

WACKER



2013/2014

Wacker Chemie AG
Sustainability Report

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This report was created from the content of an online-version, which offers additional, interactive features.
www.wacker.com/sustainabilityreport

About this Report

Wacker Chemie AG's sustainability report explains how the Group balances economic aspects with environmental and social responsibility. In 1989, WACKER was among the first companies to report on its environmental performance. We were also among the first to enhance our environmental reports with social and health information, creating our first sustainability report in 2002.

The present report, which builds on WACKER's 2011/2012 sustainability report, is available in English and German. The facts and figures given in this report refer to fiscal years 2013 and 2014. 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 information on our Group structure and financial position was taken from WACKER's 2013 and 2014 annual reports. To be as up to date as possible, we have a section in our Goals chapter to cover future topics from 2015 onward (editorial deadline: June 30, 2015).

This report offers an honest and comprehensive account of sustainability at WACKER not only for our customers, business partners, suppliers and shareholders, but also for analysts, non-governmental organizations, the authorities, our sites' neighbors and our employees. We established the main contents through ongoing dialogue with our stakeholders and a survey carried out in 2014. This international stakeholder survey asked 224 respondents what sustainability topics are most relevant and how well Wacker Chemie AG handles them.

Our reporting is based on criteria recommended by future and IÖW (the German institute of ecological economic research) as well as the international Global Reporting Initiative (GRI) G3 guidelines. We evaluated and assigned the degree of compliance with the GRI indicators ourselves (Application Level A). This assessment has been reviewed and verified by the GRI.

Our website provides further information on the topics discussed in this report. Information on WACKER's sustainability efforts is also available at www.wacker.com/sustainability.

Our next sustainability report is scheduled for 2017.



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A network of pipes connects the various production facilities at the Burghausen site – the WACKER Group's largest plant. Supplying the individual facilities with raw and auxiliary materials, this network conveys the finished products to their respective destinations.





Indicators

Sustainability Indicators

	2014	2013	2012
Environmental Protection			
Operating costs (€ million)	88.2	89.4	79.3
Investments (€ million)	5.1	5.4	8.6
Emissions			
CO ₂ carbon dioxide (kt) ¹	1,251	1,253	1,311
NO _x nitrogen oxides (t) ²	1,960	2,010	2,225
NM VOC non-methane volatile organic compounds (t) ³	830	750	720
COD chemical oxygen demand (t)	1,230	1,320	1,460
Waste (total) (t)	158,200	142,060	136,800
Water consumption (1,000 m ³)	241,973	220,908	242,072
Energy			
Electricity consumption (GWh)	4,927	4,526	4,559
Primary energy use (total) (GWh)	6,081	6,176	7,030
Occupational Safety			
Accident rate: accidents per 1 million hours worked	2.8	3.8	4.7
Employees			
Female employees, groupwide (%)	22.7	22.4	22.1
Women in third-level management, groupwide (%)	23.9	23.0	22.0
Women as executive personnel, groupwide (%)	5.6	6.6	7.3
Non-German employees, Germany (%)	11.8	11.5	11.8
Fluktuationsquote Konzern (%)	4.1	3.4	7.9
Society			
Donations (€ thousand)	851	925	891
Sponsorships (€ thousand)	3,339	964	1,135

¹ CO 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. In accordance with the recommendations of the GHG Protocol, Wacker Chemie AG's direct and indirect emissions were recalculated retroactively due to amendments to the system boundaries, starting from the reference year (2012) for the CO₂ target. In addition to the Group's direct CO₂ emissions, sites' intra-plant traffic emissions were also taken into account for sustainability reporting.

² Corrected NO_x emissions for 2013 for the Holla site, since exact figures did not become available until later.

³ The method for calculating the total volume of non-methane volatile organic compounds (NMVOCs) emitted by our production facilities was amended in 2014. We harmonized the data analysis, took additional substances into account and adjusted the prior-year figures on the basis of the new methodology. The rise from 2013 to 2014 was due to production increases.

WACKER at a Glance

€ million	2014	2013	2012*
Results / Return			
Sales	4,826.4	4,478.9	4,634.9
EBITDA ¹	1,042.3	678.7	795.4
EBITDA margin ² (%)	21.6	15.2	17.2
EBIT ³	443.3	114.3	266.6
EBIT margin ² (%)	9.2	2.6	5.8
Financial result	-78.1	-83.3	-62.7
Income before taxes	365.2	31.0	203.9
Net income for the year	195.4	6.3	114.7
Earnings per share (€)	4.10	0.05	2.43
ROCE (%)	8.4	2.2	5.2
Financial Position / Cash Flows			
Total assets	6,947.2	6,332.4	6,492.8
Equity	1,946.5	2,197.1	2,121.3
Equity ratio (%)	28.0	34.7	32.7
Financial liabilities	1,601.5	1,416.7	1,197.2
Net financial debt ⁴	1,080.6	792.2	700.5
Capital expenditures (including financial assets)	572.2	503.7	1,095.4
Depreciation (including financial assets)	599.0	564.4	528.8
Net cash flow ⁵	215.7	109.7	-536.2
Research and Development			
Research and development expenses	183.1	173.8	173.7
Employees			
Personnel expenses	1,246.9	1,133.0	1,196.8
Employees (December 31, number)	16,703	16,009	16,292

¹ EBITDA is EBIT before depreciation and amortization.

² Margins are calculated based on sales.

³ EBIT is the result from continuing operations for the period before interest and other financial results, and income taxes.

⁴ Sum of cash and cash equivalents, noncurrent and current securities, and noncurrent and current financial liabilities.

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.

* Adjusted based on the effects of the adoption of IAS 19 (revised)

Introduction by the President & CEO

Dear Reader,

At WACKER, entrepreneurial success is not based solely on key financial indicators. It also depends on the answer to the question: How sustainably are we performing? Accordingly, sustainable management is one of our five strategic goals. In everything we do, we consider the future. We aim to bring economic, ecological and social factors into equilibrium.

Sustainability has long been central to WACKER's business model, especially with regard to generating, storing and transporting environmentally friendly energy. Ultrapure polysilicon for the solar industry is an important product in our portfolio. We are convinced that solar power has a great future because it is:

- One of the most cost-efficient and environmentally friendly energy sources on earth
- An unlimited resource
- An important energy source for more and more countries across the globe, with the market growing by 22 percent in 2013 and 13 percent in 2014.

WACKER not only offers solutions for generating and storing energy. It also consumes a great deal of energy. Consequently, energy efficiency is a decisive factor in advancing our competitiveness. We are constantly on the lookout for ways of making more efficient use of raw materials and reducing our energy consumption. Our integrated production system gives us a tremendous advantage, with its closed material and energy loops. We take the by-products of one production step and use them as the starting material for other chemical processes. The same applies to waste heat, which we take from one process and use for later production steps. One example of our energy-efficient production is that we reduced our specific energy consumption in our polysilicon production by a third between 2005 and 2013, despite increased volumes. The Bavarian government honored us with its 2014 Energy Award in recognition of this achievement.

The key engine of WACKER's success is its workforce. To sustain our success in the future, we are committed as a company to maintaining our employees' performance and to remaining an attractive employer. To this end, we established a new, globally valid talent-management process in 2013. It enables us to identify our employees' competencies early on and develop their potential, so that WACKER can fill important positions with highly-qualified in-house candidates in the medium and long term.





We are also adopting future-oriented working-time models. Employees now 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. As a result, employees can better harmonize their private plans with their careers. WACKER, in turn, can retain dedicated employees.

Internationalization is an additional WACKER success factor. Our company is active across the globe, with people from over 60 nations working for WACKER. We are increasingly taking account of this in managerial appointments. Our policy in recent years has been to fill regional leadership positions with local applicants. And we want to continue promoting this diversity. Similarly, we intend to increase the number of women in technical and leadership positions.

WACKER achieved a turnaround as regards workplace safety, cutting the number of occupational accidents per million hours worked by more than 40 percent across the Group within two years. Our safety program, WACKER Safety Plus, was bearing fruit. We do not intend to stop here. For us, success is an incentive to become even better.

The same applies to our supply chain. This year we joined the “Together for Sustainability” (TfS), whose goal is for its member chemical companies to exercise global responsibility when purchasing goods and services and to improve the ecological and social standards of their suppliers.

Following a challenging 2013, we surpassed our goals in 2014 and achieved good annual figures. We are particularly proud of this result, as it was in our centennial year. The virtues that enabled WACKER to succeed during its first 100 years are entrepreneurial spirit and the courage to reinvent itself. And we intend to remain committed to these values in promoting sustainable business practices in the years ahead.

Munich, Germany – July 2015

Dr. Rudolf Staudigl,
President & CEO of Wacker Chemie AG

iC⁴ – Electricity on Tap

Over the past three years, WACKER has been working on a major project in partnership with other renowned companies and research institutes: storing energy generated by renewable sources. The researchers want to convert surplus green electricity into methane gas. This would allow the energy to be stored easily in the natural-gas grid or in gas caverns. The greenhouse gas carbon dioxide acts as an aid.

Storing Energy Generated by Wind, Sun or Biomass

December 2014 was a stormy month, so German wind turbines generated more electricity than ever before. 14 powerful low-pressure areas – from Alexandra to Zoe – and numerous new offshore wind farms ensured that 8.9 billion kilowatt hours were fed into the German power grid. As a result, wind energy even outperformed nuclear power.

But what happens when the sun isn't shining and the wind doesn't blow? Fluctuating green electricity yields are one of the energy transition's unsolved problems. Experts are desperately searching for a solution that will allow energy generated by wind, the sun or biomass to be stored. Just like a squirrel stocks up on winter supplies, it should be possible to store solar energy for when the days are short. After all, we want electricity to be available from our sockets at all times, wherever we are – regardless of whether the sun is shining or not.

says modestly. Over recent years, the young chemist has enthusiastically supported the iC⁴ project at WACKER, in which science and industry are joining forces to research the conversion of green electricity into synthetic natural gas (see box). "Storing energy is obviously a major problem," says Zipp, his expression serious behind his protective glasses. "This makes it even more exciting to be involved in finding a solution."



