Chemical Corporation in the USA, some 1,650 employees participated in around 9,700 training days in 2018 (1,550 employees with 9,500 training days in 2017).

During the reporting period, the Group's training system was introduced as a job-qualification tool at WACKER's Shanghai site. WACKER Greater China employees can use this platform, for instance, to obtain training information quickly and easily or consult training documentation.

Training for a Diverse Workforce

Diversity and inclusion play a key role in our learning program. Female employees on all hierarchical levels can take part in programs developed especially for them. The development of women is specifically promoted in the seminars entitled "What helps women get on" and "Emotional intelligence: women, be more courageous!" Different generations working together is another important topic. We want to take advantage of the opportunities afforded by this and are offering, for example, a seminar on the cooperation between baby boomers and Generations X, Y and Z.

In Germany, WACKER invested €8.7 million in personnel development and advanced training in 2018 (2017: €7.9 million).

Talent Management and Managerial Staff

GRI 404-2

Another focus of our personnel-development activities is identifying and grooming young potential for specialist and managerial tasks. What is more, we continually develop the skills of our current specialists and managerial staff.

The aim of our talent-management process is to identify and foster talent at an early stage. It also helps us fill important positions with highly-qualified in-house candidates in the medium and long term. The talent-management process is directed at executive personnel and all other employees above the standard pay scale. The employees' performance and potential are discussed on the basis of uniform criteria at conferences held during the annual talent-management cycle. Prior to the conferences, perspectives are gathered at a management level, from supervisors and internal customers. The conferences initially take place within a corporate sector (business division, corporate department or subsidiary) and are subsequently conducted across corporate sectors. During the annual performance review, employees and supervisors discuss the strengths and optimization potential identified at the conferences and jointly determine development measures. This groupwide approach allows us to offer employees in small units and at subsidiaries prospects, too.

WACKER introduced a unified talent-management program in 2013. Some 150 conferences take place every year at which the performance and potential of close to 3,000 employees are discussed. In general, around 60 percent of high potentials and 25 percent of growing potentials pursue development measures in the course of a year that ultimately enable them to take up new positions. The 2018 global employee survey showed that more than 70 percent of employees believe that WACKER offers ample opportunity for personal development.

We use a wide range of instruments in developing managerial staff. This ranges from company-specific, internal group programs, to individual measures, for example coaching or team development, all the way to outside advanced-training courses.

Selecting Managerial Staff

In addition to the information gleaned from talent management, whenever possible and suitable, we use various diagnostic techniques to determine the capabilities an employee already possesses and to identify those which can be developed to enable that individual to assume a leadership role. These techniques determine the strengths and potential of the employee and provide individualized assistance. For example, standard-pay-scale employees who are recommended for or apply for a position as shift leader or certified industrial foreperson can participate in a development workshop, during which we can provide them with targeted career-development support.

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WACKER

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GRI Index &
Glossary

Executive Development

WACKER systematically and continually develops executives, so that they can deal with the varied challenges they encounter. We offer our employees comprehensive programs adapted to the needs of the respective target group. For employees new to management, this includes the mandatory “Start Leading@WACKER” and “Effective Management 1” courses. Employees with several years of managerial experience in disciplinary supervision can deepen their knowledge with the “Effective Management 2” seminar.

WACKER has an international program for high potentials and newly appointed executive personnel (OFK) – the Executive Development Program. It aims at creating a joint leadership identity across divisions and regions, developing the participants’ potential and strengthening their management and leadership skills. Over the course of a year, the program, which comprises several modules, offers a platform for exchange, feedback and peer consulting among managerial employees.

WACKER encourages internal networks for specialists and managerial staff. These networks promote knowledge transfer and exchange of information across departmental boundaries. Examples include the “We, the WACKER Group” events for new employees as well as a network for young female managerial staff who have taken part in a Munich-based cross-mentoring program. WACKER has participated in this program since 2005. Our goal is to help prepare women with management potential for leadership positions, with the aim of increasing the number of women in top management. This 12-month program involves an experienced manager acting as mentor to a female mentee at another company. Five young female managers from WACKER took part in the program in 2017 and 2018. WACKER’s OFK executives acted as mentors to other companies’ female employees. Since the cross-mentoring program began, a total of 39 young female managers have taken part in it.

Alongside the cross-mentoring program, WACKER offers an internal mentoring program that is open to both male and female employees. Here, executives act as mentors to young above-standard-pay-scale employees. A total of 29 mentees have taken up this offer since it was launched in 2014.

Feedback Culture

All WACKER managerial staff, whatever their level, receive feedback on their management style when they hold annual performance reviews with their employees. Executive personnel and management employees can obtain management feedback. Employees and/or colleagues submit their responses via an online tool, which are then evaluated anonymously. Following the evaluation, there is the chance to discuss, with support from a coach, the results in one’s team and to develop an action plan if necessary.

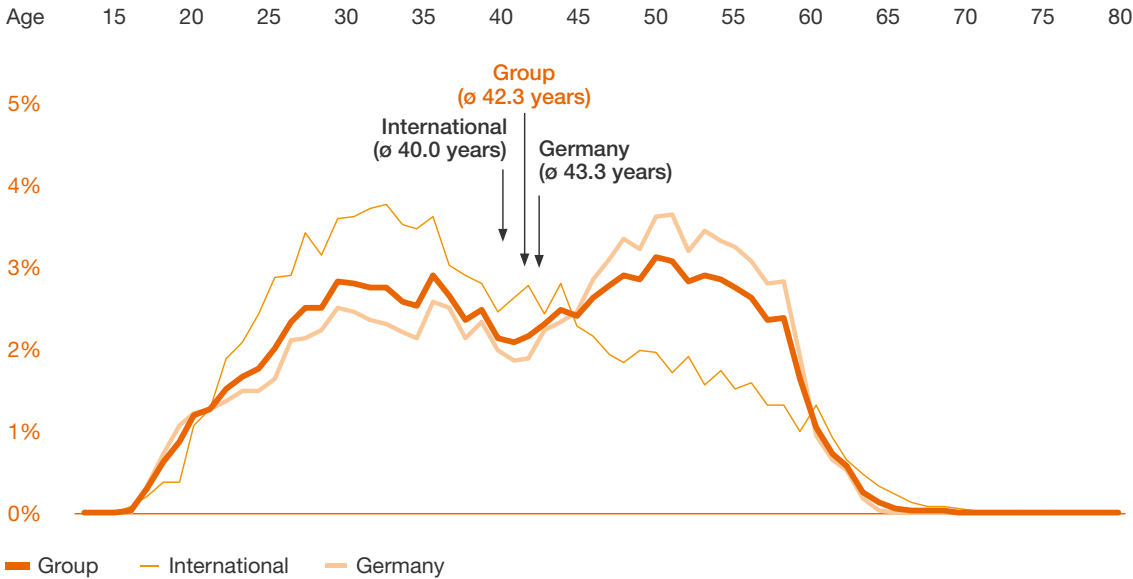
Third-level management (FK3) employees have been able to avail themselves of the Leadership Versatility Index® (LVI) feedback tool. The LVI supports the identification of strengths and areas for improvement and offers a comparison between self-assessment and external assessment. The tool also allows for a 360° view.

Demographic Change

WACKER has been addressing demographic change for many years. The average age of the Group's workforce at the 2018 reporting date was 43. Employees at non-German sites are younger than in Germany. The average age of OFK executive staff was 53.

The age structure abroad varies greatly from region to region. Staff at Asian sites are comparatively young (average age: 36.1), while staff at US locations had an average age of 43.8 in 2018. Regional variations in age structure are not exclusive to WACKER; they reflect the age structures of the populations in each continent and country.

Demographic Analysis in 2018



To maintain our long-term innovative and competitive strength and to acquire and retain highly qualified employees, we have formulated strategic goals such as:

- Systematically promote health
- Maintain and enhance WACKER's appeal to employees
- Intensify advertising and recruitment efforts aimed at professions critical to WACKER's success
- Pursue forward-looking strategies for in-house vocational training
- Act as a corporate citizen by fostering scientific and technological interest in youth at an early age

To achieve these goals, we have introduced a number of measures – ranging from employee health programs through to basic and advanced training. These are intended to maintain employees' job flexibility. We are putting increased effort into acquiring talented and committed young staff. Our Personnel Marketing targets aspiring engineers and scientists, as well as IT experts, and informs them of career opportunities at WACKER. This revolves around intensive contacts with universities, e.g. in the form of project-planning courses, site tours for students, hackathons, opportunities for internships and providing possible topics for bachelor's and master's degree theses. WACKER also attends job fairs at universities.



Life and Careers

Diversity, Inclusion and Equal Opportunity

| GRI 102-22 | GRI 102-24 | GRI 202-2 | GRI 405-1 |
| GRI 405-2 |

In 2015, WACKER started a groupwide initiative to promote diversity and inclusion in the workforce, and also signed Germany's nationwide Diversity Charter. Since then, WACKER has focused every year on specific topics aimed at making employees aware of the opportunities and challenges associated with a diverse workforce. Our focus in 2018 was on inclusion, a topic that Germany's Diversity Day also highlighted from multiple perspectives. Following on from Diversity Week 2017 in Munich and Burghausen – which featured a variety of talks and campaigns relating to the topic – Diversity Day 2018 was in turn received very well. In Burghausen alone, almost 500 employees attended a talk by a guest speaker who is a former competitive athlete and has been paraplegic since a training accident. In Munich, there was a presentation on the topic of universal design – the barrier-free design of everyday items – and interested employees from Nünchritz were able to follow the proceedings live and were likewise able to test objects that make life easier for people with disabilities.

In 2018, the Bavarian Ministry of Social Affairs awarded WACKER its "Inclusion in Bavaria – We Work Together" emblem. This Bavarian government citation recognizes employers who contribute significantly to the inclusion of persons with disabilities into working life. WACKER's goal is a prejudice-free work environment, where every employee can contribute to the company's success – and where employees with severe disabilities or with an equivalent status are integrated over the long term.

Alongside inclusion, diversity management at WACKER focuses on all dimensions of diversity. People from 67 different nations work for WACKER. At the end of 2018, 37 out of a total of 172 members of executive personnel (OFK) groupwide were of non-German nationality – which corresponds to 21.5 percent of the total. Overall, 15 nationalities were represented at the executive level.

Proportion of Women in Executive Positions

In 2018, both the shareholder representatives and employee representatives appointed two women each to Wacker Chemie AG's Supervisory Board.

Executive Board: While Wacker Chemie AG attaches considerable importance to diversity as regards appointments to the Executive Board, expertise and qualifications remain the principal criteria for such appointments. There are currently no regular new appointments planned. Under these circumstances, the target set by the Supervisory

Board for the proportion of women in the Executive Board for the period up to June 30, 2022, is zero.

Management levels below the Executive Board:

WACKER is focusing its attention on the two levels of management below the Executive Board as depicted in the Wacker Chemie AG organizational chart. With regard to the second reporting level, we have also decided to include only managerial employees from the highest above-standard pay scale or those who are OFK executive personnel with responsibility for managing employees.

Proportion of women:

Our target value for the proportion of women in the first level of management is a minimum of 16 percent. For the second level of management, we have set a goal of reaching a proportion of women of at least 18 percent. The implementation period for this ends on December 31, 2019. Our previous goal had been to increase the proportion of women in the first level of management from 8 percent to at least 10 percent by mid-2017, and for the second level of management from 14.5 percent to 17.5 percent. We achieved both of these targets and clearly exceeded the one for the first level of management. These goals are ambitious, given the fact that there are currently few women in the scientific-technical professions that are important to WACKER. Furthermore, there is very little staff turnover in Germany, and new appointments to the first and second levels of management are usually the result of employees going into retirement.

Equal Treatment

We view human diversity as an asset. We oppose discriminatory or derogatory treatment on the basis of gender, race, ethnicity, religion, ideology, disability, sexual orientation or age. These principles are valid across the WACKER Group and, as part of our corporate culture, are embodied in our [Code of Teamwork & Leadership](#). Employees may report any discrimination to their supervisors, as well as to a compliance officer, the employee council or the designated HR contact person. Complaints are investigated and the reporting party informed of the outcome. We do not keep a log of discrimination cases.

We require all employees at our German sites to complete an e-learning course to familiarize themselves with the country's General Equal Treatment Act (AGG). This course is compulsory for all levels of corporate hierarchy, from the Executive Board down to standard-pay-scale employees – all new employees must complete it.

Special arrangements are in place to help and promote WACKER employees with disabilities. The company's integration management program provides for close cooperation between supervisors, employees, HR, employee councils, representatives of employees with disabilities, and Health Services to permit disabled employees to remain in their workplace or to change to a suitable job. This allows us to retain skilled staff, and valuable knowledge acquired over many years remains with WACKER.

For years, WACKER has employed a higher number of people with disabilities than required by law. Even so, we had to pay a low compensatory levy in 2017 and 2018, as not every subsidiary achieved the 5-percent target. 89 percent of employees with severe disabilities or with an equivalent status at WACKER Germany are on the standard pay scale. The average age of these WACKER employees is 52.3. In 2017 and 2018, the Burghausen site took on five disabled young people as trainees. The same number were given a steady job at WACKER on completion of their training program.

WACKER supports physically and mentally challenged individuals who are unable to find work on the general job market, for example by collaborating with workshops for people with learning disabilities. Our Burghausen site, for instance, sources key products from the charitable [Ruperti workshops](#) (website in German only) – from dunnage for securing freight to mounting plates for process engineer-

ing. At the Nünchritz site, we have for many years been using the services of the "[Lebenshilfe Riesa e.V.](#)" (website in German only) sheltered workshop (a charity for people with learning disabilities) for landscaping and garden maintenance. An example of this cooperation in the USA is the [Pomona Valley Workshop](#). Here, the Chino site collaborates with a neighboring organization that offers jobs to individuals with special needs.

In recent years, WACKER has become more international. The company sells products in more than 100 countries around the globe, and most of our sales – 82.5 percent in 2018 – are generated outside Germany. It follows that we want our management to reflect the global nature of our business. Over recent years, WACKER has increasingly filled leadership positions in its regions with local employees rather than with executives sent there on assignment. The prime criterion for filling executive positions remains qualification. In Germany,

Employment/Inclusion of People with Disabilities

	2018	2017	2016
Mandatory workplaces (annual average)	528	511	503
Actual workplaces (annual average)	924	892	877
Ratio of actual to mandatory workplaces (annual average, %)	175	175	174
Employees with disabilities as a percentage of total employees, WACKER Germany ¹	8.8	8.7	8.7
Compensatory levy (€ thousand)	5	11	12

¹ Legally required: 5%

the General Equal Treatment Act (AGG) forbids the selection of personnel according to origin. A similar situation exists in other WACKER regions, such as China and the USA, where we select candidates primarily by qualification.

It goes without saying that we offer equality of opportunity to all employees, regardless of their gender. This approach also applies to compensation. Whether on the standard pay scale, in third-level management (FK3) or among the executive group – men and women who hold the same positions are paid the same. Statistical differences in the average annual salaries of individual employee groups are essentially based on seniority and professional experience.

WACKER would like to increase the number of female executives. For this purpose, we participate in Munich's Cross-Mentoring Program. To get girls interested in jobs such as chemical technician, industrial mechanic or electronics specialist, we take part in the Girls' Day event (website in German only) held throughout Germany.

In order to promote young female management talent, an in-house WACKER initiative established a mentoring program for women. The sixth round of this program kicked off in the summer of 2018. Here, mentee and mentor are matched up and then regularly exchange experiences and learn from one another. They are supported by guidelines covering topics such as a motivational plan and measurement of personal success.

Diversity, Inclusion and Equal Opportunity

	2018	2017	2016
Employees, groupwide	14,542	13,811	13,448
Of whom female	3,355	3,154	3,047
Female employees, groupwide (%)	23.1	22.8	22.7
Employees, WACKER Germany	10,291	9,984	9,775
Of whom non-German	1,054	1,046	1,034
Non-German employees, Germany (%)	10.2	10.5	10.6
Third-level management employees (FK3), groupwide	3,212	3,043	2,927
Of whom female	762	690	650
Women in third-level management, groupwide (%)	23.7	22.7	22.2
Executive personnel (OFK), groupwide¹	172	166	165
Of whom female	23	21	19
Women as executive personnel, groupwide (%)	13.4	12.7	11.5

¹ Executive personnel (OFK) figures exclude inactive employment contracts and the Executive Boards of Siltronic AG and Wacker Chemie AG

We have set a goal to significantly increase the proportion of women in middle and upper management positions in the medium to long term. One of the goals of our talent-management project is to make female management potential visible and to assist these women in their next career step. With its wide range of different working-time models, our life-cycle-oriented personnel policy provides the appropriate framework.

Life-Phase-Oriented Work

GRI 102-8 | GRI 401-3

WACKER offers its employees extensive opportunities to balance their private and professional lives. These range from multiple work-time models, child-care assistance, and school-vacation support at Burghausen (our largest site) through to one week of “family time” for parents of children under eight and support for employees caring for relatives. Our company has a wide range of flextime models, including a self-regulated system based on trust (working-time autonomy). Where possible, we offer both full-time and part-time positions. In individual cases, WACKER enables employees to work from home (an option that may be combined with part-time work).

A pilot project on “mobile work” kicked off in November 2018 for employees at the Munich headquarters and the Stuttgart sales office. After obtaining approval from supervisors, employees have the opportunity of performing their work on a mobile basis to a certain extent. The aim of this new arrangement is to create a framework for modern working conditions that are flexible in terms of both time and place, and to keep pace with the digitalization megatrend. This pilot project will run for one year initially to gather experience with mobile work.

Our employees have access to a variety of leave options and part-time models for personal situations, such as providing care for family members with serious health conditions, pursuing further education or taking a sabbatical. Unpaid leave can be taken up to a maximum period of two years.

Part-Time Employees¹

	2018	2017	2016
Part-time employees, WACKER Germany	3,013	2,984	2,975
Of whom female	921	912	873
Of whom male	2,092	2,072	2,102
Part-time employees, WACKER Germany (%)	29.3	29.9	30.4
Employees in phased early retirement	916	846	659
Of whom in non-active phase	386	326	222

¹ Working time < 100 percent

These arrangements are based on the “Working Life and Demography” collective-bargaining agreement and offer employees a wide range of options for balancing their careers with different stages of their lives.

Leave-Of-Absence Options Used by Employees

	2018	2017	2016
Sabbaticals ¹	72	61	51
Qualifications ²	32	27	15
Care ³	3	3	3
Total	107	91	69

¹ Sabbatical for personal reasons

² Advanced training either part-time alongside work or full-time

³ Leave to provide care for a family member with a serious health condition

In 2018, WACKER joined the “Familienpakt Bayern” network (Family Pact Bavaria) launched by the Bavarian government and industry, a move that highlights our goal to foster a family-friendly corporate culture. About 600 companies have joined the Pact.

We support childcare and the return to work after parental leave. There is a return-to-work seminar every year in Burghausen, for instance. At the Munich and Stuttgart sites, pme Familienservice GmbH helps employees find kindergarten and preschool places.

WACKER engages two service providers to handle family emergencies at its German sites. Whether employees themselves or family members fall ill or need nursing care, advice can be obtained from Amiravita GmbH. During the reporting period, both Amiravita and pme Familienservice presented their services at Burghausen and Munich through various informational campaigns.

In 2018, the Bavarian government ran its “Successful. Family-Friendly” corporate competition, in which it commended 20 companies, including WACKER, for their exemplary support in reconciling family life and work. 227 Bavarian companies from all industries and of all sizes participated in the competition. WACKER won in the following categories: “family-oriented work conditions,” “service

and support offers,” “personnel development and sustainability,” “information and communications” and “corporate and leadership culture.”

In cooperation with pme Familienservice, WACKER offered a two-week vacation program for school children at the Burghausen site in August 2017. A total of 23 children aged 6 to 12 participated in the pilot project. The project continued in 2018 with 29 children participating.

Compensation and Social Benefits

| GRI 201-3 | GRI 202-1 | GRI 401-2 |

Aside from a fixed base salary, WACKER employees usually receive variable compensation. This voluntary payment to employees on both the standard and above-standard pay scales is tied to the attainment of corporate goals. Since 2017, WACKER has gradually been introducing a new variable compensation system – this will supersede the previous variable compensation components and replace them with a standardized, market-oriented and transparent methodology that applies to all employees at the Group’s German sites. This new variable compensation system increases the employees’ share of profit. Groupwide variable compensation payments totaled €81.1 million in 2018 and €65.1 million in 2017.

IG BCE (the German mining, chemicals and energy labor union) and chemical industry employers agreed on a new collective-bargaining agreement in September 2018. As a result, the standard pay scale rose by 3.6 percent on November 1, 2018 – there had been a previous increase of 2.3 percent on October 1, 2017. In 2019, vacation pay will increase from €614 to €1,200 per annum. Compensation for apprentices also rose, by a total of 9.0 percent for the first two training years and by a total of 6.0 percent for the third and fourth years. WACKER raised the minimum salary bracket values for above-standard-pay-scale employees by

Employees on Parental Leave, WACKER Germany

	2018	2017	2016
Parental leave	513	488	445
Of whom men	264	244	217
Of whom women	249	244	228
Returnees from parental leave	364	351	299
Of whom men	258	244	209
Of whom women	106	107	90
Returnees from parental leave who were still working for the company 12 months later	357	345	296
Of whom men	254	242	206
Of whom women	103	103	90

2.0 percent in July 2017, and by a further 3.0 percent in July 2018.

In August 2018, the HR department updated the time sheets for all employees in Germany. The new features now available to employees include the option of looking up time sheets online.

We believe that it is important to treat temporary workers fairly. WACKER meets all requirements as per the German Law on Temporary Employment (AÜG). The German collective-bargaining agreement on industry supplements for subcontracted employment in the chemical industry (TV BZ Chemie) applies in most cases.

Other important aspects, alongside salaries, include the company's social-insurance contributions. Based on what competitors offer and on local market conditions, these benefits include supplementary sick pay, subsidized company restaurants, and our company cars. What is more, we offer attractive additional benefits that reflect the needs of our employees at different stages of their life. Examples include the ability to arrange flexible working hours, training opportunities, health-promotion offers, and the provision of support in exceptional family circumstances.

Company Pension Plan

A WACKER company pension is an important compensation component and is available at most of our German and non-German sites – except for

regions where the statutory pension appears sufficient or legal provisions are inadequate.

Wacker Chemie AG's pension fund – Pensionskasse der Wacker Chemie VVaG (a mutual insurance company) – provides a company pension to employees in Germany. The fund has some 17,800 members and provides pension payments to around 8,400 retirees. The average pension paid in 2018 was €650 per month (2017: €650). WACKER pays in up to four times an employee's annual pension contributions, with the exact amount being determined by the type of agreement. Employees can supplement their company pensions by making their own additional contributions. As provided for in the collective wage agreements, WACKER supports employees' supplementary contributions. For the base amount, employees receive a 28-percent match called "Chemieförderung I"; additional contributions receive the 13-percent "Chemieförderung II" match. As well as WACKER employees, the company pension fund covers employees of other member companies.

Company Pensions

	2018	2017	2016
Average monthly company pension (€)	650	650	640
Total expenses (€ thousand)	59,200	58,200	56,700

Despite a challenging market environment, the fund was able to produce successful final reports in both 2017 and 2018. Long-term, it must meet an inter-

est requirement of 3.87 percent in order to fulfill its pension obligations without outside assistance. In 2017, the return on total assets was 4.7 percent; in 2018, it was below the long-term interest requirement. Due to persistently low interest rates, Wacker Chemie AG, as the sponsoring entity, and the other member companies made a special contribution of €50 million to the fund. At the end of 2018, the company pension fund had €2.39 billion in assets. The fund has prepared itself well for the coming years with a broad investment portfolio, hedging mechanisms, continual risk evaluation and a strong sponsoring entity backing it. The fund again passed all the stress tests required by Germany's Financial Supervisory Authority (BaFin).