In the Consortium's catalyst laboratory (from left): Dr. Christian Anger, Dr. Alexander Zipp, Dr. Arndt Schlosser and Dr. Jürgen Stohrer

What happens when the sun isn't shining and the wind doesn't blow?

CATALYSTS

Catalysts make chemical reactions possible and accelerate them. For the methanation process, the catalyst support made of HDK® pyrogenic silica is impregnated with metal particles and then ensures that carbon dioxide and hydrogen combine to form methane gas as efficiently as possible. The catalyst must be stable and resistant to impurities and heat.



Since the chemical reaction only takes place at the catalytically active surface of the catalyst, the catalyst also needs to have as large a surface area as possible. During his research work at WACKER, Dr. Alexander Zipp has calculated that the surface area of one kilogram of the carrier is almost as large as 30 soccer fields.

The surface area of one kilogram of the carrier is almost as large as 30 soccer fields.



Opportunities for the Chemical Storage of Energy

How can surplus energy generated by wind and the sun be stored long-term? There are various different approaches. “But only the existing gas grid and gas reservoirs really make sense for seasonally storing large amounts of energy,” says chemistry professor Bernhard Rieger of the Technical University of Munich (TUM). In his opinion, batteries can, at best, store large quantities of electricity short-term, while new pumped storage power plants are unpopular with the general public, and building huge new hydrogen tanks would entail enormous effort and expense.

That’s why the iC⁴ project partners have opted for chemical storage. Here, the first step involves water being separated into its components oxygen and hydrogen with the aid of surplus green electricity. Electrolysis plants for this are

already available on an industrial scale. The hydrogen is then converted into methane with the aid of carbon dioxide, obtained, for example, from coal-fired power stations, cement factories or biogas plants. This step is important, because, unlike hydrogen, methane can easily be stored in large volumes. It is the main constituent (over 80 percent) of natural gas and can thus be fed into the gas grid or one of the many underground gas reservoirs.

The chemistry underlying this power-to-gas technology has long been established. However, carbon dioxide reacts so slowly that, for a long time, nobody seriously considered commercializing methanation. The process was not economically feasible. The researchers of the iC⁴ group are now putting their hearts and souls into optimizing key components for the process in order to make methanation more cost-effective.

How can surplus energy generated by wind and the sun be stored long-term?

“There are various different approaches. But only the existing gas grid and gas reservoirs really make sense for seasonally storing large amounts of energy.”

Professor Bernhard Rieger
Head of the WACKER Chair of Macromolecular Chemistry and
Director of the Institute of Silicon Chemistry



Dr. Christian Anger is one of the young WACKER employees involved in the global competition for energy storage systems of the future. The 30-year old works in a modern building on the grounds of WACKER's central R&D facility – the Consortium – in Munich's Obersending area. Here, over 160 employees are working on megatrends, such as battery components, better processes for photovoltaic materials, and higher-performance materials for wind power. And materials for energy-storage systems.

“Our goal was to develop a membrane that separates gases better than any other membrane process.”



Dr. Christian Anger
Chemist at WACKER's
central research division.

As part of the iC⁴ project, Anger and his team have developed a membrane for separating carbon dioxide from waste gas. This will allow the greenhouse gas CO₂, which is generated in power plants, cement factories and biogas plants, to be recycled. “Our goal was to develop a membrane that separates gases better than any other membrane process,” says Anger. The membrane is still being put through its paces by cooperation partner Linde. “We already know that our silicone materials are quite well suited to the support structure of the membrane,” says research group head Dr. Jürgen Stohrer.

“However, it is not yet clear if and where they will be used to develop products.”

Catalysts Are at the Heart of the Process

A few doors down, Zipp is shaking a screw-top jar full of hollow ceramic cylinders, irradiated by sunlight passing through his lab's long window front. “This could be the key to economical methane production,” says the 39-year-old. The small, white, hollow cylinders made of HDK® pyrogenic silica constitute the support from which catalysts for the conversion of hydrogen and carbon dioxide into methane are made.

These small catalysts must be able to do a lot: they have to convert the starting materials into methane as completely as possible. Furthermore, they must be able to withstand moisture, temperature fluctuations, and any impurities in the carbon dioxide. “CO₂ from power plants is not pure, but contains substances that can affect the catalyst,” explains Stohrer. Moreover, the catalysts must work well for years. “After all, a catalyst charge for a production reactor costs several million euros,” explains Zipp.

Even though Zipp and his team are only looking after one aspect of the iC⁴ project, it is an important part. “Tailor-made catalysts and catalyst supports are at the heart of the process,” says Stohrer, who is coordinating iC⁴ work at WACKER with key project partners. The company can offer decades of knowledge here, as the chemical group has been manufacturing pyrogenic silica since 1969.

Is it possible that the success of the transition toward renewable energy sources actually depends on these inconspicuous catalyst supports?



Prof. Rieger believes this to be a likely possibility. “WACKER has developed completely new support systems for the catalysts,” says the renowned scientist, who heads the iC⁴ project. “This has allowed us to make considerable progress with this type of electricity storage.” The chemist sees iC⁴ as one of his most successful projects: “Here, the right people are at the right place at the right time.”

1
“This could be the key to economical methane production,” says Dr. Alexander Zipp.

2
Catalysts convert hydrogen and carbon dioxide into methane. During this process, they must be able to withstand moisture, temperature fluctuations, and any impurities in the carbon dioxide.



That's music to Dr. Arndt Schlosser's ears. He is responsible for innovation management at WACKER and establishes research partnerships with top-class scientists around the world. To him, the iC⁴ project fits in very well with corporate strategy, since energy is a key growth market for WACKER. "Avoiding CO₂ emissions and storing electricity are strategic, future-oriented topics," he explains. "Over the coming years, nobody will exactly be doing major business in this field," says Schlosser. "But anyone who wants to be involved in these topics in the future must get on board early."

"Avoiding CO₂ emissions and storing electricity are strategic, future-oriented topics."



Dr. Arndt Schlosser
Head of R&D processes

"Because we really believe in what we are doing here."

iC⁴ is one of the long-term topics in WACKER's innovation portfolio. "Here, we are free to look at more than just the next set of quarterly figures," says research manager Schlosser. The prudent chemist believes that this is an important prerequisite for sustainable business practices, as such projects do not just benefit the environment. "When we look for long-term business models that will allow us to continue earning money and providing jobs for our employees in the future, we are acting in a totally sustainable manner," says Schlosser, adding with a smile: "This is, after all, how WACKER has managed to succeed for 100 years."

His colleague Stohrer is not normally inclined to be emotional about these things. He is a scientist, after all. Nevertheless, his expression reveals that he is impressed with the WACKER researchers' commitment over recent years.

"Our young project managers and their teams have really gotten involved – it's a highly emotional affair," he says. "Because we really believe in what we are doing here."

Stohrer shares the feeling that iC⁴ is a special project. "Something has to be done about climate protection, we all know that," he says emphatically. He believes that the work on chemical storage has paid off: "We now know how it works and that it works." However, according to Stohrer, when and if this will be commercialized depends on politics and energy prices. TUM professor Rieger definitely sees potential. He says: "Pilot plants could be up and running by 2020. And the technology must be well-established by 2030."

iC⁴

By 2050, the plan is for 80 percent of electricity in Germany to be supplied by renewable energy sources. This is the German federal government's target. That's why the Federal Ministry of Education and Research (BMBWF) has, over recent years, supported many research projects aimed at advancing the energy transition. One of the flagship projects is iC⁴, sponsored with €6.3 million from 2012 to 2015: surplus green electricity is to be converted into methane gas with the aid of carbon dioxide and stored in the gas grid.

TARGET FOR 2050

80% of electricity from renewable energies

iC⁴ stands for integrated carbon capture, conversion and cycling. Alongside eight institutes at the Technical University of Munich and the Fraunhofer Institute for Interfacial Engineering and Biotechnology, chemical companies WACKER and Clariant, as well as E.ON, Siemens, Linde and the reactor specialists at MAN's DWE site in Deggendorf, are on board. WACKER is heading two of the four subprojects.



Further Information:
ic4.tum.de

Fit for Your Shift

In the summer of 2013, WACKER began working with the German statutory pension insurance system on a pilot project that would give a fresh new face to health care for shift workers.

Even though shift workers at WACKER are actually used to strenuous physical work, most of them still break into quite a sweat during Nordic walking sessions at Lake Starnberg (south of Munich). The activity scheduled for the first day of Fit for Your Shift is no casual stroll – all ten participants instead march briskly down a small country lane. Even experienced speed walkers like Günther Zechmeister are enthusiastic: “The day outdoors was really interesting,” says the machine operator afterwards. “I learned some new power-walking steps. I hadn’t necessarily expected that.”

Fit for Your Shift is a preventive health-care project for WACKER shift workers. Nine times each year, up to 15 employees have an opportunity to join the program, which consists of a total of four phases. Phase 1 – the clinic-based phase – is held at a clinic on Lake Starnberg and lasts five days. Here participants first undergo a general physical, after which they attend seminars and training sessions to acquire simple, practical tools for maintaining and improving their health.



Nine times each year, up to 15 employees have an opportunity to join the program.



1 An introduction to the muscles and skeleton of the human body helps participants learn how to lift items properly.

2 Even experienced walkers like Günther Zechmeister learn new techniques at the "Fit for Your Shift" seminar.

Back-Friendly Lifting

For Annett Pleil, for instance, the back-health training on the second and third days was particularly important. “I work in Polysilicon Cleaning,” she explained, “and part of my job involves lifting ten-kilogram bags into a cardboard box. Over the long run, this begins to affect my neck and back.” The 45-year-old is hoping that the session in Höhenried Clinic will provide her with tips on how to strengthen her muscles and how to lift items without straining her back.



“Keep the soles of your feet on the ground, keep your back straight, tip your pelvis and keep the load centered.”

The facilitator explains the best way to lift the crates.

Back-health training begins with a walking exercise where everyone carries around a gray plastic crate with sandbags in it. The facilitator explains the best way to lift the crates: “Keep the soles of your feet on the ground, keep your back straight, tip your pelvis and keep the load centered.” It helps to picture the pelvis as a bowl of water – the water should spill out of the bowl when you lift. When walking, on the other hand, participants should imagine that they had just won a gold medal, striding through the gymnasium with their chests swelled with pride.