As well as the pension-fund cover, employees in Germany receive an additional supplementary pension for that portion of their salary that exceeds the pension insurance contribution assessment ceiling.

Additionally, WACKER contributes to guaranteed minimum incomes in countries without national mandatory health insurance or pension programs. We make sure that our compensation and social benefits are fair and competitive worldwide. At the very least, they correspond to local legislation or industrial codes of practice and, in many cases, they surpass the local minimum. WACKER Greater China, for example, offers its employees a host of additional benefits, such as insurance policies and relocation assistance. Lower-paid employees, too, are in a position to cover their own and their families' living costs.

WACKER's part-time and fixed-term employees also receive the full range of social benefits. However, participation in some benefits and their full payment, e.g. profit-sharing and the company pension, are dependent on minimum seniority.

In 2018, the company and its employee councils agreed on new company agreements for the coming five years. These govern the topics of phased early retirement and hiring qualified apprentices for the period of 2018 to 2022. The new ruling extends phased early retirement to employees born in an additional two years, who, under certain circumstances, now have the option of retiring early. The company agreement provides that apprentices, if suitable, receive a job offer after graduating.

Employee Turnover

Good social benefits, competitive compensation and motivating tasks make WACKER an attractive employer. That is evident in our employees' long-standing allegiance to the company. The average length of service in Germany (permanent staff) was 18.1 years (2017: 18.3 years). On average, executive personnel remain at the company for 21.6 years.

In 2018, 2.2 percent of employees resigned group-wide (2017: 1.9 percent). Employee turnover due to voluntary resignation is particularly low at WACKER's German sites: 0.5 percent in 2018 (2017: 0.3 percent). At WACKER sites outside Germany, the resignation rate was 6.6 percent in 2018 (2017: 6.5 percent).

WACKER holds a regular celebration to honor its employees who have been with the company for many years. In 2018 alone, 285 employees based in Germany were recognized for 25 or 40 years of service, respectively.

Global Employee Survey

2018 was the first time that WACKER conducted a global employee survey at all of its sites. The goal was to identify the organization's strengths and areas for potential improvement. The online survey is also intended as a tool for assisting managerial employees in improving performance in their areas of responsibility. The evaluation of the global employee survey results showed that WACKER employees around the world identify with their employer to a large degree.

85 percent of those surveyed in Germany and 86 percent at our sites elsewhere are proud to work for WACKER. 88 percent and 86 percent, respectively, would recommend WACKER as an employer. 86 percent of employees worldwide are willing to exert themselves and carry out tasks above and beyond what is required of them to contribute toward the Group's success. 92 percent explained that their tasks and what was expected of them were clearly defined. 91 percent and 92 percent, respectively, responded that they are given work commensurate with their knowledge and abilities.

Both in Germany and globally, 93 percent completely or partly agreed with the statement: "In my organizational unit, we value sustainability."

Employees see room for improvement in the acknowledgment of performance within the company, and in an openness to new ideas.

The participation rate was 72 percent in Germany and 75 percent at sites elsewhere. Compared to the last employee survey in 2015 in Germany, almost all questions got higher approval scores.

Popular Employer

WACKER is among the most highly regarded German companies. In 2018, it came fourth among 300 organizations analyzed in the annual reputation analysis by the market research portal Statista. In the chemical, pharmaceutical and biotechnology industries, WACKER even ranked first. For the study, the market researchers from Statista polled over 5,000 people about companies they have been involved with as business partners, employees or customers.

According to its own managerial employees, too, WACKER ranks among the most popular employers in the German chemical industry. In the member satisfaction survey conducted every year by Germany's Association of Chemical-Industry Executives (VAA), WACKER came fourth among 24 participating companies in 2018. With an overall score of 2.50 (with 1 being the highest and 6 the lowest), WACKER once more improved on its performance in previous years. In the 2017 survey, WACKER had achieved the average overall score of 2.52.

The strategy pursued by WACKER Greater China's HR department makes it one of the 100 best employers for Human Resource Management in China. In 2018, for the sixth year in a row, WGC won the "100 Employer Excellence of China" award, presented by Chinese recruitment agency "51job." WACKER Greater China also received 51job's "Excellence in Employee Development Plan of 2018" award for its exemplary employee development.

Employee Representation

GRI 102-41 | GRI 407-1

Our employees in Germany make use of their option to unionize. However, employees are under no obligation to inform their employer of any union membership, and the employer is not permitted to ask. We therefore do not know how many union members there are at WACKER. Approximately 90 percent of our employees worldwide work in organizational units that have employee representation and are subject to collective-bargaining regulations.

Where a collective-bargaining agreement exists on the employer's side, WACKER employment contracts treat staff based in Germany – regardless of their union membership – as if they were covered by the respective applicable collective-bargaining agreement.

Every WACKER site in Germany has employee representatives. Elections are held regularly, most recently in 2018. WACKER actively nurtures social partnership. In the interests of the company's employees, relations between management and employee representatives are close and constructive. Innovative and feasible company agreements are one result of this dialogue.

Internationally, employees are also free to unionize. If non-German sites have no (statutory or voluntary) employee representation, HR staff members are the contacts for employee interests.

Occupational Health and Safety

Workplace Safety

GRI 403-1 | GRI 403-2 | GRI 403-5 | GRI 403-7 | GRI 403-9

WACKER's processes and standards for workplace safety are aligned with the international OHSAS 18001 standard. Systematic workplace safety includes regular evaluation of hazards and work-area monitoring.

All our employees are given safety training tailored to their own work areas. WACKER Germany, for example, offers online courses on occupational safety issues. Topics range from general safety guidelines for office and laboratory workers to

instruction on safe behavior in potentially explosive atmospheres and the classification of hazardous materials.

Workplace Accidents Involving Permanent Staff and Temporary Workers

	2018	2017	2016
Accident rate across Group: accidents ¹ per 1 million hours worked	2.9	2.8	3.0
Europe	3.6	3.3	3.8
The Americas	1.5	2.2	0.7
Asia	0.4	0.4	0.8
Accident rate across Group: reportable accidents ² per 1 million hours worked	1.3	1.4	1.6
Fatal workplace accidents	–	–	–

¹ Accidents leading to at least one work day missed

² Accidents leading to over three work days missed

One of our workplace safety goals is to ensure that the number of workplace accidents per 1 million hours worked does not exceed 1.7 groupwide by 2020. In terms of reportable accidents (accidents with more than three work days missed), WACKER's numbers are far better than the German chemical industry average. The reportable accident rate in 2018 was 1.3. per 1 million hours worked, whereas in 2017, Germany's BG RCI (the statutory employer liability insurance carrier of the basic materials and chemical industries) registered 9.3 reportable accidents per 1 million hours worked in chemical companies. As in the past, there was not

a single fatal workplace accident among WACKER employees during the reporting period.

Very few accidents at WACKER involve chemicals. The most common causes are tripping, slipping, falling and lack of care when performing manual activities. We are not satisfied with our accident rate and are stepping up our safety efforts. In 2018, we reviewed how effectively our German sites implement key safety regulations, for example those about the safety of partner-company employees or about working safely on ladders.

We are continuing to implement our WACKER Safety Plus (WSP) program, which builds on elements of successful safety strategies at sites with particularly low accident rates – such as safety patrols, emergency drills and holding discussions with the workforce. WACKER Safety Plus has the goal of recognizing and avoiding unsafe behavior – on the way to and from work, in the office, at the plant, when operating machinery, or when handling chemicals.

Safety Days took place at WACKER Greater China's Shanghai, Zhangjiagang and Nanjing sites in 2017. Seminars and safety drills raised the awareness of employees for safety risks and highlighted accident-prevention measures. As the Ulsan plant in South Korea had notched up 17 years without an accident, its site manager was presented with the Korean Chamber of Industry and Commerce's 2018 "Safety Award."

At its German sites, WACKER placed particular emphasis on reviewing and updating job-related hazard assessments in the reporting period. As a consequence, we have improved protection strategies and safety measures in many areas.

Due to the high number of personal-mobility accidents, caused, for example, by tripping, slipping or falling, we focused on exactly this topic in 2017. By launching various campaigns, such as "Crime Scene: Stairs" and holding talks with employees about personal mobility, we aimed to enhance awareness among employees for this topic and, at the same time, encourage them to think about their own habits and behavior patterns. Traffic checks on the site premises complemented the program.

Health Management

| GRI 403-3 | GRI 403-6 |

The health of our workforce is very important to us. That's why one of our corporate goals is to protect it. But our care for our employees goes much further than that. Demographic change entails longer working lives. We want to help our employees remain healthy and productive throughout. WACKER has signed the Luxembourg Declaration on Workplace Health Promotion in the EU. In doing so, we have undertaken to promote health and to encourage employees to improve their health.

Health protection focuses on avoiding adverse influences on employees at the workplace, for example due to hazardous substances. Health promotion focuses on five fields. We seek to avoid spinal disorders and cardiovascular diseases in our workforce, increase mental resilience, enable age-appropriate work and find suitable jobs for staff with health restrictions.

Instruments for Prevention

Two of the most important strategic instruments for ensuring occupational health and safety are medical checkups and health-promotion programs. Health Services at our Burghausen site advises employees in all health matters, particularly concerning availability for work and reintegration. Risk groups such as diabetics and employees with back problems or psychological problems receive in-depth care and are thus kept fit for work in the long term.

We offer preventive checkups to third-level management ("FK3") employees over 45 years of age at all locations in Germany. In addition to organ examinations, the FK3 checkups focus on giving employees advice on how to deal better with mental stress situations. The offer is being well received: in 2018, more than half of the managerial employees affected took part in the checkups. Since 2018, we have been offering an equivalent program for standard-pay-scale employees – the WACKER Health Check.

Pandemic-Preparedness Plan

Our pandemic-preparedness plan minimizes health risks and business disruption in the event of a crisis. The plan defines how and when a central management team should coordinate all emergency-response measures worldwide. It includes regulations on how to deal with employees who have fallen ill or have been exposed, as well as guidelines on business trips to affected regions, and rules concerning site-specific access checks. WACKER has a supply of influenza drugs and special equipment (such as face masks, gloves and disinfectants) to hand out to employees in the event of a pandemic.

Health Programs

| GRI 403-3 | GRI 403-6 | GRI 403-10 |

Under the motto “Just Move It,” WACKER organized its Health Week 2017 in Burghausen, including information events, fitness checks, workshops and the opportunity to get the German Sports Badge. WACKER employees in Munich were given similar offers at the Health Days 2017 in the form of information booths and health initiatives.

In 2018, WACKER collaborated with external partners to offer Health Weeks in Bad Endorf and Bad Griesbach, including workshops on various health-related topics such as exercise, nutrition, relaxation and stress management. A maximum of 15 WACKER employees were able to take part in any one Health Week after prior registration – a total

of 16 Health Weeks were offered for employees in Burghausen and four in Munich.

WACKER’s Health Services launches a groupwide campaign on relevant health topics every two years. “Go for the Check-Up” is the topic of the most recent initiative, launched in 2018. It aims to raise awareness, introduce prevention programs and encourage participation. Specific topics included “Dental Care” and “Vaccination.”

An influenza vaccination is offered once a year for all employees, at all sites around the world. This vaccination is free of charge and voluntary. WACKER employees at both Burghausen and Munich can furthermore complete the in-house WACKER Health Checks and medical checkups with Health Services and external service providers – employees receive paid leave for the time taken for the checkup plus an approximate travel time.

WACKER promotes substance abuse prevention. In general, alcohol is forbidden at work. All managerial staff members are required to attend training programs on the topic of substance abuse prevention. These programs aim to help them recognize employees who are at risk or are already addicted, and to assist them in seeking proper treatment. We also provide management with courses on detecting employees suffering from psychological stress and on alleviating the problem.

The “Fit for Your Shift” project targets stress and strain specific to shift work, skilled manual workers, work in logistics or certified industrial forepersons. In this health program, participants are taught habits that can help them deal better with the pressures of shift work or manual labor in the long term. The program consists of four modules:

- A one-week stay at a rehabilitation clinic
- A three-month program of training at the workplace
- A six-month period during which workers continue the training on their own
- A final refresher weekend

Evaluation of the program after five years showed a significant reduction in risk factors such as blood pressure and blood lipids, but also body weight and body mass index (BMI), and an improvement in the participants’ training level and quality of sleep. Just under 62 percent of participants succeeded in lowering their blood pressure or changing their diet, while 49 percent increased their level of physical activity and 49 percent improved their LDL cholesterol value. By the end of 2018, over 570 employees had taken part in Fit for Your Shift since the program began in 2013.

Sickness Rate

%	2018	2017	2016
Sickness rate ¹	5.7	5.6	5.5

¹ Days lost through illness/target working time in days x 100;
WACKER Germany

The number of recognized occupational diseases is very low at WACKER's German sites. In the past, respiratory diseases and cancer were the most frequent causes of illness; there are some isolated cases where previous exposure to asbestos has caused occupational diseases. In 2018, only one occupational illness was recognized: carpal tunnel syndrome. 2017 was the first time that no occupational disease had been recognized at the Burghausen site. Where there were suspected cases of occupational diseases, different medical conditions were indicated. So far, WACKER has not evaluated groupwide figures concerning occupational diseases of its employees, because the criteria for the recognition of illnesses as occupational vary from country to country.

Occupational Diseases¹

	2018	2017	2016
Suspected cases	16	14	28
Recognized cases ²	1	–	3

¹ WACKER Germany

² Recognized by the Berufsgenossenschaft Rohstoffe und chemische Industrie (the statutory employer liability insurance carrier of the German basic materials and chemical industries)

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 Society

WACKER sees itself as an integral part of society and takes its responsibilities seriously – especially in communities around its sites.

Three WACKER sites took part in the German chemical industry's Open House in September 2018. Some 20,000 visitors came to the Burghausen plant alone.

Donations and Sponsorships

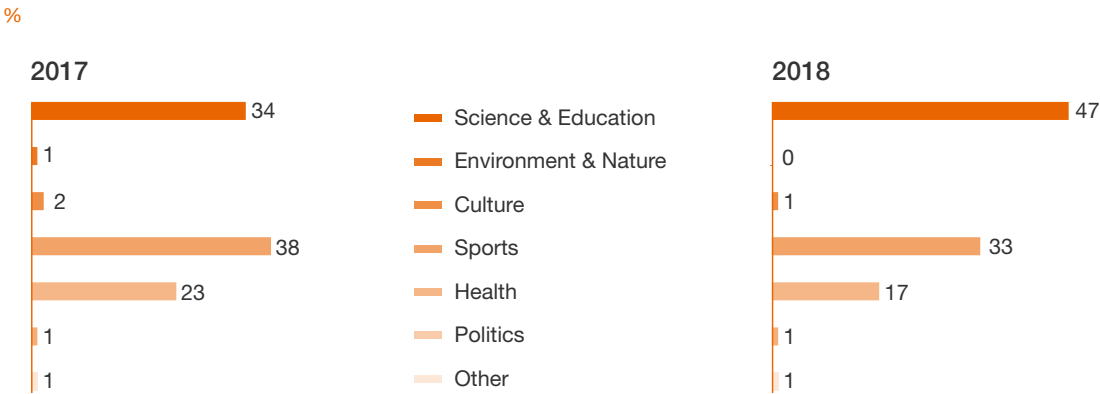
GRI 203-2 | GRI 415-1

At WACKER – we see ourselves as an integral part of the society in which we live and work, which is why we take our social responsibilities seriously, especially in communities around our sites. Training young people in the natural sciences is especially important to us, because we will need dedicated scientists and engineers if we are to remain competitive. Charitable and outreach projects to help children and young people represent another pillar of our social commitment, while the WACKER relief fund (WACKER HILFSFONDS) provides support to victims of natural disasters and helps rebuild devastated regions. As part of our social commitment, we seek enduring partnerships, preferring to invest in long-term projects.

WACKER's Donations and Sponsorships

€ thousand	2018	2017	2016
Donations	1,022	1,283	1,032
of which political donations	0	15	3
Sponsorships	1,133	1,463	1,423
Total	2,155	2,746	2,455
Share of sales (%)	0.04	0.06	0.05

Group Donations and Sponsorships 2017/2018



Around half of our donations in the reporting period went to the [SV Wacker Burghausen sports club](#) (website available in German only) to promote popular sports, to [“Die Arche”](#) (The Ark; website available in German only), a German charity for the young, and to WACKER's relief fund. With regard to our political lobbying in 2017, we donated a total of €15,000 in support of political campaigns.

Our sponsorship activities focus on education, science and the SV Wacker Burghausen soccer club. Our single largest commitment in education and science is our long-term sponsorship of the Institute for Silicon Chemistry at the Technical University of Munich. Funds of €540,000 and roughly €475,000 were paid out for this in 2017 and 2018, respectively.

In 2018, €152 million in current taxes went to governments throughout the world (2017: €92.8 million). For many years, WACKER has been the largest business taxpayer in Burghausen and Nünchritz, the locations of our two biggest German sites.

In addition to WACKER's corporate taxes, governments also receive the personal taxes and social-security contributions paid by our employees.

Neighbors

| GRI 102-43 | GRI 204-1 | GRI 413-1 |

WACKER sees itself as a corporate citizen, and corporate citizenship is based on good relations with municipalities and neighbors. We assess the effects of our business activities on our surroundings both on an ongoing basis and prior to making investment decisions. The assessment process includes analyzing parameters such as anticipated emissions, the regional infrastructure and the impact on the local job market.

We speak openly about what happens behind our factory gates. Our sites throughout the world are responsive to questions from the public and to the concerns of our neighbors. We have central contact persons on hand and operate local hotlines – usually around the clock – in order to provide prompt, clear information for local residents who turn to us. In our [environmental reports](#) and brochures, we publish information about our sites and invite the public to open houses. One of these was held in 2018 as part of a national chemical industry initiative. Over 25,000 interested persons accepted the invitation to the event, visiting our sites in Burghausen, Nünchritz and Stetten, as well as the “Consortium für elektrochemische Industrie” – our central R&D. Additional events include the [WACKER KNOWLEDGE FORUM](#) (webpage available in German only), and the Environment Information Days held at the Burghausen site.

In 2018, WACKER also joined “Businesses for a Cosmopolitan Saxony,” an initiative with a total of 70 members advocating a cosmopolitan, tolerant Saxony. The association supports and promotes economic integration of newcomers from around the country and around the world and, in so doing, is contributing to an international, economically strong Saxony.

The Stetten Salt Mine, which supplies our Burghausen site with salt, began offering its neighbors a digital communication option in 2017: nearby residents can now document anything unusual that they notice, such as unpleasant odors, in a 24-hour, online odor logbook for the city of Haigerloch – an important foundation for finding solutions together should the need arise.

At many sites, we offer free services to surrounding communities. The following are a few examples from the period under review:

- Wacker Metroark Chemicals Pvt. Ltd. (WMC) is a joint venture between WACKER and Metroark, a silicone manufacturer in Kolkata, India. In 2017, WMC held a health camp in the north Indian city of Ludhiana, at which some 350 people from neighboring communities had their eyes tested and underwent a health check free of charge. Following the examination, 106 participants received free glasses and 19 patients underwent cataract surgery. Blood tests and ECGs were offered alongside the eye tests. Additional health camps were held in East and West India. In 2018, WMC organized five additional health

camps in India, providing a total of roughly 2,000 medical exams and treatments.

- WACKER held its 21st annual “Household Hazardous Waste Collection Day” for neighbors of its Adrian site in Michigan (USA) in 2018. The event provides an opportunity for nearby residents to bring in household products that are not allowed in trash receptacles, such as paints, finishes, waste oil, antifreeze, pesticides and herbicides, spray cans and batteries. Held in Adrian continuously since 1997, this campaign has resulted in the collection and proper disposal or recycling of some 264 metric tons of household hazardous waste.
- At its Allentown site in the US, WACKER has been involved with Habitat for Humanity. In addition to collecting monetary donations, WACKER employees have also participated in renovating homes for underprivileged families – 27 percent of WACKER’s Allentown employees took part in the volunteer program in 2018.

In 2018, Paul Lindblad, president of WACKER Greater China, received the “Magnolia Gold Award” from the city of Shanghai. He was one of ten award winners. Shanghai uses this award – named after the city’s flower – to honor foreigners living there who have made significant contributions to economic performance, international relations and the development of the community.

Procuring goods and services from local suppliers is another important way in which WACKER supports neighboring communities. We purchase about 90 percent of our technical goods and services in the country for which they are intended. Our two biggest sites are good examples of this regional supply-chain system:

■ Burghausen, Bavaria

In 2018, the site procured 21 percent (€210 million) of its technical goods and services from local suppliers (2017: 20 percent = €186 million). Another 28 percent came from suppliers in other parts of Bavaria.

■ Nünchritz, Saxony

Located in the state of Saxony in eastern Germany, this plant sourced 12 percent of its supplies and services from the surrounding region in 2018 (16 percent in 2017). An additional 4 percent of its suppliers were from other eastern German states (3 percent in 2017). In total, these services from Saxony were valued at roughly €61 million (€74 million in 2017).

Regional Procurement

	2018	2017	2016
Share of regionally procured ¹ technical goods and services (%)			
Germany	92	93	89
Greater China ²	93	94	97
USA	92	88	94
Other countries ³	87	88	73
Group	92	92	89

¹ Suppliers from the respective country

² China, Hong Kong and Taiwan

³ India, Norway and Asia (not including Greater China)

Schools

GRI 203-1

WACKER wants children and young people to be excited about technology and the natural sciences. After all, as a chemical company, we are going to need outstanding scientists in the future – a goal we are pursuing in a variety of ways.

WACKER supports progressive teaching methods and modern approaches to school management. Our Group is one of the founding members of the Bavarian Educational Pact (website available in German only), a foundation comprising 143 companies that has joined the state of Bavaria in sponsoring various projects at public schools. The aim of all of these projects is to modernize the Bavarian educational system.

Studying Chemistry with the Experiment Kit

Examine, experiment, explore – and acquire a critical educational foundation in the process. WACKER's experiment kit for schools, CHEM₂DO[®], fulfills this criterion. Designed for junior and senior high school students, the kit contains eight experiments involving silicones and cyclodextrins. Chemistry teachers who want to do the experiments in class receive training at teacher-training centers run throughout Germany by the Society of German Chemists and at select universities. The kit is supplied to schools free of charge.

WACKER hopes that the kit will spark an interest in chemistry among young people and provide chemistry teachers with teaching aids featuring innovative materials.

A digital version of the experiment kit was launched in 2018 as well, with animations and examples of instructions from the experiment kit available online at www.chem2do.de (in German only). CHEM₂DO Digital was unveiled in the fall of 2017 at a networking session for chemistry educators in Munich. WACKER also presented the experiment kit website at didacta 2018, the world's largest education tradeshow in Hannover, Germany.

In 2018, we sponsored and organized the Young Scientists competition in Bavaria (website available in German only) for the eleventh time. We also again sponsored the Dresden/East Saxony Young Scientists Regional Competition (website available in German only). In 1998, WACKER began its involvement in Europe's largest competition for young people in the natural sciences, mathematics and technology.

All WACKER sites help young people prepare for a profession. At career days and student workshops, our employees introduce high-school students to jobs in the chemical industry and teach them practical skills. The following are a few examples from the period under review:

- WACKER's Burghausen Vocational Training Center (BBiW; website available in German only) held career information days in July 2017 and

2018. The theme of the 2018 event was "For Anyone Wanting to Go Their Own Way." Some 140 apprentices and 50 mentors hosted high-school students, parents and teachers throughout a diverse program in creative workshops and in our chemistry and physics laboratories. In addition, the BBiW also held a multi-day seminar for college-preparatory students and mini-internships for vocational students. Girl's Day in 2017 and 2018 gave high-school-age girls a chance to learn about the many different training opportunities at WACKER, including professions in which women are not well represented.