Pleil feels that handy little tips like these are easy to implement on the job. Even more important for her, however, is that her time spent at Lake Starnberg is just the beginning.

The clinic-based phase, after all, is followed by the practical phase: for 12 weeks, participants meet with a trainer from the sv Wacker sports association to undergo regular strength and endurance training for their backs. They also practice relaxation techniques and learn about proper nutrition. After these 12 weeks, participants move on to Phase 3, where they participate in a self-directed course of their own choosing. “sv Wacker fortunately has a lot of good options,” says Pleil, who already knows what she wants to focus on during the self-guided phase: “I want to do Tae Bo, a form of kick-boxing from Thailand,” she says. “And do back workouts of course.”



“Two-thirds of them make long-term lifestyle changes.”

Dr. Ursula Bailer discusses the results of Bernhard Rothenaicher’s new lifestyle with him. The machine operator lost a considerable amount of weight and his blood pressure decreased.

Long-Term Improvements

Over 200 alternating-shift workers from Burghausen have taken part in Fit for Your Shift since the program began in the summer of 2013. “We don’t know exactly why, but nearly everyone who participates is much more relaxed at work afterwards,” says Dr. Ursula Bailer, one of WACKER’s company physicians. “Losing weight and quitting smoking aren’t goals of the program – but a lot of participants do just that. Two-thirds of them make long-term lifestyle changes, exercising more, eating more healthily and coping with stress better.”

Bernhard Rothenaicher is a machine operator who was among the first to participate in Fit for Your Shift. At first, he laughed at the recommendation to pay attention to the ingredients in food. “Now I take a good look at what’s in it,” he says. “That advice in particular has really paid off for me.” Rothenaicher, who is 1.79 meters tall and weighed 104 kilograms when the program began, set himself a weight target of 95 kilos. But after one year, when he finished a two-day, Phase 4 refresher course in Höhenried Clinic, his weight was down to just 92 kilos – and his blood pressure had dropped considerably.

His recipe for success? After Phase 1, Rothenaicher started out by finally using his cross-trainer, which had sat unused at his home for some time. He followed this with strength training and jogging. Four months after the program started in Höhenried, the 50-year-old overhauled his diet. “I cut out the two bologna sandwiches I used to eat on the early shift,” he recalls, “and now I take a salad or fruit with low-fat yogurt with me to work. I avoid soft drinks now, and I’ve gone over to alcohol-free beer.”

For Rothenaicher, shedding pounds was not the only outcome – a family effect came into play as well, something Dr. Bailer has seen many times: “Spouses join in too – and everyone’s happy.” In Rothenaicher’s case, the entire family got involved. “My wife, both of my grown-up children and I lost a total of 50 kilos,” he notes with visible pride. And last year, he completed a half-marathon for the first time in his life – for now without his wife and children.

Pizza Versus Spaghetti

Back to Höhenried: the third day involves water aerobics and back-health training, followed by a nutrition seminar. Nutrition scientist Kathrin Karau sets a table with pizza, French fries and fried “currywurst” sausage – life-sized photos of the dishes, at any rate. “Yum,” someone says and turns over the first photo. On the back of the photo is a listing of the fat and calories that a pepperoni pizza like this has – which makes it less appetizing.

Participants then put the photos together to make menus, and here’s what they learned: spaghetti with bolognese sauce and a salad is just as filling as the pizza, but contains only 30 percent of the fat. For Günther Zechmeister, the experienced power walker, this is not news. The machine operator from Functional Silicones and Silicone Fluids has been a vegetarian for years and is very active – in addition to Nordic walking, he is especially fond of cycling and strength training. “I’m in good shape,” he says, “but I’d like to get in even better shape. And the 36-year-old does, in fact, learn a few things this afternoon that he hadn’t known before. On the night shift, for example, hot soup or a vegetable stew is the ideal thing to eat at about 4 in the morning, because the body’s temperature decreases at that time, making a hot meal especially beneficial.

At the end of the week, Zechmeister takes home something from nearly every area: new steps from the health seminar, a few tasty recipes from the nutrition seminar, and some simple relaxation exercises from the health seminar to help him fall asleep. He also realized something: “The days in Höhenried really made a difference.” At lunch on the last day, it occurs to him that, unlike at the beginning of the program, all of the light dishes containing lots of vegetables now run out quickly.

Dr. Bailer mentors and supports Fit for Your Shift participants throughout the year. “Their overall health has improved significantly,” she says. “By the end of the project, you can tell both by their lab results and by their survey responses. Not everything goes away, but everything gets better.”

“The days in Höhenried really made a difference.”

Günther Zechmeister
Machine operator, Fit for Your Shift participant



Previous participants spread the word about their experiences with so much enthusiasm that sooner or later, not only have their families joined in, many of their colleagues have too – now when they talk about what they've achieved, their coworkers listen attentively. Plus, you can tell they've changed their habits just by looking at them.



1
Which meals contain a lot of calories? Nutrition scientist Kathrin Karau enlightens the participants.

2
Bernhard Rothenaicher was among the first to participate in Fit for Your Shift. He still benefits from the program today.

Key Events 2013 – 2014



February 2013

New Plant in South Korea

WACKER's new production plant for vinyl acetate-ethylene copolymer (VAE) dispersions officially went on stream at the Ulsan site in South Korea. With the new reactor line's additional 40,000 metric tons, dispersion capacity there increased to 90,000 metric tons per year.



March 2013

European Coatings Show

WACKER presented innovations for the construction, packaging and adhesives sectors at the European Coatings Show (ECS) in Nuremberg. Presentations ranged from silicone resins and polymeric binders for paint and plaster applications all the way to cyclodextrins as environmentally compatible processing auxiliaries.



April 2013

New Plant in Nanjing

WACKER started operating a further production plant for vinyl acetate-ethylene copolymer (VAE) dispersions in Nanjing. With capacity rising by 60,000 metric tons, output doubled to 120,000 tons a year. The plant complex is the largest of its kind in China.



July 2013

Unilever Presents Award

In Singapore, WACKER received Unilever's "Partner to Win Award" for its ability to provide a demand-driven supply of silicone raw materials. According to the jury, WACKER helped to significantly reduce the cost of silicone emulsions for haircare products by expanding capacities and developing effective solutions at its site in India.



October 2013

K 2013 Plastics Tradeshow

WACKER presented innovations for the silicone and plastics processing industries at K 2013, the 19th International Trade Fair for Plastics and Rubber, in Düsseldorf. ELASTOSIL® Film – a thin film of silicone – is a world first. It can be used, for example, in trailblazing sensor technologies.



November 2013

Pharmaceutical-Protein Business Intensified

Jena-based Wacker Biotech, a subsidiary of Wacker Chemie AG, acquired a therapeutic proteins production site from BioNet Ventures GmbH in Halle, eastern Germany. This acquisition saw WACKER taking over the facilities and patent portfolio of Scil Proteins Production. The WACKER BIOSOLUTIONS division used the acquisition to strengthen its activities in the field of pharmaceutical proteins.



January 2014

Siltronic Silicon Wafer

Siltronic took over a majority stake in its Siltronic Samsung Wafer Pte. Ltd. joint venture. Siltronic subscribed new shares in a capital increase, to hold 78 percent of the joint venture. The company was renamed Siltronic Silicon Wafer Pte. Ltd, in which Samsung retains a 22-percent stake.



February 2014

Integration Award

WACKER received the Upper Bavarian government's award for outstanding services to integration. The honor recognized WACKER's sustained support of "Die Arche" (The Ark), a children's charity in the Moosach district of Munich. One of the ways the company has supported this charity since 2007 is by making an annual donation of €100,000. The Ark provides assistance to children from socially disadvantaged families, many of whom are from abroad.



March 2014

Polysilicon Exports

Wacker Chemie AG and the Chinese Ministry of Commerce (MOFCOM) reached an amicable agreement on the issue of polysilicon exports to China. WACKER undertook not to sell polysilicon produced at its European sites below a specific minimum price in China. MOFCOM, in turn, refrained from imposing anti-dumping and anti-subsidy tariffs on this material. The agreement came into effect on May 1, 2014.



June 2014

Largest Spray Dryer Ever

WACKER invested about €20 million in production capacities for dispersible polymer powders at its Burghausen site. The Group began constructing a new spray dryer there with an annual capacity of 50,000 metric tons. The facility is one of the largest of its kind worldwide.



August 2014

WACKER Silicone Award

The WACKER Silicone Award went to Akira Sekiguchi, a professor of organic chemistry at the University of Tsukuba in Japan. The €10,000 award was conferred on August 4, 2014 during the 7th European Silicon Days in Berlin. In 2003, Sekiguchi had been the first to synthesize molecules with stable silicon-silicon triple bonds and to verify them by means of X-ray crystallography. These and numerous other studies have made Sekiguchi a pioneer in the field of organosilicon research.



August 2014

Honored by Bosch

Robert Bosch GmbH conferred its Preferred Supplier status on WACKER for elastomers and thermosetting plastics. The Stuttgart-based technology and service provider gave WACKER top marks in the categories of quality, logistics, innovation and strategic collaboration. As a Preferred Supplier, WACKER can now participate even more in the development of this customer's new products and technologies. Bosch assigns its Preferred Supplier status annually to the best of its 4,000 suppliers in its subassemblies and materials groups.



October 2014

Centennial

Wacker Chemie AG celebrated its centennial on October 13. That was the day, in 1914, when Alexander Wacker entered the “Dr. Alexander Wacker Gesellschaft für elektrochemische Industrie, KG” in the Traunstein commercial register, thereby laying the foundations of the WACKER Group. With a background in business, Wacker then established in 1903 the “Consortium für elektrochemische Industrie,” which is WACKER’s present-day corporate research arm. That original seed would later grow into today’s Wacker Chemie AG. The company celebrated its centennial with special events and open-house days.



October 2014

Bavarian Energy Award

The Bavarian government presented WACKER with its Bavarian Energy Award in Nuremberg. The award cited the Group’s highly efficient polysilicon manufacturing operations. Using advanced, patented technology and process optimizations, WACKER had lowered its specific energy consumption for polysilicon production by 29 percent. Hyperpure polysilicon is the main raw material for making solar modules and, consequently, plays a vital role in generating solar power.