- Vocational training programs at WACKER were represented at several education tradeshows in 2017 and 2018, including VOCATIUM in Munich and Dresden, STUZUBI, and the IT & Engineering student information fair in Munich. WACKER also had a presence at the Inn-Salzach education tradeshow in Mühldorf (2017) and Burghausen (2018), and at the education tradeshow in Salzburg. At VOCATIUM alone, WACKER trainees and mentors spoke with roughly 100 students about career options. While training for a career as a chemical laboratory technician generated the most interest, students also learned about business careers and work-study programs. We also shared our training opportunities in January 2017 and 2018 at the Karriere Start fair in Dresden – the largest regional training and job fair in Saxony. Those who are interested also have an opportunity each year to talk with WACKER apprentices and mentors at various regional tradeshows and

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events in Saxony and southern Brandenburg, including “Chance” in Oschatz, the education day hosted by the Dresden Chamber of Industry and Commerce, and the vocational training information day held directly in the company.

- WACKER has been active in Germany’s “We Together” business integration initiative since 2017. As part of its involvement, WACKER has worked to help young refugees find their bearings and receive training. This has included training for three young refugees at the BBiW – as an office manager, an electronics technician for automation technology, and as a chemical technician. A fourth apprentice found a permanent position outside of WACKER. A professional orientation week was held at the BBiW for school-age refugee children, and 17 young people participated.
- In 2018, our US production site in Charleston, Tennessee, received the “Platinum BEST Partner Award” for its partnership with Bradley Central High School in Cleveland. The aim of the cooperative effort is to advance scientific and technical education programs and to help students explore career options.

Universities

GRI 203-1

WACKER attaches considerable importance to fostering young scientific talent and maintaining close contacts with universities. Our researchers are regularly invited to give presentations and guest lectures at universities, and university groups visit our sites for an inside look at work in an industrial corporation. Students can write their bachelor’s, master’s and doctor’s theses at WACKER, or work as interns or take vacation jobs. In 2017 and 2018, we sponsored some 300 final thesis projects and internships with students at over 50 universities internationally.

Wacker Chemie AG and the Technical University of Munich (TUM) have maintained a close partnership in silicon chemistry since 2006. We are sponsoring the Institute of Silicon Chemistry, funded by us and located on the Garching research campus near Munich, with a total of €8.5 million. In the past thirteen years, 46 research projects have been conducted here, resulting in ten patents and 54 scientific publications. Since the Institute was founded, we have also sponsored 57 scholarship holders.

WACKER is taking part in the German Federal Ministry of Education’s national scholarship program (“Deutschlandstipendium”). This program provides students with a monthly stipend of €300, half of which is contributed by the Federal Government and half by private donors (companies, individuals). In 2018, a total of 20 students at eleven different

colleges and universities were awarded national scholarships funded by WACKER. Alongside scholarship recipients, WACKER has also given awards to the top engineering and bioengineering graduates at the Technical University of Dortmund in order to support the most talented students in these fields early on and to put the company on their radar.

In addition, WACKER’s management trainee program was awarded the 2018 seal of approval for trainee programs that promote careers and are fair. The honor certifies the quality of a program and is given each year by Absolventa GmbH in collaboration with Munich’s Ludwig-Maximilians University (LMU).

WACKER was also recognized as a Fair Company (website available in German only) in 2017 and 2018. Key factors for receiving this seal of approval is feedback from interns which is then assessed by the Fair Company Initiative. The initiative was established by Germany’s Handelsblatt and Wirtschaftswoche business newspapers with the aim of placing young people in internships that abide by the Fair Company rules. These include a prohibition on replacing full-time employees with interns and on giving internships to applicants for permanent positions. Internships should instead be geared toward career development and offered primarily during training periods. Even after a former WACKER apprentice goes on to study or do an internship somewhere else, the company systematically stays in touch, providing such young people

with information on new developments at WACKER, including suitable job offers. Plus, the students then have a contact at WACKER if they are interested in joining the company after they finish their degree.

Dr. Herbert W. Roesky, Emeritus Professor of Inorganic Chemistry at the Georg-August University of Göttingen, received the 2018 WACKER Silicone Award. Presented by WACKER during the ninth European Silicon Days in Saarbrücken, the award recognizes Roesky's groundbreaking work in the field of low-valence silicon chemistry. The prize winner is among the world's best known scientists in the field of fluorine and silicon chemistry. Roesky's principal discoveries include the synthesis of a dichlorosilylene from trichlorosilane. Industrial applications such as process optimization represent another area where Roesky's work is of importance. The WACKER Silicone Award, which has a cash value of €10,000, ranks alongside the American Chemical Society's Kipping Award as the most important international accolade in organosilicon chemistry.

Politics and NGOs

| GRI 102-13 | GRI 102-43 | GRI 203-1 |

In accordance with our code of conduct, we are committed to responsibility and integrity – including in our dealings with political parties and non-governmental organizations. We represent our political interests in a way that is consistent with the positions we have expressed publicly. In our work with political entities, we focus on concrete issues and are open to dialogue with any democratic parties.

WACKER takes an active role in trying to influence energy policies. During the period under review, we made the following contributions to political opinion:

- We support Germany's transition to renewable energy as part of the Paris climate agreement, especially the cost-efficient expansion of solar and wind energy as mainstays of Germany's future energy mix, and the climate-friendly use of combined heat and power plants.
- As an industrial company with a high gas and electricity demand, we need globally competitive energy prices and a secure power supply.
- As a globally active company, we support fair and free trade. We oppose any kind of punitive tariffs on solar modules and materials for photovoltaics. They artificially raise the cost of solar products, reduce solar energy's competitiveness and ultimately prevent the cost-efficient implementation of the Paris climate agreement.

WACKER maintains a liaison office in Berlin to better represent the company's political interests. In addition, we regularly extend invitations to politicians for discussions and tours at our sites.

National and international associations – especially Europe's Cefic (European Chemical Industry Council), the USA's ACC (American Chemistry Council) and Germany's VCI (Chemical Industry Association; relevant webpages available in German only) – serve as a platform for our expertise. Working within these bodies, we examine issues ranging from plant, product and occupational safety to environmental protection, nanotechnology and industrial ("white") biotechnology. Our experts are also active in trade associations such as Deutsche Bauchemie (German construction-chemicals association), where issues include sustainable construction.

WACKER in Burghausen is a founding member of the ChemDelta Bavaria initiative, which celebrated its tenth anniversary in 2017. The companies that make up ChemDelta Bavaria employ some 20,000 people and indirectly secure a further 50,000 jobs in the region. Improved regional infrastructure is one of the issues that ChemDelta Bavaria champions, and this includes double-track upgrades and electrification on rail routes, as well as a sustainable, secure energy supply.

During the reporting period, ChemDelta Bavaria once again extended an invitation to its annual "Summer Lounge," where leaders from the chemi-

cal sites engaged in a dialogue with representatives from science, the political establishment and regulatory agencies. Participants explored current and future challenges facing ChemDelta Bavaria, such as energy and environmental policy.

Children

GRI 203-1

WACKER supports “[Die Arche](#)” (The Ark; website available in German only), a Munich-based Christian charity for the young. The initiative, which works with around 400 children and young people from socially disadvantaged families, including refugee children, provides children with hot meals and extra tutoring, organizes leisure activities and offers counseling. WACKER supported The Ark in 2017 and 2018 as well, each time donating €100,000 to the charity. Wacker Chemie AG has supported the work of The Ark with annual donations in this amount for twelve years. WACKER’s commitment to The Ark goes beyond financial contributions – its employees also spend their free time as volunteers at the annual Ark Summer Festival.

WACKER also supports children and young people at its sites outside Germany. For example, WACKER Greater China’s relief organization WACKER HELP intensified its collaboration with the Shanghai children’s home during the reporting period. The home’s modernization program includes plans to update the library facilities over the long term. WACKER Greater China employees

work as volunteers for WACKER HELP, aiming to improve the educational opportunities of disadvantaged children.

Groups of volunteers regularly promote the children’s interest in reading. Employees read the books out loud for the children and help them to paint or do handicrafts. One of the projects WACKER and a team of employee volunteers are involved in is updating the library facilities. A team of employee volunteers helps organize the thousands of books donated to the home’s library.

In 2017, WACKER HELP received the “More than a market” award for its long-term social commitment. This prize is jointly awarded by the delegation of the German Chamber of Industry and Commerce in China and by the Bertelsmann Foundation, with the support of the German Consulate General in Shanghai. Out of a total of 75 contestants, WACKER HELP was one of seven award winners.

At the company’s American site in Cleveland, Tennessee, WACKER employees donate their time for the annual “Make a Difference Day.” One of their projects at this event was the construction of a therapy chair for autistic children in the Lee University Developmental Inclusion Class. They also support instructors there with teaching materials and IT equipment.

WACKER Brazil regularly supports local community projects, including corporate volunteering projects for childcare facilities. In 2018, for example,

WACKER Brazil donated money and volunteers to a tree-planting initiative in Jandira and to other community projects.

Disaster Aid

GRI 203-1

The [WACKER Relief Fund](#) is dedicated to providing unbureaucratic, long-term aid, especially in the wake of natural disasters. The fund’s board members and trustees work on a voluntary basis. So far, Wacker Chemie AG has matched all employee contributions to the fund.

One of the first projects that the relief fund supported after its foundation in 2005 was the construction of the school in Kosgoda, Sri Lanka. The fund continues to support the running of this school. Located in a region destroyed by the 2004 tsunami, the school was opened in 2006. The WACKER Relief Fund uses its cent-donation program to finance school operations for its current enrollment of around 220 students. Plus, there are another 180 students in the associated kindergarten and orphanage, not to mention the young people attending the affiliated vocational training center.

The roughly 4,500 employees who participated in the WACKER Relief Fund’s cent-donation program consent to having their monthly salary rounded down to the nearest euro – the difference in cents is then donated to the relief fund. On average,

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WACKER

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Management

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Supply Chain

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Production &
Safety

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Products

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Employees

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Society

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GRI Index &
Glossary

the participating employees donate 50 cents per month. This amount is then matched by the company for a monthly total of over €4,500, which equates to an annual donation of about €54,000.

In the spring of 2015, large areas of Nepal were devastated by two severe earthquakes in which more than 9,000 people died and 600,000 homes were destroyed. The WACKER Relief Fund selected a project for school development and maintenance, and supports the student-run charitable organization Namaste Nepal S-GmbH based in Freiberg. Since 2005, this charity has worked with a Nepalese aid organization on the reconstruction and operation of a total of seven schools and kindergartens in the Sindhupalchok province. A secondary school in Gati and an elementary school in Singarche were completed in November 2018. The elementary school and kindergarten in Dandakateri were able to resume operations during the period under review.

Following the 2010 earthquake in Haiti, the WACKER Relief Fund supported the reconstruction of the school in Gressier, and has been sponsoring ongoing school operations, including meals, since 2011. Over 800 students currently attend the school center, which consists of a kindergarten, elementary school and high school.

Parts of the Lower Bavaria region were hit by a once-in-a-century flood in June 2016, which affected many of WACKER's employees. The WACKER Relief Fund gave the district of Rottal-Inn

a donation of €100,000 in emergency aid for flood victims. The company also asked employees to support affected colleagues by making donations to the fund. Employees responded in large numbers, donating approximately €156,000. The company matched employee donations and increased this amount by an additional €188,000, making total of €500,000 available for disbursement. In order to distribute the donated funds as fairly as possible, the WACKER Relief Fund developed a distribution concept that was used for reviewing requests for aid from affected employees. The money was then paid to flood victims over the course of 2017.

WACKER Greater China employees work as volunteers for WACKER HELP, a charitable initiative founded in 2005 with the aim of improving the educational opportunities of disadvantaged children. The initiative provides long-term support for a school in the Chinese province of Sichuan. The elementary school in the village of Fujia was destroyed in the major earthquake that struck Sichuan in 2008. With a donation of RMB 1 million (over €100,000), WACKER's relief fund financed the school's reconstruction. It reopened in 2009 and was named WACKER Fujia Village Primary School. Since 2009, WACKER HELP has supported more than 300 schoolchildren there. Thanks to the donations of WACKER Greater China employees, the school has been able to provide these children with daily hot lunches since 2011. In 2012, WACKER HELP started to offer disadvantaged students in

Fujia an annual scholarship until they reach high-school age.

WACKER Fujia Village Primary School is not the only WACKER relief project in China. Since 2006, WACKER Greater China and its employees have endowed 17 libraries at elementary schools as well as a music room in Qimen County in Anhui Province and in Liannan Yao Autonomous County in Guangdong Province.

GRI Index & Glossary

Our reporting is based on the Sustainability Reporting Standards issued by the Global Reporting Initiative (GRI). A special index refers to the pages that contain information on the individual GRI indicators.

GRI Content Index

GRI 102-55



For the Materiality Disclosures Service, GRI Services reviewed that the GRI content index is clearly presented and the references for Disclosures 102-40 to 102-49 align with appropriate sections in the body of the report. The service was performed on the German version of the report.

GRI 101: Foundation 2016

GRI 101 does not contain any disclosures.

GRI 102: General Disclosures 2016

Organizational Profile

Disclosures	Link
102-1	Name of the organization About this Report
102-2	Activities, brands, products, and services Group Structure and Business Operations Key Products, Services and Business Processes Product Safety Research and Development Sustainable Products
102-3	Location of headquarters Legal Structure
102-4	Location of operations Group Structure and Business Operations Sites
102-5	Ownership and legal form Legal Structure
102-6	Markets served AR 2018: Major Sales Markets and Competitive Positions Group Structure and Business Operations Key Products, Services and Business Processes
102-7	Scale of the organization Key Performance Indicators Group Structure and Business Operations Key Products, Services and Business Processes Employment Structure
102-8	Information on employees and other workers Employment Structure Life-Phase-Oriented Work

Disclosures

102-9	Supply chain	Sustainability Along the Supply Chain Logistics and Transport
102-10	Significant changes to the organization and its supply chain	Key Events 2017 – 2018 About this Report
102-11	Precautionary principle or approach	Voluntary Commitments
102-12	External initiatives	Voluntary Commitments Vision and Goals
102-13	Membership of associations	Politics and NGOs

Strategy

102-14	Statement from senior decision-maker	Introduction by the President & CEO
102-15	Key impacts, risks, and opportunities	AR 2018: Central risk areas Vision and Goals

Ethics and Integrity

102-16	Values, principles, standards, and norms of behavior	Business Principles
102-17	Mechanisms for advice and concerns about ethics	Voluntary Commitments Risk and Compliance Management

Link

Governance

Disclosures

102-18	Governance structure	Management and Supervision Management Structures
102-19	Delegating authority	Management Structures Personnel Responsibility
102-20	Executive-level responsibility for economic, environmental, and social topics	Management Structures
102-22	Composition of the highest governance body and its committees	Management and Supervision Diversity, Inclusion and Equal Opportunity
102-23	Chair of the highest governance body	Management and Supervision
102-24	Nominating and selecting the highest governance body	AR 2018: Corporate Governance Report and Declaration on Corporate Management Diversity, Inclusion and Equal Opportunity
102-25	Conflicts of interest	AR 2018: Corporate Governance Report and Declaration on Corporate Management
102-26	Role of highest governance body in setting purpose, values, and strategy	Management Structures
102-28	Evaluating the highest governance body's performance	AR 2018: Compensation Report
102-29	Identifying and managing economic, environmental, and social impacts	Management Structures
102-30	Effectiveness of risk management processes	Voluntary Commitments Risk and Compliance Management AR 2018: Risk Management Structures and Tools
102-31	Review of economic, environmental, and social topics	Management Structures

Link

Disclosures

Link

102-33	Communicating critical concerns	Risk and Compliance Management
102-35	Remuneration policies	AR 2018: Compensation Report
102-36	Process for determining remuneration	AR 2018: Compensation Report

Stakeholder Engagement

Disclosures

Link

102-40	List of stakeholder groups	Communication with Stakeholders
102-41	Collective bargaining agreements	Employee Representation
102-42	Identifying and selecting stakeholders	Communication with Stakeholders
102-43	Approach to stakeholder engagement	Customer Management Communication with Stakeholders Analysis of Material Sustainability Topics Neighbors Politics and NGOs
102-44	Key topics and concerns raised	Analysis of Material Sustainability Topics

Reporting Practice

Disclosures

Link

102-45	Entities included in the consolidated financial statements	AR 2018: Scope of Consolidation About this Report
102-46	Defining report content and topic Boundaries	About this Report Analysis of Material Sustainability Topics
102-47	List of material topics	Analysis of Material Sustainability Topics
102-48	Restatements of information	For better comparability, the key figures published for 2016 exclude data on Siltronic, a former business division.
102-49	Changes in reporting	– The following topics are discussed in separate sections: data protection , conflict minerals and palm oil . Similarly, the results of supplier evaluations are described separately. The map shown in the “ Sites ” subsection depicts WACKER Group sites. See “ Management/Organization ” for details of site-specific certifications. – Once WACKER stopped holding a majority stake in Siltronic AG, the latter no longer formed part of this report's scope of consolidation.
102-50	Reporting period	About this Report
102-51	Date of most recent report	Key Events 2017 – 2018
102-52	Reporting cycle	About this Report
102-53	Contact point for questions regarding the report	Contact
102-54	Claims of reporting in accordance with the GRI Standards	About this Report

Disclosures

102-55	GRI content index
102-56	External assurance

Link

GRI Content Index
The report's content has not been reviewed by a third party.

GRI 200: Economic

Topic: Economic Performance

Disclosures

Link

GRI 103: Management approach 2016

103-1	Explanation of the material topic and its boundary	Vision and Goals AR 2018: Strategy of the WACKER Group
103-2	The management approach and its components	AR 2018: Business Model of the Group AR 2018: Strategy of the WACKER Group Vision and Goals Business Principles Productivity Programs
103-3	Evaluation of the management approach	AR 2018: Risk Management Structures and Tools AR 2018: Value-Based Management Is Integral to Our Corporate Policies

GRI 201: Economic Performance 2016

201-1	Direct economic value generated and distributed	AR 2018: Statement of Income AR 2018: Note 01 Revenue from Contracts with Customers
201-3	Defined benefit plan obligations and other retirement plans	AR 2018: Note 12 Provisions for Pensions Compensation and Social Benefits

Topic: Market Presence

Disclosures	Link
GRI 103: Management approach 2016	
103-1 Explanation of the material topic and its boundary	Employment Structure
103-2 The management approach and its components	Employment Structure
103-3 Evaluation of the management approach	Talent Management and Managerial Staff
GRI 202: Market Presence 2016	
202-1 Ratios of standard entry level wage by gender compared to local minimum wage	Compensation and Social Benefits
202-2 Proportion of senior management hired from the local community	Diversity, Inclusion and Equal Opportunity
Topic: Indirect Economic Impacts	
GRI 103: Management approach 2016	
103-1 Explanation of the material topic and its boundary	Donations and Sponsorships
103-2 The management approach and its components	Donations and Sponsorships
103-3 Evaluation of the management approach	Donations and Sponsorships
GRI 203: Indirect Economic Impacts 2016	
203-1 Infrastructure investments and services supported	Logistics and Transport Schools Universities Politics and NGOs Children Disaster Aid
203-2 Significant indirect economic impacts	Donations and Sponsorships

Topic: Procurement Practices

Disclosures	Link
GRI 103: Management approach 2016	
103-1 Explanation of the material topic and its boundary	Neighbors
103-2 The management approach and its components	Neighbors
103-3 Evaluation of the management approach	Neighbors
GRI 204: Procurement Practices 2016	
204-1 Proportion of spending on local suppliers	Neighbors
Topic: Anti-corruption	
GRI 103: Management approach 2016	
103-1 Explanation of the material topic and its boundary	Voluntary Commitments Risk and Compliance Management
103-2 The management approach and its components	Voluntary Commitments Risk and Compliance Management
103-3 Evaluation of the management approach	Voluntary Commitments Risk and Compliance Management
GRI 205: Anti-corruption 2016	
205-1 Operations assessed for risks related to corruption	Risk and Compliance Management
205-2 Communication and training about anti-corruption policies and procedures	Risk and Compliance Management
205-3 Confirmed incidents of corruption and actions taken	Risk and Compliance Management

Topic: Anti-competitive Behavior

Disclosures

Link

GRI 103: Management approach 2016

103-1	Explanation of the material topic and its boundary	Risk and Compliance Management
103-2	The management approach and its components	Risk and Compliance Management
103-3	Evaluation of the management approach	Risk and Compliance Management

GRI 206: Anti-competitive Behavior 2016

206-1	Legal actions for anti-competitive behavior, anti-trust, and monopoly practices	Risk and Compliance Management
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Topic Not Covered by GRI: Risk Management

Disclosures

Link

GRI 103: Management approach 2016

103-1	Explanation of the material topic and its boundary	Voluntary Commitments Risk and Compliance Management
103-2	The management approach and its components	Voluntary Commitments Risk and Compliance Management
103-3	Evaluation of the management approach	Voluntary Commitments Risk and Compliance Management

Risk Management

Not applicable	Central risk areas	AR 2018: Central risk areas
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GRI 300: Environmental

Topic: Materials

Disclosures

Link

GRI 103: Management approach 2016

103-1	Explanation of the material topic and its boundary	Environmental Compatibility
103-2	The management approach and its components	Environmental Performance Assessment Integrated Production – Our Greatest Strength Environmental Compatibility
103-3	Evaluation of the management approach	Environmental Compatibility

GRI 301: Materials 2016

301-1	Materials used by weight or volume	We do not report the weight/ volume of the materials used, owing to the confidential nature of the data involved.
301-2	Recycled input materials used	Integrated Production – Our Greatest Strength

Topic: Energy

Disclosures	Link
GRI 103: Management approach 2016	
103-1 Explanation of the material topic and its boundary	Environmental Performance Assessment Energy
103-2 The management approach and its components	Goals & Outlook – Production Environmental Performance Assessment Integrated Production – Our Greatest Strength Energy Environmental Compatibility
103-3 Evaluation of the management approach	Energy
GRI 302: Energy 2016	
302-1 Energy consumption within the organization	Energy
302-4 Reduction of energy consumption	Energy
302-5 Reductions in energy requirements of products and services	Sustainable Products

Topic: Water and Effluents

Disclosures	Link
GRI 103: Management approach 2016	
103-1 Explanation of the material topic and its boundary	Water
103-2 The management approach and its components	Goals & Outlook – Production Environmental Performance Assessment Water
103-3 Evaluation of the management approach	Water
GRI 303: Water and Effluents 2018	
303-1 Management approach – Interactions with water as a shared resource	Water Environmental Compatibility
303-2 Management approach – Management of water discharge-related impacts	Water Soil and Groundwater
303-4 Water discharge	Water
303-5 Water consumption	Water

Topic: Biodiversity

Disclosures	Link
GRI 103: Management approach 2016	
103-1 Explanation of the material topic and its boundary	Nature Conservation
103-2 The management approach and its components	Goals & Outlook – Production Nature Conservation Environmental Performance Assessment Environmental Compatibility
103-3 Evaluation of the management approach	Nature Conservation
GRI 304: Biodiversity 2016	
304-1 Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	Nature Conservation
304-2 Significant impacts of activities, products, and services on biodiversity	Nature Conservation
304-3 Habitats protected or restored	Nature Conservation