Group Structure and Operations

WACKER is a globally active company with state-of-the-art specialty chemical products. Our portfolio includes over 3,200 products supplied to more than 3,500 customers in over 100 countries. WACKER products are found in countless everyday items, ranging from cosmetic powders to solar cells.

Silicon Is Our Main Starting Material

Most of our products are based on inorganic starting materials. Silicon-based products account for 80 percent of WACKER sales, and products that are primarily ethylene-related for 20 percent. Our customers come from virtually every major sector, ranging from consumer goods, food, pharmaceuticals, textiles and the solar, electrical/electronics and base-chemical industries, to medical technology, biotech and mechanical engineering. As a manufacturer of silicones and polymers, WACKER is particularly well represented in the automotive and construction sectors. We are also a key supplier of silicon wafers to the semiconductor industry. In recent years, the market for polycrystalline silicon for the solar industry – an area in which WACKER is one of the world's largest manufacturers – has demonstrated strong growth.

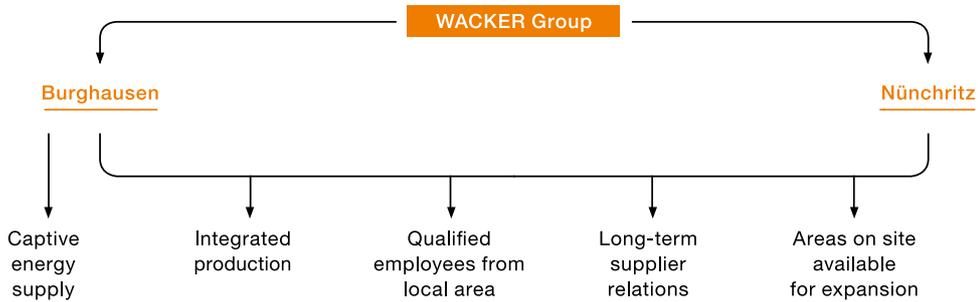
Technical Competence Centers Support Sales and Marketing Activities

WACKER operates all over the world. Our sales strategy is centered around expanding our presence in growth markets. 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 2014, we expanded our existing technical competence center for silicone applications in Kolkata, India, and opened a new sales office in Manila in the Philippines. In total, WACKER has 52 sales offices in 28 countries.

New Production Site in Germany

WACKER's integrated global production system consists of 25 production sites (2013: 24). Of these, eight are in Europe, seven in the Americas and nine in Asia. With the acquisition of Scil Proteins Production GmbH, a site for therapeutic protein production in Halle, Germany, has been added to this system. The Group's key production site is Burghausen (Germany). At this site alone, we have some 9,700 employees (including temporary workers and trainees). In 2014, Burghausen's manufacturing output reached around 680,000 metric tons, accounting for over 50 percent of the Group's production output. Alongside Burghausen, Nünchritz is WACKER's second multidivisional site.

Key Factors for Multidivisional Sites



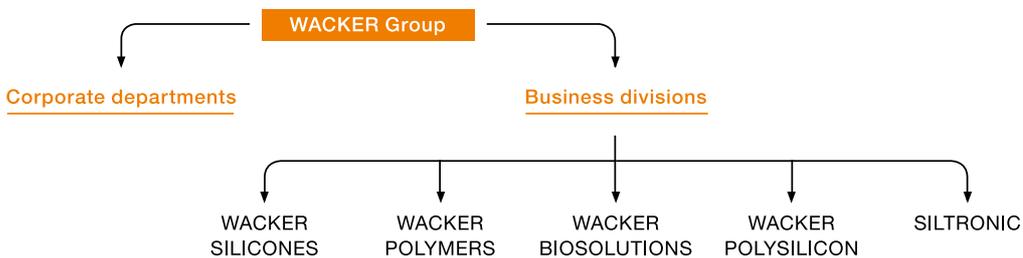
Legal Structure

Our legal structure has not changed compared with the previous reporting period. 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 56 companies belonging to the WACKER Group. The consolidated financial statements cover 52 fully consolidated companies. Three companies are accounted for using the equity method. One small company that is not part of our core operations has not been consolidated.

Five Operating Divisions

WACKER is based on a matrix organization with clearly defined functions. The Group has five business divisions, which have global responsibility for their own products, manufacturing facilities, markets, customers and results. Regional organizations are responsible for all business in their countries. WACKER's corporate departments primarily provide services for the whole Group, although some also have production-related functions.

WACKER's Structure





Group Structure in Terms of Managerial Responsibility



Management and Supervision

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

Executive Board Responsibilities

Dr. Rudolf Staudigl	President & CEO WACKER POLYSILICON Executive Personnel, Corporate Development, Corporate Communications, Investor Relations, Corporate Auditing, Legal, Compliance
Dr. Tobias Ohler	WACKER POLYMERS Human Resources (Personnel Director), Technical Procurement & Logistics, Raw Materials Procurement Region: Asia
Dr. Joachim Rauhut	SILTRONIC Corporate Accounting and Tax, Corporate Controlling, Corporate Finance and Insurance, Corporate Engineering, Information Technology Region: The Americas
Auguste Willems	WACKER SILICONES WACKER BIOSOLUTIONS Sales & Distribution, Corporate Research & Development, Intellectual Property, Site Management, Corporate Security, Environment / Health / Safety, Product Stewardship Regions: Europe, Middle East

Executive Board and Supervisory Board in 2014

The Executive Board and the Supervisory Board remained unaltered in 2014. Dr. Bernd W. Voss, a Supervisory Board member, stepped down effective December 31, 2014. He was succeeded by Dr. Andreas Biagosch, who was appointed to the Supervisory Board by court order effective January 26, 2015.

Declaration on Corporate Management

Submitted as per Section 289a of the German Commercial Code (HGB), the declaration on corporate management forms part of the [Corporate Governance Report](#). This declaration is also part of the combined management report and is available online. 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.



Key Products, Services and Processes

Our divisions' overall range of products and services remained unchanged in the reporting period. In several application areas, we expanded our product portfolio. Our WACKER SILICONES division provides customers with our broadest offering of over 2,800 products – ranging from silicone fluids and emulsions, resins, elastomers and sealants, to silanes and pyrogenic silica grades. The division manufactures both specialty products tailored to customers' specific needs, and standard products primarily used as starting materials in the production of silicones.

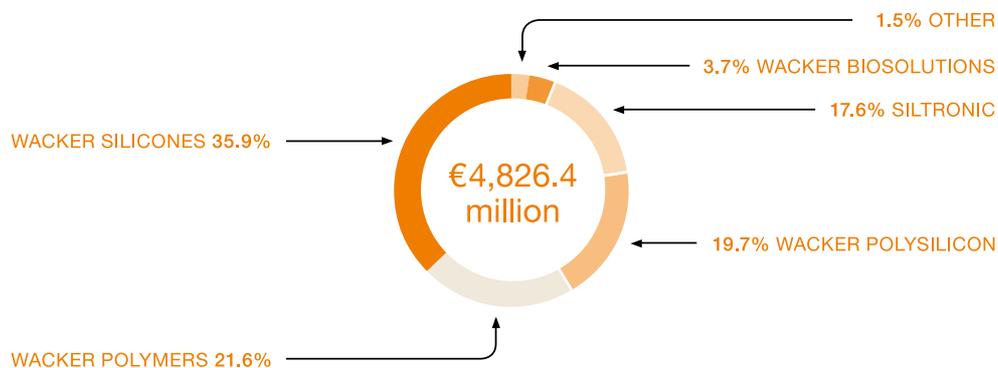
WACKER POLYMERS manufactures state-of-the-art binders and polymeric additives (such as dispersible polymer powders and dispersions). These are used in diverse industrial applications or as base chemicals. Customers include the paints, coatings, paper and adhesives industries. The main customer for polymeric binders is the construction industry, which uses them as additives in tile adhesives, dry-mix mortars, self-leveling flooring compounds, and EIFS (exterior insulation and finish systems)/ETICS (external thermal insulation composite systems).

WACKER BIOSOLUTIONS, our smallest division, supplies customized biotech and catalog products for the fine-chemical sector. 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, electronics and – above all – solar sectors. Most of this polysilicon is sent to external customers. In-house we supply polysilicon to the Siltronic division.

Siltronic supplies leading semiconductor manufacturers with silicon wafers. These wafers are the essential raw materials for virtually all semiconductor products – whether for discrete semiconductor components (e.g. transistors and rectifiers) or microchips (e.g. microprocessors and memory chips).

Divisional Shares in External Sales



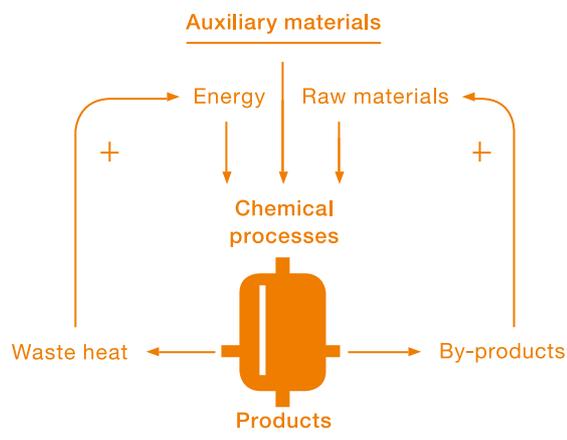
External Sales by Customer Headquarters

€ million	2014	2013	2012
Germany	663.7	647.0	686.0
Rest of Europe	1,130.5	1,073.8	1,090.7
The Americas	810.7	761.0	834.2
Asia	2,039.7	1,826.1	1,862.0
Other regions	181.8	171.0	162.0
Group	4,826.4	4,478.9	4,634.9

WACKER Adds Value through Integrated Production

WACKER's integrated production system forms the basis of high cost, energy and resource efficiency. By-products and waste heat feed back into production via highly interlinked material and energy loops and go on to create more value.

- Over the past decades, WACKER has expanded its production into an integrated system with largely closed loops.
- In integrated processes, we optimize the use of raw materials and auxiliary materials. By-products of chemical processes are used as raw materials in the facility that produced them or in a neighboring facility, where they are turned into valuable products.
- Likewise, we use the waste heat from production processes and waste incineration for further chemical processes.



Governance and Shareholder Structure

Corporate governance is an important part of a company's success, responsible corporate management and supervision. Wacker Chemie AG attaches great importance to the rules of proper corporate governance. In this report, the Executive Board provides details – also for the Supervisory Board – on corporate governance in accordance with Item 3.10 of the German Corporate Governance Code (Code) and Section 289a (1) of the German Commercial Code (HGB).

Declaration of Conformity and Corporate Governance Reporting

In the 2014 fiscal year, the Executive and Supervisory Boards dealt intensively with the company's corporate governance and the recommendations of the Code published on June 24, 2014. The Executive Board and the Supervisory Board resolved in December 2013 to issue the following Declaration of Conformity as per Section 161 of the German Stock Corporation Act (AktG). The Declaration of Conformity has since been made permanently available to the general public on the company's website.

The 2014 Declaration of Conformity Issued by Wacker Chemie AG's Executive and Supervisory Boards

General Declaration Pursuant to Section 161 of the German Stock Corporation Act

In December 2013, the Executive Board and the Supervisory Board of Wacker Chemie AG issued a declaration of conformity pursuant to Section 161 of the German Stock Corporation Act. Since that time, Wacker Chemie AG has complied with the recommendations of the German Corporate Governance Code in the version dated May 13, 2013, with the following exceptions, and will continue to comply with the recommendations of the Code in the version dated June 24, 2014, except as follows:

Exceptions

a) D&O Insurance Deductible for Supervisory Board Members

The law and the Articles of Association set clear limits in regards to the Supervisory Board's ability to exert influence on the business activities of a stock corporation. Pursuant to Section 76 (1) of the German Stock Corporation Act, an Executive Board is responsible for independently managing the corporation. A Supervisory Board is instrumental in defining the main features of corporate strategy. However, beyond this contribution, the Supervisory Board's abilities are limited in terms of influencing operations or the implementation of corporate strategy. The same applies to measures taken to avert damage or loss to the company. Since the Supervisory Board members receive a relatively low representation allowance compared with the Executive Board members' compensation, we do not consider a deductible to be reasonable for members of the Supervisory Board.

b) Appropriate Representation of Women on the Executive Board

The considerable importance that Wacker Chemie AG attaches to diversity extends to Executive Board membership. Nonetheless, expertise – including experience gained abroad – and qualifications are the key criteria here. For this reason, we do not consider it expedient to prioritize “the aim of appropriate representation of women” over expertise and qualifications.

c) Formation of a Nomination Committee within the Supervisory Board

The Supervisory Board is to establish a Nomination Committee that is exclusively composed of shareholder representatives and whose task it is to make recommendations to the Supervisory Board with regard to candidates suitable for proposal to the Annual Shareholders' Meeting.

We do not comply with this recommendation because, in view of our shareholder structure, we do not believe that the formation of such a committee is appropriate. Due to the majority situation, nominations to the Supervisory Board must be agreed with the majority shareholder in any case, so that an additional nomination committee would not serve to increase efficiency.

d) Announcement of Proposed Candidates for the Chair of the Supervisory Board to the Shareholders

According to this recommendation, shareholders shall be informed of any candidates for the Supervisory Board chair, even though as a rule, the Supervisory Board has not yet been appointed. Under German law, the Supervisory Board chair must be elected by, and from among, the Supervisory Board members. There is no legal requirement to announce the candidates for the chair from among a yet-to-be-appointed group of Supervisory Board members. Furthermore, this would result in a de facto predetermination, which is also not provided for under German law. For these reasons, we do not comply with this recommendation.

e) Naming of a Specific Target Number of Independent Members of the Supervisory Board

In its current composition, Wacker Chemie AG's Supervisory Board complies with the requirements concerning an adequate number of independent supervisory board members. What is more, in its future recommendations to the shareholders in respect of appointments, the Supervisory Board will make sure it proposes what it considers to be an adequate number of independent candidates. Setting a specific target for the number of independent Supervisory Board members would not only restrict the selection of suitable candidates for that body, but also curb the rights of the shareholders to select those candidates that they consider the most appropriate for the task. For these reasons, we do not comply with this recommendation.

f) Time Limitation on Applications for Judicial Appointment of a Supervisory Board Member

According to this recommendation, applications for the judicial appointment of a Supervisory Board member should be limited in time until the next Annual Shareholders' Meeting.

We did not follow this recommendation. Proposals for a candidate to be appointed by the court are agreed in advance with the majority shareholder in any case. Due to the majority situation, the subsequent election of the same candidate at the next Annual Shareholders' Meeting would only be confirmation of his/her appointment, which is superfluous from our point of view.

Wacker Chemie AG's largest shareholder is still Dr. Alexander Wacker Familiengesellschaft mbH, Munich. It holds over 50 percent of the voting shares in Wacker Chemie AG (2013: over 50 percent).

Blue Elephant Holding GmbH (Pöcking, Germany) once again had no voting-share changes to report in 2014, That means it still holds over 10 percent (2013: over 10 percent) of Wacker Chemie AG.

Goals and Future Topics

Management

Status of Goals for 2011/2012

Introduction of the internationally recognized OHSAS 18001 occupational health and safety management system at all WACKER sites, with verification through internal audits

Corporate entity: Groupwide

Deadline: 2015

Implementation status: Goal was realized to a large extent. All production sites have introduced an OHSAS 18001 occupational health and safety management system. We have checked the implementation as part of our internal audits. Any need for improvement identified at individual sites will be attended to by the end of 2015.

Employee Suggestion Program (BVW): increase the participation rate (number of submitters per 100 employees) from 28 to 50 percent (referenced to 2008)

Corporate entity: WACKER Germany

Deadline: Ongoing every year

Implementation status: The goal was not achieved. The participation rate fell to 32 percent in 2013 and 30 percent in 2014.

NEW GOALS

Replacement of all existing IT tools for incident, key-figure and inspection management with our SPIRIT sustainability platform

Corporate entity: Groupwide

Deadline: 2015

Assessment of the sustainability performance of our 400 main suppliers as part of the "Together for Sustainability" (TfS) initiative

Corporate entity: Groupwide

Deadline: 2016

FUTURE TOPICS

Regional Sustainability-Management Focus

In 2015, the Americas will be the focal region of WACKER's sustainability management. Our focus will involve an inspection of individual sites, including the new plant in Charleston (Tennessee, USA), with regard to EHS. In 2016, the focus will be on Europe.

Environment

GOALS

Lower our average specific energy consumption (amount of energy per net production volume) by a further 11 percent from 2013 on. Overall, from 2007 to 2022, we will have brought our specific energy down by one-third.

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 2014 onward.

Corporate entity: WACKER Germany

Deadline: 2022

Lower particulate-matter emissions by 25 percent for a comparable product portfolio. Reduce emissions of non-methane volatile organic compounds (NMVOCs). Based on the adapted assessment method for NMVOCs, work out the reduction potential for this substance group.

Corporate entity: Groupwide

Deadline: 2022

Protect rivers and other surface water even better against harmful substance escapes. This includes a groupwide study to identify potential risks and take countermeasures. Develop additional measures as part of our plants' safety plans to increase the protection further.

Corporate entity: Groupwide

Deadline: 2015

FUTURE TOPICS

Energy

WACKER is continuing to work on improving its energy efficiency. The planned start of polysilicon production in Tennessee in 2015 will increase our electricity consumption. We aim to reduce our weighted specific energy consumption (amount of energy per unit of net production output) in Germany by one-third by 2022, with 2007 as the base year.

Air

With our quantifiable environmental goals, we intend to decrease the impact of our production activities on the environment. An example of how we are working on achieving our CO₂ target is illustrated at the Burghausen site, where WACKER POLYMERS has invested in an ethylene-recovery plant in order to further improve the sustainability of its VAM (vinyl acetate monomer) plant. With it, we aim to annually recover 2,400 metric tons of ethylene from the VAM plant's waste gas and return it to the VAM process. This is equivalent to 6,800 metric tons fewer carbon dioxide emissions per year. This recovery plant started up in the first quarter of 2015.

Soil and Groundwater

In 2015, we applied for a permit as required under German water law in order to withdraw more groundwater at the Burghausen site in the future. We want to do this to ensure the quality of our ultrapure water supply and, in particular, to bridge periods of poor quality surface water. An extensive monitoring program will accompany the withdrawal of groundwater. This will include groundwater level measurements, discharge measurements at three streams in the Haiming municipality and a functional check of the habitats in the riparian woodland, including nature-conservation inventories. This is how we aim to ensure that the groundwater withdrawal does not negatively impact nature, e.g. water quality and tree growth in the nature reserve.

Biodiversity

In 1992, the United Nations Conference on Environment and Development passed the Convention on Biological Diversity. In May 2011, the EU Commission published a biodiversity strategy to 2020. We are collaborating with the German Chemical Industry Association (VCI) to implement this strategy in the German chemical industry.

Products

Product Safety

Status of Goals for 2011/2012

We will publish further GPS Safety Summaries – which make information on material properties publicly accessible – for the substances we have registered with the ECHA. 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. By the end of the 2011/2012 reporting period, we had published 41 GPS Safety Summaries on the ICCA (International Council of Chemical Associations) website.

Corporate entity: Groupwide

Deadline: The relevant GPS Safety Summaries are to be published on the ICCA website no later than one year after the registration of our substances with the ECHA. This will probably amount to more than 300 substances by the end of 2018.

Implementation status: By the end of 2014, we had published 75 Safety Summaries on the [ICCA chemicals website](#) for the substances we registered under REACH.

FUTURE TOPICS

REACH

We are preparing a further 145 substance dossiers for the third stage of REACH, which runs until mid-2018. We will publish further descriptions of the safe, environmentally compliant use of chemicals (GPS Safety Summaries) for the substances we have registered with the European Chemicals Agency (ECHA).

GHS

In 2014, GHS implementation was in high gear in Europe and the USA in order to meet the deadline of June 1, 2015. The aim of the United Nations' GHS initiative (Globally Harmonized System of Classification and Labeling of Chemicals) is to create a globally uniform system for labeling hazardous substances. In actual practice, however, every country has the freedom to tailor the system. This results in many national versions of GHS that differ in significant ways, making the job of classifying and labeling our products that much more complex. We are continuing to make steady progress toward our goal of meeting country-specific implementation deadlines. As matters stand, these deadlines will extend beyond 2017.