Topic: Emissions

Disclosures	Link
GRI 103: Management approach 2016	
103-1 Explanation of the material topic and its boundary	Environmental Performance Assessment Air
103-2 The management approach and its components	Controlling Instruments Goals & Outlook – Production Environmental Performance Assessment Integrated Production – Our Greatest Strength Air
103-3 Evaluation of the management approach	Air
GRI 305: Emissions 2016	
305-1 Direct (Scope 1) GHG emissions	Air
305-2 Energy indirect (Scope 2) GHG emissions	Air
305-3 Other indirect (Scope 3) GHG emissions	Air Logistics and Transport
305-5 Reduction of GHG emissions	Air
305-7 Nitrogen oxides (NO _x), sulfur oxides (SO _x), and other significant air emissions	Air

Topic: Effluents and Waste

Disclosures	Link
GRI 103: Management approach 2016	
103-1 Explanation of the material topic and its boundary	Waste Environmental Performance Assessment
103-2 The management approach and its components	Goals & Outlook – Production Environmental Performance Assessment Integrated Production – Our Greatest Strength Waste
103-3 Evaluation of the management approach	Waste
GRI 306: Effluents and Waste 2016	
306-2 Waste by type and disposal method	Waste
306-3 Significant spills	Soil and Groundwater Prevention
306-5 Water bodies affected by water discharges and/or runoff	Nature Conservation

Topic: Environmental Compliance

Disclosures	Link
GRI 103: Management approach 2016	
103-1 Explanation of the material topic and its boundary	Risk and Compliance Management
103-2 The management approach and its components	Risk and Compliance Management
103-3 Evaluation of the management approach	Risk and Compliance Management
GRI 307: Environmental Compliance 2016	
307-1 Non-compliance with environmental laws and regulations	Risk and Compliance Management

Topic: Supplier Environmental Assessment

Disclosures

Link

GRI 103: Management approach 2016

103-1	Explanation of the material topic and its boundary	Sustainability Along the Supply Chain Processes and Tools TfS Supplier Evaluation
103-2	The management approach and its components	Goals & Outlook – Supply Chain Sustainability Along the Supply Chain Processes and Tools TfS Supplier Evaluation
103-3	Evaluation of the management approach	Sustainability Along the Supply Chain Processes and Tools TfS Supplier Evaluation

GRI 308: Supplier Environmental Assessment 2016

308-2	Negative environmental impacts in the supply chain and actions taken	Processes and Tools TfS Supplier Evaluation Results
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GRI 400: Social

Topic: Employment

Disclosures

Link

GRI 103: Management approach 2016

103-1	Explanation of the material topic and its boundary	Employment Structure Life-Phase-Oriented Work Compensation and Social Benefits
103-2	The management approach and its components	Employment Structure Life-Phase-Oriented Work Compensation and Social Benefits
103-3	Evaluation of the management approach	Employment Structure Life-Phase-Oriented Work Compensation and Social Benefits

GRI 401: Employment 2016

401-1	New employee hires and employee turnover	Employment Structure Vocational Training
401-2	Benefits provided to full-time employees that are not provided to temporary or part-time employees	Compensation and Social Benefits
401-3	Parental leave	Life-Phase-Oriented Work

Topic: Labor/Management Relations

Disclosures	Link
GRI 103: Management approach 2016	
103-1 Explanation of the material topic and its boundary	Employment Structure Employee Representation
103-2 The management approach and its components	Employment Structure Employee Representation
103-3 Evaluation of the management approach	Employment Structure Employee Representation
GRI 402: Labor/Management Relations 2016	
402-1 Minimum notice periods regarding operational changes	Employment Structure

Topic: Occupational Health and Safety

Disclosures	Link
GRI 103: Management approach 2016	
103-1 Explanation of the material topic and its boundary	Demographic Change Workplace Safety Health Management
103-2 The management approach and its components	Goals & Outlook – Safety Goals & Outlook – Employees Demographic Change Workplace Safety Health Management
103-3 Evaluation of the management approach	Demographic Change Workplace Safety Health Management
GRI 403: Occupational Health and Safety 2018	
403-1 Management approach – Occupational health and safety management system (employees & workers)	Workplace Safety
403-2 Management approach – Hazard identification, risk assessment, and incident investigation (employees & workers)	Prevention Incident Management Accidents and Incidents Workplace Safety
403-3 Management approach – Occupational health services (employees & workers)	Health Management Health Programs Prevention
403-4 Management approach – Worker participation, consultation, and communication on occupational health and safety (employees & workers)	Incident Management
403-5 Management approach – Worker training on occupational health and safety (employees & workers)	Prevention Workplace Safety
403-6 Management approach – Promotion of worker health (employees & workers)	Health Management Health Programs
403-7 Management approach – Prevention and mitigation of occupational health and safety	Prevention Workplace Safety

Disclosures	Link
impacts directly linked by business relationships	
403-9 Work-related injuries	Workplace Safety
403-10 Work-related ill health	Health Programs

Topic: Training and Education

Disclosures	Link
GRI 103: Management approach 2016	
103-1 Explanation of the material topic and its boundary	Vocational Training Advanced Training Demographic Change
103-2 The management approach and its components	Vocational Training Advanced Training Talent Management and Managerial Staff Demographic Change
103-3 Evaluation of the management approach	Vocational Training Advanced Training Demographic Change

GRI 404: Training and Education 2016	
404-1 Average hours of training per year per employee	Advanced Training
404-2 Programs for upgrading employee skills and transition assistance programs	Advanced Training Talent Management and Managerial Staff
404-3 Percentage of employees receiving regular performance and career development reviews	Advanced Training

Topic: Diversity and Equal Opportunity

Disclosures	Link
GRI 103: Management approach 2016	
103-1 Explanation of the material topic and its boundary	Diversity, Inclusion and Equal Opportunity
103-2 The management approach and its components	Advanced Training Diversity, Inclusion and Equal Opportunity
103-3 Evaluation of the management approach	Diversity, Inclusion and Equal Opportunity

GRI 405: Diversity and Equal Opportunity 2016	
405-1 Diversity of governance bodies and employees	Diversity, Inclusion and Equal Opportunity
405-2 Ratio of basic salary and remuneration of women to men	Diversity, Inclusion and Equal Opportunity

Topic: Non-discrimination

Disclosures	Link
GRI 103: Management approach 2016	
103-1 Explanation of the material topic and its boundary	Voluntary Commitments Diversity, Inclusion and Equal Opportunity
103-2 The management approach and its components	Voluntary Commitments Diversity, Inclusion and Equal Opportunity
103-3 Evaluation of the management approach	Voluntary Commitments Diversity, Inclusion and Equal Opportunity

GRI 406: Non-discrimination 2016	
406-1 Incidents of discrimination and corrective actions taken	We do not keep a register of cases of discrimination.

Topic: Freedom of Association and Collective Bargaining

Disclosures	Link
GRI 103: Management approach 2016	
103-1 Explanation of the material topic and its boundary	Voluntary Commitments Employee Representation TfS Supplier Evaluation
103-2 The management approach and its components	Voluntary Commitments Employee Representation TfS Supplier Evaluation
103-3 Evaluation of the management approach	Voluntary Commitments Employee Representation TfS Supplier Evaluation
GRI 407: Freedom of Association and Collective Bargaining 2016	
407-1 Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk	Employee Representation TfS Supplier Evaluation We do not discuss this topic with our sites in further detail, because we generally give our employees the opportunity to unionize.

Topic: Child Labor

Disclosures	Link
GRI 103: Management approach 2016	
103-1 Explanation of the material topic and its boundary	Voluntary Commitments
103-2 The management approach and its components	Voluntary Commitments
103-3 Evaluation of the management approach	Voluntary Commitments
GRI 408: Child Labor 2016	
408-1 Operations and suppliers at significant risk for incidents of child labor	We do not discuss this topic with our sites in further detail, because our hiring process and the conditions specified in our groupwide Code of Teamwork & Leadership ensure that no child labor takes place.

Topic: Forced or Compulsory Labor

Disclosures	Link
GRI 103: Management approach 2016	
103-1 Explanation of the material topic and its boundary	Voluntary Commitments
103-2 The management approach and its components	Voluntary Commitments
103-3 Evaluation of the management approach	Voluntary Commitments
GRI 409: Forced or Compulsory Labor 2016	
409-1 Operations and suppliers at significant risk for incidents of forced or compulsory labor	We do not discuss this topic with our sites in further detail, because our hiring process and the conditions specified in our groupwide Code of Teamwork & Leadership ensure that no forced labor takes place.

Topic: Human Rights Assessment

Disclosures	Link
GRI 103: Management approach 2016	
103-1 Explanation of the material topic and its boundary	Voluntary Commitments Management Structures Risk and Compliance Management
103-2 The management approach and its components	Voluntary Commitments Management Structures Risk and Compliance Management
103-3 Evaluation of the management approach	Voluntary Commitments Management Structures Risk and Compliance Management
GRI 412: Human Rights Assessment 2016	
412-1 Operations that have been subject to human rights reviews or impact assessments	Voluntary Commitments Management Structures Risk and Compliance Management
412-2 Employee training on human rights policies or procedures	Risk and Compliance Management

Topic: Local Communities

Disclosures	Link
GRI 103: Management approach 2016	
103-1 Explanation of the material topic and its boundary	Noise Air Logistics and Transport Neighbors
103-2 The management approach and its components	Noise Air Logistics and Transport Neighbors
103-3 Evaluation of the management approach	Noise Air Logistics and Transport Neighbors
GRI 413: Local Communities 2016	
413-1 Operations with local community engagement, impact assessments, and development programs	Noise Air Logistics and Transport Neighbors

Topic: Supplier Social Assessment

Disclosures	Link
GRI 103: Management approach 2016	
103-1 Explanation of the material topic and its boundary	Sustainability Along the Supply Chain Processes and Tools TfS Supplier Evaluation
103-2 The management approach and its components	Goals & Outlook – Supply chain Sustainability Along the Supply Chain Processes and Tools TfS Supplier Evaluation
103-3 Evaluation of the management approach	Sustainability Along the Supply Chain Processes and Tools TfS Supplier Evaluation
GRI 414: Supplier Social Assessment 2016	
414-2 Negative social impacts in the supply chain and actions taken	Processes and Tools TfS Supplier Evaluation Results Conflict Minerals

Topic: Public Policy

Disclosures	Link
GRI 103: Management approach 2016	
103-1 Explanation of the material topic and its boundary	Politics and NGOs
103-2 The management approach and its components	Politics and NGOs
103-3 Evaluation of the management approach	Politics and NGOs

GRI 415: Public Policy 2016

415-1 Political contributions	Donations and Sponsorships
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Topic: Customer Health and Safety

Disclosures	Link
GRI 103: Management approach 2016	
103-1 Explanation of the material topic and its boundary	Products Product Safety
103-2 The management approach and its components	Products Product Safety
103-3 Evaluation of the management approach	Products Product Safety

GRI 416: Customer Health and Safety 2016

416-1 Assessment of the health and safety impacts of product and service categories	Product Safety
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Topic: Marketing and Labeling

Disclosures	Link
GRI 103: Management approach 2016	
103-1 Explanation of the material topic and its boundary	Product Safety
103-2 The management approach and its components	Product Safety
103-3 Evaluation of the management approach	Product Safety
GRI 417: Marketing and Labeling 2016	
417-1 Requirements for product and service information and labeling	Product Safety

Topic: Customer Privacy

Disclosures	Link
GRI 103: Management approach 2016	
103-1 Explanation of the material topic and its boundary	Data Protection
103-2 The management approach and its components	Data Protection
103-3 Evaluation of the management approach	Data Protection
GRI 418: Customer Privacy 2016	
418-1 Substantiated complaints concerning breaches of customer privacy and losses of customer data	Data Protection

Topic: Socioeconomic Compliance

Disclosures	Link
GRI 103: Management approach 2016	
103-1 Explanation of the material topic and its boundary	Risk and Compliance Management
103-2 The management approach and its components	Risk and Compliance Management
103-3 Evaluation of the management approach	Risk and Compliance Management
GRI 419: Socioeconomic Compliance 2016	
419-1 Non-compliance with laws and regulations in the social and economic area	Risk and Compliance Management

Glossary

Adsorbable Organic Halogen Compounds (AOx)

AOx is a parameter used in chemical analytics to assess water and involves calculating the total organic halogens adsorbable on activated carbon. Halogens include compounds of chlorine, bromine and iodine.