Products

Product Stewardship

FUTURE TOPICS

Research and Development

The Group's research and development work remains focused on key strategic projects. One major aspect of R&D work in 2015 will be to bring to market the initial results of our New Solutions project – an initiative for developing technically and commercially superior solutions for new applications. Our R&D priorities remain the highly promising fields of energy, consumer care, biotechnology, construction applications and semiconductors. We are devoting particular attention to energy storage and renewable energy generation. WACKER will continue to participate in the National Platform for Electric Mobility, an initiative launched jointly by the German government and industry. The common goal is for at least one million electric vehicles to be on the road in Germany by 2020. At its Corporate R&D facility, WACKER is working on developing accumulator technologies that will pave the way for viable, sustainable electromobility. For example, researchers want to replace the graphite in lithium-ion batteries with silicon, since silicon can absorb up to 10 times as many lithium ions, thereby considerably increasing the energy-storage capacity.

Polysilicon Production

Our polysilicon production plant in Charleston (Tennessee, USA) will be completed in 2015. Our development projects are focused on further boosting the efficiency of polysilicon production processes. We believe there is considerable scope for reducing specific energy consumption. Lower production costs will further enhance the competitiveness of photovoltaic power generation. We expect this application to develop into a leading energy source for meeting worldwide electricity demand over the coming decades. We share this opinion with numerous experts, e.g. the International Energy Agency (IEA), which even predicts in one of its growth scenarios that up to 50 percent of power will be supplied by photovoltaics by 2060.

Ecological Product Assessments

WACKER will further deploy the WACKER® Eco Assessment Tool as a standard tool across the Group. This will help us assess the sustainability performance of our key product lines.

Safety

Status of Goals for 2011/2012

Reduce accident rate (number of accidents with lost workdays per million hours worked) from 4.7 to 2.0 (referenced to 2012)

Corporate entity: Groupwide

Deadline: 2015

Implementation status: We made great progress toward reaching this goal in the period under review. Groupwide, there were 3.8 workplace accidents with days off work per million hours worked in 2013 – a drop of 19 percent compared to 2012. In 2014, the accident rate fell again – by 26 percent – to 2.8.

Introduction of safety performance indicator “Accidents Leading to Work Days Missed by Employees of Partner Companies”

Corporate entity: WACKER Germany

Deadline: 2014

Implementation status: The goal was surpassed. Since 2014, we have been registering accidents with work days missed involving employees of partner companies not only in Germany, but also groupwide. In 2014, there were 33 accidents with work days missed involving partner companies at Wacker Chemie AG sites around the world.

NEW GOALS

Reduce number of safety and environmentally relevant incidents per million hours worked by 10 percent (referenced to 2014)

Corporate entity: Groupwide

Deadline: 2015

FUTURE TOPICS

In-Depth Hazard Analyses – Better Protection Plans

WACKER would like to deploy a more far-reaching method of reviewing and updating hazard analyses at all German sites by the end of 2016. The goal of the program is to improve the protection plans and measures for individual activities.

Focus Topic: Safe Handling of Chemicals

We have resolved to make a closer study in 2015 of injuries caused by hazardous substances. Our aim is to further enhance our protection plans.

Employees

Status of Goals for 2011/2012

Introduction of new health performance indicators:

- Annual influenza inoculation of at least 20 percent of the Group workforce
- Occupational diseases that have a short latency period (number of new cases)
- First aid/rescue chain: at least one medical emergency drill per production site per year; effective first aid within three minutes
- Completion of all scheduled occupational-health checkups on the basis of occupational hazard analyses
- Each site to participate in Group campaigns on health promotion (in 2013: "Follow your heart")

Corporate entity: Groupwide

Deadline: 2013

Implementation status: The goal was achieved. The individual points in detail:

- Influenza inoculation was offered at all sites. Depending on the site, participation ranged from six to 30 percent.
- The number of occupational diseases that have a short latency period was extremely low. Noise was the predominant cause of illness.
- All production sites completed medical emergency drills.
- All scheduled occupational-health checkups were completed.
- All production sites participated in Group campaigns on health promotion.

Introduction of a groupwide talent-management system to foster employees of high potential, and filling of key positions

Corporate entity Groupwide

Deadline: 2014

Implementation status: The goal was achieved. The company established a new talent-management process in 2013, which is valid around the world. Its aim is to identify our employees' potential earlier and to promote it.

NEW GOALS

With an inter-site employee survey, WACKER aims to identify its organization's strengths and improvement potential. Furthermore, the instrument is to support managerial employees in improving the performance within their areas of responsibility.

Corporate entity: WACKER Germany
Deadline: 2015

"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 improvements by 2020

FUTURE TOPICS

New Executive-Development Programs

We will continue with the new approach to executive development that we started in 2014. In 2015, we launched two new formats for experienced managerial employees. The Learning Company seminar allows participants to assume different leadership roles as part of a model organization and obtain feedback on their performance from experienced instructors. During the External Peer Reflection program, our managers can exchange ideas with managerial employees of the same hierarchical level from other companies.

Initiative to Increase Diversity and Inclusion in the Workforce

Globalization, demographic change and new regulatory requirements are making diversity and inclusion increasingly important issues. In 2015, WACKER started a groupwide initiative to promote diversity and inclusion in the workforce. The company has joined the German nationwide "Diversity Charter" initiative. As a first step, we want to raise awareness for the topic among our management employees with the aid of incentive and discussion events. As a second step, the regions and departments will develop their own diversity and inclusion strategies and goals. WACKER Germany is focusing on gender age/experience, and cultural background.

Society

FUTURE TOPICS

WACKER Revises CHEM₂DO Experiment Kit

WACKER is continuing to develop its experiment kit. After two years of experience in actual school settings, we have worked with our educational partners on a systematic evaluation of the 2012 version of CHEM₂DO (which has by now run out). Our aim here is to adapt the kit to better meet schools' circumstances and children's prior knowledge, and we have incorporated feedback and suggestions for improvement from teachers. The kit will be available beginning in the fall of 2015.



Management

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Power and salt are the building blocks of working life, or at least they are for chemist Dr. Guido Kallinger, who heads the base chemicals unit at WACKER's Burghausen site. Every morning at 8 a.m., he meets his management team and discusses the day's schedule. Almost the entire Burghausen site is dependent on the services of this management team and their staff members – without their efforts, the production plants would be idle.





Vision and Goals

Founded on a vision and goals, our strategy is an appreciation of what we aspire to achieve. Our focus is on profitable growth and securing a leading competitive position in most of our business fields. The fact that we have made sustainability one of our strategic goals emphasizes its importance.

WACKER's Vision

We develop intelligent solutions for sustainable growth.

WACKER, as an innovative chemical company, 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 our activities focus on our customers' needs. Satisfied customers are the basis of our success. We aim to continuously raise our product quality and enhance 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, act proactively 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 open up new markets with 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 know how to transfer new production methods from development to globally competitive 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 ACADEMY. 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 fundamental to our corporate policies. We measure our success against clearly defined key parameters and continuously focus

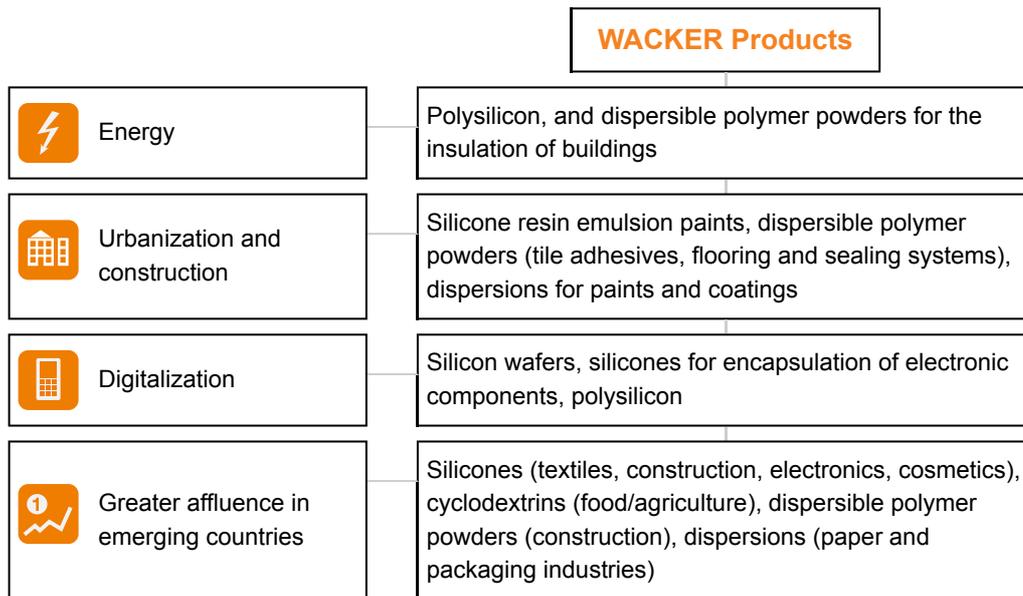
on earning more than our cost of capital. We want to be among the top three suppliers in each of our business sectors. To this end, we always strive to strengthen our competitive edge in cost, quality and technology.

- **Our responsibility as a company extends beyond our business activities.** Our commitment to sustainability encompasses ecological, economical 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 by-products from one production stage as starting materials for making other products. This reduces our consumption of energy and other resources.

Our strong sense of social responsibility is based on deeply rooted values. We pursue this commitment in the vicinity of our sites and wherever people are in distress 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.

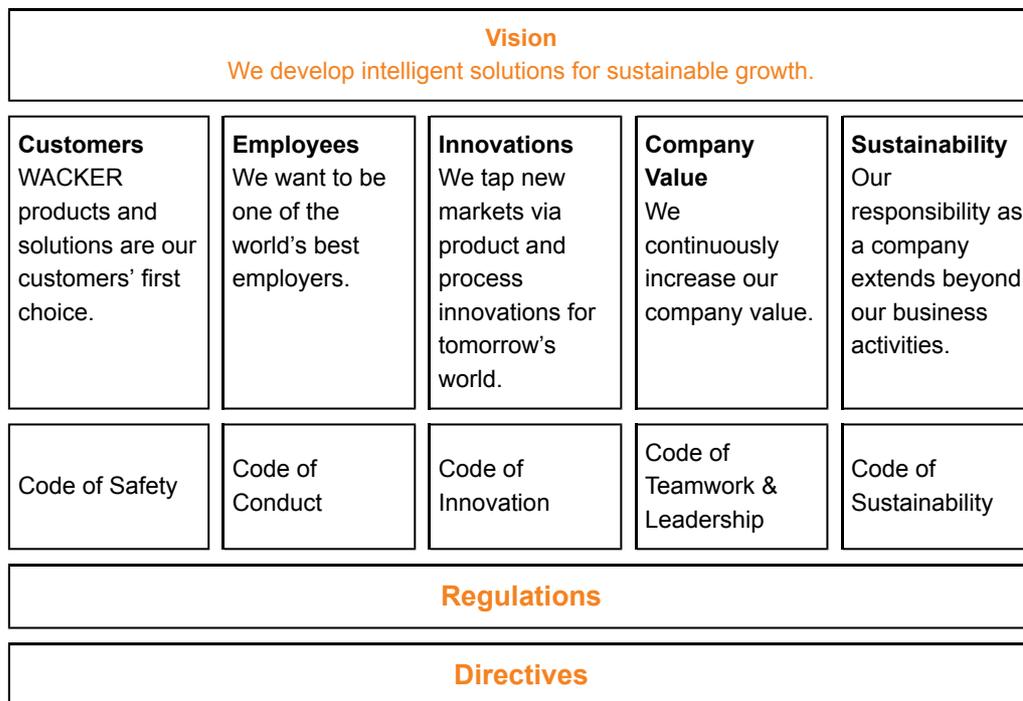
Executive Development



Business Principles

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.

Megatrends



Code of Conduct

The Code of Conduct contains our principles on interactions with business partners and third parties. It also regulates how we deal with information, confidentiality and data security, protection against money laundering and keeping private and company interests separate.

[Code of Conduct \(PDF\)](#)

Code of Innovation

The Code of Innovation specifies our principles as applicable to R&D, cooperation, patents and innovation management.

[Code of Innovation \(PDF\)](#)

Code of Teamwork & Leadership

The Code of Teamwork & Leadership outlines our understanding of collaboration and management. There is special emphasis on trust and respect, motivation and success, recognition and development, teamwork and equal opportunities, work-life balance and the role-model function of managers.

[Code of Teamwork & Leadership \(PDF\)](#)

Code of Safety

The Code of Safety defines our safety culture and sets safety regulations for workplaces, plants, products and transport.

[Code of Safety \(PDF\)](#)

Code of Sustainability

The Code of Sustainability details principles of sustainability with which R&D, procurement and logistics, production and products, as well as our social commitment, must comply.

[Code of Sustainability \(PDF\)](#)

Voluntary Commitments

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 are committed to continually improve health, safety and environmental performance on a voluntary basis – even in the absence of statutory requirements.

WACKER Greater China won the Responsible Care® Chairman's Award in 2013. With this award, the Association of International Chemical Manufacturers in China (AICM) acknowledged WACKER's endeavors in environmental and health protection, as well as in plant and workplace safety. WACKER Greater China, together with about 40 other chemical companies, renewed its voluntary commitment to the Chinese Responsible Care® program in 2014. This WACKER region first joined the initiative in 2008.

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 these principles, which address social and environmental standards, anticorruption and the protection of human rights.

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

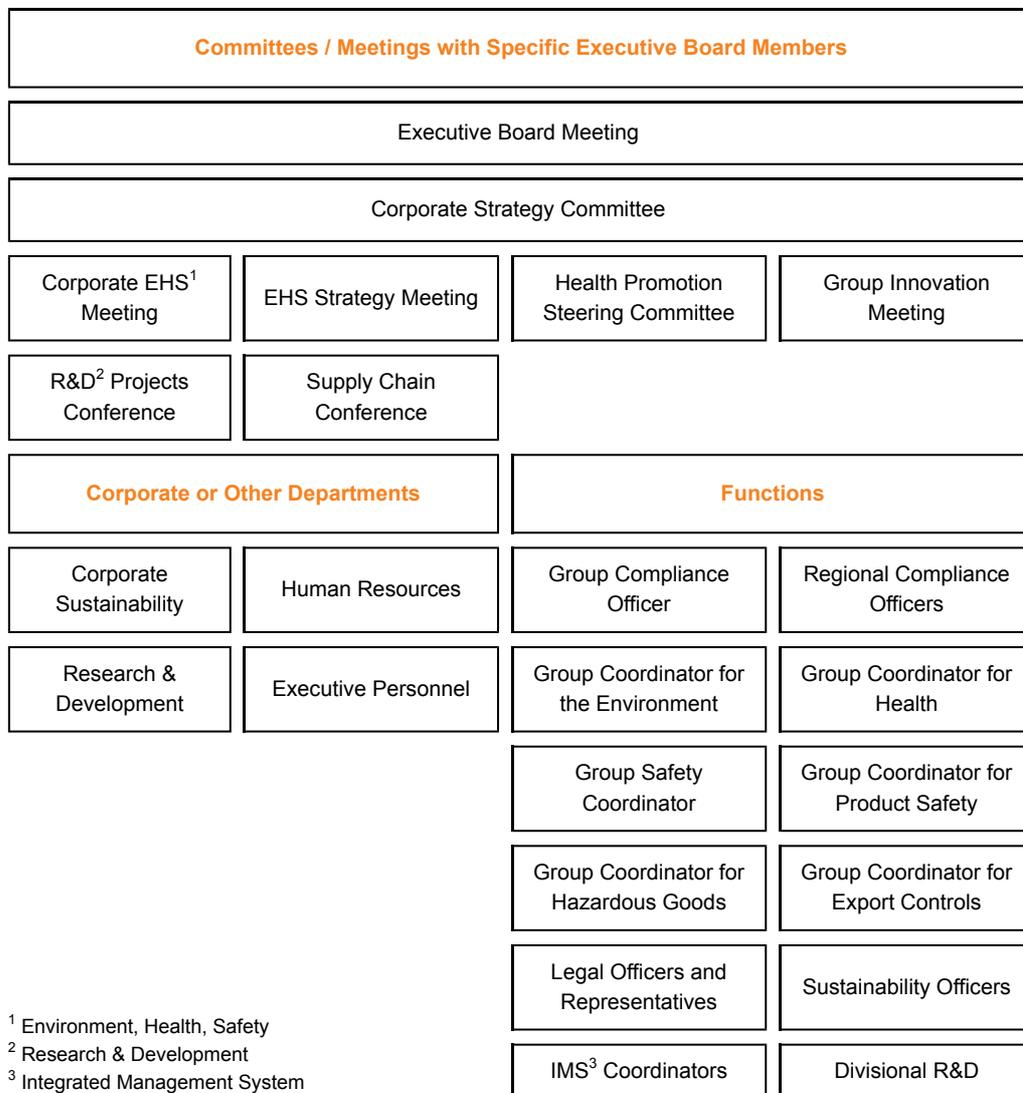
- Principle 10: businesses should work against corruption in all its forms, including extortion and bribery.

Management Structures for Sustainability

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. Joachim Rauhut, Dr. Tobias Ohler and Auguste Willems, who is responsible for sustainability.

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.

Coordinating Sustainability at WACKER



¹ Environment, Health, Safety

² Research & Development

³ Integrated Management System

The Corporate Strategy Committee (KUS), for example, deliberates on strategically important processes, potential market or competitor developments, and key special topics not directly related to daily operations. The committee 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. Employee health is addressed once a year by the Health Promotion Steering Committee chaired by WACKER's personnel director. The Supply Chain Conference focuses on the Group's productivity projects and goals and is 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. Here, participants exchange experiences and discuss the progress of sustainability-related topics that apply groupwide. EHS & PS management focused on Europe in 2013 and on Asia in 2014. 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.

Personnel Responsibility

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 groupwide 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).

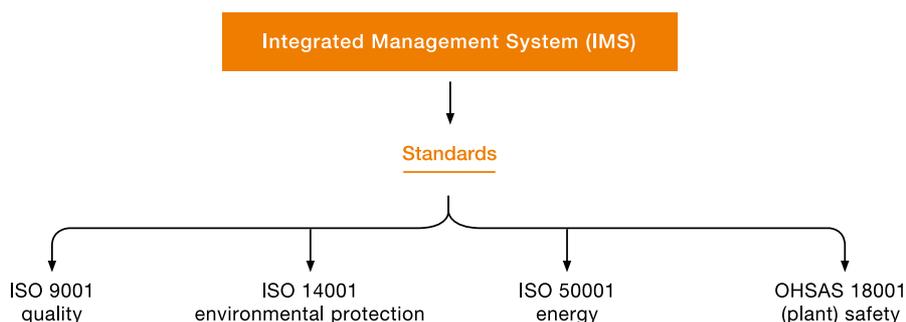
Workplace and plant safety are of vital importance at WACKER. This is why we define safety goals in the annual performance reviews together with Executive Personnel and management employees in Germany. They are mandatory personal goals, especially for executives in production-related areas. They also influence the final performance evaluation.

Management Systems

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

WACKER's voluntary commitments regarding the Responsible Care® and Global Compact initiatives exceed legislative requirements. We use the IMS to control additional sustainability-related topics, for instance the effective use of resources such as energy in our production processes. We have our Group management system evaluated by an international certification organization in accordance with ISO 9001 (quality) and ISO 14001 (environmental protection) standards, and our German sites as per ISO 50001 (energy). At Siltronic, every site is certified to ISO/TS 16949 (quality), ISO 14001 and OHSAS 18001 (plant safety and occupational health and safety), due to this subsidiary's specific processes and customer requirements.

Integrated Management-System Standards



Our Group certification ensures that customer-driven specifications and our corporate standards are implemented at all WACKER sites. In 2013 and 2014, we expanded our Group certification to include our Jincheon site in South Korea and the technical competence center in Mumbai, India (certified to ISO 9001 and ISO 14001). We have merged Wacker Chemie AG's ISO 14001 and ISO 50001 certification with that of Siltronic AG.