Alkylphenol Ethoxylates (APEOs)

The primary biodegradability of nonionic alkylphenol ethoxylate (APEO) surfactants meets the demands imposed by environmental protection agencies. However, the intermediate products formed during biodegradation are relatively persistent and much more toxic to fish than are the surfactants themselves.

Biodiversity

In 1992, the United Nations Conference on Environment and Development passed the Convention on Biological Diversity (CBD). This convention addresses the preservation of biological diversity (genes, species and habitats), the sustainable exploitation of such diversity, as well as access rules to, and the sharing of benefits from, genetic resources (access and benefit sharing). So far, the CBD has been signed by 168 countries and the EU (with Germany becoming a signatory in 1993). In May 2011, the EU Commission published a biodiversity strategy to 2020.

Biomethanol

Biomethanol is produced from biological rather than from conventional fossil sources. The raw material used in the production of biomethanol is derived from second-generation sources. The term second-generation sources means that the material does not compete with foodstuffs or animal feed and that only waste streams are used. The biomethanol which WACKER uses is solely

of plant origin. Residues of non-animal origin are used. Any sources based on wood are in line with FSC (Forest Stewardship Council) specifications.

Additional information can be found under

<https://www.youtube.com/watch?v=Vvx9RoOXSA>

<https://www.youtube.com/watch?v=R7HPORitT4g>

Biotechnology

Biotech processes use living cells or enzymes to transform or produce substances. Depending on the application, a distinction is made between red, green and white biotechnology. Red biotechnology: medical and pharmaceutical applications. Green biotechnology: agricultural applications. White biotechnology: biotech-based products and industrial processes, e.g. in the chemical, textile and food sectors.

Carbon Dioxide

Chemical name: CO₂ This gas naturally constitutes 0.04% of air. Carbon dioxide is generated during the combustion of coal, natural gas and other organic substances. As a greenhouse gas in the atmosphere, it contributes to global warming. Since the start of industrialization in 1850, its concentration in air has risen from approx. 300 to 390 ppm (parts per million). This value is increasing by around 2 ppm every year. Other greenhouse gases are represented as CO₂ equivalents (CO₂e) based on their greenhouse effect.

Chemical Oxygen Demand (COD)

COD is a measure of wastewater contamination. This parameter defines the amount of oxygen necessary to fully oxidize all organic material in wastewater.

Chlorinated Hydrocarbons (CHCs)

Organic compounds containing chlorine. They are used, for example, in the manufacture of plastics and solvents. CHCs are chemically stable and fat-soluble; some of them are environmental toxins.

Chlorosilanes

Compounds of silicon, chlorine and, in some cases, hydrogen. The semiconductor industry mainly uses trichlorosilane to make polysilicon and for the epitaxial deposition of silicon.

Combined Heat and Power Plant

Combined heat and power (CHP) plants generate both electricity and useful heat. This system can be much more efficient at using the input energy (e.g. fuel oil or natural gas) than are conventional systems with separate facilities. Because primary energy is conserved, CHP plants emit significantly less carbon dioxide than conventional power plants.

Cyclodextrins

Cyclodextrins belong to the family of cyclic oligosaccharides (i.e. ring-shaped sugar molecules). They are able to encapsulate foreign substances such as fragrances and to release active ingredients at a controlled rate. WACKER BIOSOLUTIONS produces and markets cyclodextrins.

Cysteine

Cysteine is a sulfur-containing amino acid. It belongs to the non-essential amino acids, as it can be formed in the body. It is used, for example, as an additive in foods and cough mixtures. Cysteine and its derivatives are a business field at WACKER BIOSOLUTIONS.

Dispersible Polymer Powders

Created by drying dispersions in spray or disc dryers. VINNAPAS® polymer powders from WACKER are recommended as binders in the construction industry, e.g. for tile adhesives, self-leveling compounds and repair mortars. The powders improve adhesion, cohesion, flexibility and flexural strength, as well as water-retention and processing properties.

Dispersions

Binary system in which a solid component is finely dispersed in another. VINNAPAS® dispersions from WACKER are vinyl-acetate-based copolymers and terpolymers in liquid form. They are mainly used as binders in the construction industry, e.g. for grouts, plasters and primers.

Elastomers

Polymers that exhibit almost perfectly elastic behavior, i.e. they deform when acted upon by an external force and return to their exact original shape when the force is removed. While the duration of the force has no effect on perfectly elastic behavior, the temperature does.

Emission

Substance outputs, noise, vibrations, light, heat or radiation emitted into the environment by an industrial plant.

Ethylene

A colorless, slightly sweet-smelling gas that, under normal conditions, is lighter than air. It is needed as a chemical starting product for a great many synthetic materials, including polyethylene and polystyrene. It is used to make products for the household, agricultural, automotive and construction sectors, among others.

Exterior Insulation and Finish Systems (EIFS) / External Thermal Insulation Composite Systems (ETICS)

Systems for thermally insulating buildings and thus for increasing energy efficiency. These systems have a multilayer structure: adhesive mortar, thermal insulating panels, embedding mortar, glass fiber mesh and finishing coat. VIN-NAPAS® polymer powders from WACKER POLYMERS ensure that the insulation material bonds firmly to the mortar and finish coat. As a result, the insulating system offers greater durability and much more resistance to weathering and wear.

Fermentation

In biotechnology, fermentation means the conversion of biological materials by means of bacterial, fungal and cell cultures, or by the addition of enzymes. For example, products such as insulin, many different antibiotics and amino acids (e.g. cysteine) can be synthesized on an industrial scale in bioreactors using microorganisms.

Global Product Strategy (GPS)

The Global Product Strategy (GPS) – an initiative developed by the International Council of Chemical Associations – contains rules for the assessment of the properties of chemicals and on how to provide information on their safe use.

Greenhouse Gas (GHG) Protocol

The GHG Protocol is an internationally recognized instrument for quantifying and controlling greenhouse gas emissions. The standards outlined in the GHG Protocol have been jointly developed by the World Business Council for Sustainable Development (WBCSD) and the World Resources Institute (WRI) since 1998. The GHG Protocol specifies how an organization should calculate its greenhouse gas emissions and how emission-reducing programs should be conducted.

Hexachlorobutadiene (HCBD)

A chlorinated organic compound which, at room temperature, is a colorless liquid with a mild odor. It occurs as a by-product in certain chemical production and combustion processes, such as the synthesis of tetrachloroethene, trichloroethene or carbon tetrachloride. The EU's water framework directive classifies HCBD as hazardous. The results of the European Emission Inventory show that most of the reported emissions originate from bulk production of basic organic chemicals.

Hydrogen Chloride (chemical name: HCl)

The chemical industry uses hydrogen chloride to generate valuable intermediates from organic and inorganic raw materials. The colorless gas dissolves in water to form hydrochloric acid.

Immission

Substance inputs, noise, vibrations, light, heat or radiation that affect humans, animals, plants, soil, water, air, and cultural and other material assets.

IPCC Fourth Assessment Report

In 1990, the United Nations Intergovernmental Panel on Climate Change (IPCC) started issuing reports that summarized scientific knowledge on global warming. The 2007 Fourth Assessment Report (AR4) is the most recent in the series. Published every five to six years, these IPCC reports provide information about the human impact on climate.

Net Production Output

Net production output is calculated by subtracting the internal reuse of products from the gross production of a plant or site. Gross production output corresponds to the total production – target products and byproducts – of a plant or site.

Polymer

A polymer is a large molecule made up of smaller molecular units (monomers). It contains between 10,000 and 100,000 monomers. Polymers can be long or ball-shaped.

Polymer Blends

The result of mixing different polymers is known as a polymer blend (polymer alloy). If these polymer blends are composed of biopolymers (biodegradable and/or renewable raw materials), the VINNEX[®] binder system may enhance compatibility and hence their properties.

Polysilicon

Hyperpure polycrystalline silicon from WACKER POLYSILICON is used for manufacturing wafers for the electronics and solar industries. To produce it, metallurgical-grade silicon is converted into liquid trichlorosilane, highly distilled and deposited in hyperpure form at 1,000 °C.

Primary Energy

Primary energy is obtained from naturally occurring sources such as coal, gas, oil or wind. Secondary energy, in contrast, is derived from primary energy via a transformation process (which often involves energy losses); examples include electricity, heat and hydrogen.

Semiconductor

A substance whose electrical conductivity is much lower than that of metals, but increases dramatically as the temperature rises. Semiconductors can be modified for a particular purpose by doping them with foreign atoms.

Silanes

Silanes are used as monomers for the synthesis of siloxanes or sold directly as reagents or raw materials. Typical applications include surface treatment, agents (medically active substances) in pharmaceutical synthesis, and coupling agents for coatings.

Silica

Collective term for compounds with the general formula $\text{SiO}_2 \cdot n\text{H}_2\text{O}$. Synthetic silicas are obtained from sand. Based on their method of production, a distinction is made between precipitated silicas and pyrogenic silicas (such as HDK[®]).

Silica, Pyrogenic

White, synthetic, amorphous silicon dioxide (SiO_2) in powder form, made by flame hydrolysis of silicon compounds. Variously used as an additive for silicone rubber grades, sealants, surface coatings, pharmaceuticals and cosmetics.

Silicon

After oxygen, silicon is the most common element in the earth's crust. In nature, it occurs without exception in the form of compounds, chiefly silicon dioxide and silicates. Silicon is obtained through energy-intensive reaction of quartz sand with carbon and is the most important raw material in the electronics industry.

Silicones

General term used to describe compounds of organic molecules and silicon. According to their areas of application, silicones can be classified as fluids, resins or rubber grades. Silicones are characterized by a myriad of outstanding properties. Typical areas of application include construction, the electrical and electronics industries, shipping and transportation, textiles and paper coatings.

Silicon Wafer

A silicon wafer is a disc with a thickness of between approximately 200 and 800 µm, and is used by the semiconductor industry for the manufacture of semiconductor devices, i.e. integrated circuits and discrete components.

Siloxanes

Systematic name given to compounds comprising silicon atoms linked together via oxygen atoms and with the remaining valences occupied by hydrogen or organic groups. Siloxanes are the building blocks for the polymers (polysiloxane and polyorganosiloxane) that form silicones.

VINNAPAS®

VINNAPAS® is WACKER's brand name for dispersions, dispersible polymer powders, solid resins and their associated product solutions. VINNAPAS® dispersions and polymer powders are primarily used in the construction industry as polymeric binders, e.g. in tile adhesives, exterior insulation and finish systems

(EIFS) / external thermal insulation composite systems (ETICS), self-leveling compounds, and plasters.

Volatile Organic Compounds (VOCs)

Volatile organic compounds (VOCs) are gaseous and vaporous substances of organic origin that are present in the air. They include hydrocarbons, alcohols, aldehydes and organic acids. Solvents, liquid fuels and synthetic substances can be VOCs, as can organic compounds originating from biological processes. High VOC concentrations can be irritating to the eyes, nose and throat and may cause headaches, dizziness and tiredness.

Wacker Operating System (WOS)

The Wacker Operating System (WOS) program bundles, promotes and processes corporate projects for systematic process improvement. It is the basis for a groupwide improvement initiative by WACKER.

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This report has been created from online content
that offers additional interactive features.

www.wacker.com/sustainabilityreport

This Report was published in July 2019. It is available in English and German. This Report contains forward-looking statements based on assumptions and estimates of WACKER's Executive Board. Although we assume the expectations in these forward-looking statements are realistic, we cannot guarantee they will prove to be correct. The assumptions may harbor risks and uncertainties that may cause the actual figures to differ considerably from the forward-looking statements. Factors that may cause such discrepancies include, among other things, changes in the economic and business environment, variations in exchange and interest rates, the introduction of competing products, lack of acceptance for new products or services, and changes in corporate strategy. WACKER does not plan to update the forward-looking statements, nor does it assume the obligation to do so.

The contents of this report apply to men and women alike even if gender-specific words ("he" or "she") are used for simplification.

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