Our processes and standards relating to occupational health and safety and plant safety will be aligned with the international OHSAS 18001 standard by 2015. Both our Siltronic subsidiary and our Jincheon site already have an OHSAS certificate. The German sites introduced an OHSAS management system in 2013. The Jandira site in Brazil passed an external audit in line with this standard.

Almost all WACKER production sites are now included in the Group certificate. Exceptions are our Brazilian sites, Wacker Metroark Chemicals Pvt. Ltd.'s plant in Kolkata, India, and the Halle, Germany site, which we acquired from Scil Proteins Production GmbH in 2014. These have corresponding individual certificates, though.

In the reporting period, the Chinese subsidiary Wacker Chemicals (Zhangjiagang) Co., Ltd. obtained certification as a Clean Production company. The Chinese Environmental Protection Bureau reviewed corporate environmental protection in the course of certification, assessing, for example, savings in electricity, raw materials, fresh water, and waste.

Controlled Documents and Controlling Instruments

At WACKER, twenty-one 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.

All our processes are designed to keep customers satisfied, meet our obligations to society, and to secure WACKER's competitiveness. Each of our sites achieves these goals in different ways. At Siltronic's Portland site (Oregon, USA), a very effective "Quality and Value Improvement System" uses a wide range of control mechanisms – such as balanced scorecards, and systems for developing, prioritizing and tracking action plans. So that employees can view action plans and success rates at any time, Portland publishes them in a database and on a bulletin board.

Since 2012, we have been using the WACKER® Eco Assessment Tool to evaluate systematically the risks and opportunities of our product line from an environmental perspective. We take account of material, water and energy consumption, as well as ecotoxicity, over the entire product life cycle.

The Group's corporate carbon footprint report is an important tool for improving climate protection. That's why we have been determining not only our direct greenhouse gas emissions (as per Greenhouse Gas Protocol Scope 1) and indirect emissions from bought-in energy (Scope 2), but also our Scope 3 emissions since 2012. These include emissions generated along the supply chain, e.g. by suppliers or through waste disposal and the transportation of products. In 2014, we added further Scope 3 categories and adapted our calculation methodology to the GHG Protocol guidance for the chemical industry. In the period under review, we forwarded these emissions data to the Carbon Disclosure Project (CDP). Founded in 2000, CDP is a non-profit organization working to achieve greater transparency in greenhouse gas emissions.

In 2013, our new IT system for sustainability reporting (SPIRIT) was implemented groupwide, replacing the various individual systems. We use the new software to collect and manage environmental and energy data, environment- and safety-related incidents, and Integrated Management System (IMS) inspections and audits. In 2014, we benefited from the use of this instrument at all our large production sites. It has replaced almost 70 percent of our former systems.

Productivity Programs

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

2013 and 2014 saw the implementation of more than 1,000 projects at our operating divisions and corporate departments. Some 700 of these concerned our operating divisions, with the corporate departments accounting for 300. The focus of WOS was on improving plant utilization levels, specific energy consumption and raw-material yields, and optimizing specific maintenance costs. The WOS measures implemented over the two-year reporting period yielded a business value contribution of some €280 million.

Established by WACKER in 2009 to further cement WOS within the company, the WOS ACADEMY offers training in productivity topics. Participants are given hands-on training in specific projects at the various plants and are thus able to apply the methods immediately. The WOS ACADEMY instructors act as advisors during these projects. In 2013 and 2014, the WOS ACADEMY trained some 180 employees in the application of new productivity methods, such as Six Sigma.

Idea Management

Ideas Submitted by WACKER Employees



The ideas submitted by its employees help WACKER to do things better and stay competitive. The number of improvements suggested by our employees fell in 2014 for the first time after four uninterrupted years of increases. In total, we received 7,672 ideas (2013: 9,159), roughly 16 percent less than in the previous year. The participation rate (number of submitters per 100 employees) fell slightly to 30 percent (2013: 32 percent). The calculable benefit rose to €8.3 million (2013: €7.7 million).

Since 2007, WACKER has been examining improvement suggestions to see whether they could be applied to other areas, too. This so-called multiple usage has increased greatly since its introduction. In 2014, it accounted for some additional €500,000 in savings. Over the years, the total initial benefit amounted to €3.0 million; multiple usage generated a further €3.3 million.

Since 1975, WACKER employees have submitted around 130,000 improvement suggestions. Over half of these – 71,000 suggestions – have been implemented, leading to company savings of €133 million. Submitters have received a total of €30 million in bonuses. In the regular sector-wide comparison, WACKER ranks among the best with respect to the number of ideas, their benefits and the premium paid per employee.

To maximize the benefits from ideas, WACKER has interlinked the Employee Suggestion Program, the Wacker Operating System (WOS) and Innovation Management.

Idea Management

	2014	2013	2012
Number of improvement suggestions	7,672	9,159	8,982
Total benefits (€ million)	8.4	7.7	6.4
Participation rate ¹ (%)	30	32	34

¹ Submitters per 100 employees

Chains Instead of Toothed Belts

While once again repairing an alkaline etching facility, Siltronic employee Hans-Jürgen Geyer had a brilliant idea: why not replace the facility's vulnerable points, its toothed belts, with chains? Toothed belts had previously made it possible to transfer silicon wafers to and from several process baths in a matter of seconds. However, with time, the belts succumbed to the highly alkaline vapors in the facility – they became brittle and frequently needed to be replaced. The repair work created high costs, which were further augmented by the associated production outage. Since the toothed belts have been replaced with robust chains, the facility has been running smoothly. Geyer's idea has provided Siltronic with an economic benefit in the five-digit euro range and earned him a bonus in recognition.



Compliance

WACKER's ethical principles of corporate management exceed legal requirements. They are summarized in our [Code of Conduct](#). All WACKER employees are required to follow this code. There are separate and/or supplemental guidelines for individual corporate sites (e.g. WACKER Greater China's Employee Handbook). The Group's US companies have their own compliance programs tailored specifically to US law.

WACKER does not tolerate violations of its Code of Conduct or of any legal requirements. Any employee who has questions about appropriate behavior at work can receive counsel from supervisors, employee representatives and 22 compliance officers worldwide. The chief compliance officer reports to WACKER's president & CEO.

Compliance Officers at WACKER

Location	Company
Germany and Europe	
Munich (Germany and countries not expressly mentioned): Coordination and Management, Group Compliance Management	Wacker Chemie AG
Stetten, Germany	Wacker Chemie AG
Holla, Norway	Wacker Chemicals Norway AS
Moscow, Russia	Wacker Chemie RUS
The Americas	
Adrian (Michigan, USA)	Wacker Chemical Corp.
Portland (Oregon, USA)	Siltronic Corp.
São Paulo, Brazil	Wacker Química do Brasil Ltda.
Mexico City, Mexico	Wacker Mexicana S.A. de C.V.
Asia	
Dubai, United Arab Emirates	Wacker Chemicals Middle East FZE
Hsinchu, Taiwan	Siltronic Taiwan branch office
Kolkata, India	Wacker Metroark Chemicals Pvt. Ltd.
Mumbai, India	Wacker Chemie India Ltd.
	Wacker Chemicals China Company Ltd.
Shanghai, China	(Holding)
Shunde, China	Wacker Dymatic (Shunde) Company Ltd.
	Wacker Polymer Systems (Nanjing) Company Ltd.
Nanjing, China	
	Wacker Polymer Systems (Wuxi) Company Ltd.
Wuxi, China	
	Wacker Chemicals (Zhangjiagang) Company Ltd.
Zhangjiagang, China	
Tokyo, Japan	Wacker Asahi Kasei Silicone
Tokyo, Japan	Siltronic Japan Corporation
Seoul, South Korea	Wacker Chemicals Korea Inc.
	Siltronic Asia Pte. Ltd. / Siltronic Silicon Wafer Pte. Ltd.
Singapore, Singapore	
Singapore, Singapore	Wacker Chemicals South Asia Ltd.

Employees are instructed to inform their supervisors, the compliance officers, the employee council or their designated HR contacts of any violations they notice. WACKER follows up every justified suspicion. WACKER Greater China has 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.

Employees who have regular business contacts must complete a mandatory online course on compliance. Enforced throughout the Group, the course also covers antitrust law. All WACKER sales and marketing employees must additionally undergo an online training on European antitrust law (WACKER Antitrust Program) and receive detailed instruction in antitrust law at classroom seminars. In addition to online training, employees have the opportunity to attend courses on the subject during divisional and regional meetings and international sales conferences. US staff receive antitrust law training tailored to the law there. In Germany, online training on data protection complements the compliance courses.

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.

In the period under review, Compliance Management devised globally applicable measures in consultation with international sites to ensure compliance with local requirements. Another focal point was protection against cybercrime. Employees working in high risk areas, such as accounting and finance, received instruction in effective strategies to combat cyberattacks.

As of 2014, 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.

Corporate Auditing is part of our risk management system. On behalf of the Executive Board, this department regularly reviews all corporate entities with regard to processes, focusing on internal control systems. The Executive Board – in consultation with the Audit Committee – adopts a risk-driven approach when choosing audit topics, which, if necessary, are flexibly adjusted during the year to take account of changes in underlying conditions. Processes and areas that constitute a high risk in terms of corruption or legal non-compliance are scrutinized more frequently by the auditors. Criteria for the risk assessment include:

- Country classified as having a high risk of corruption
- High possible risk of damage (financial or reputation-related)
- Compliance issue (suspected cases)
- Previous audit revealed substantial need for action
- Legal obligation to have regular audits

For capital-intensive engineering activities (e.g. project engineering and maintenance), we employ specially qualified industrial personnel as auditors.

The auditing emphasis in 2013 and 2014 was on sales topics, the settlement of investment projects and external maintenance work, and solving cybercrime. In addition, cross-functional audits were used to review the business processes of eight subsidiaries. Corporate Auditing conducted a total of 29 audits in 2014 and 30 in 2013. No major complaints came to light. Audit recommendations to optimize processes are being implemented and systematically followed up.

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.

Compliance Cases

	2014	2013	2012
Level of key fines ¹ and number of non-monetary penalties for non-compliance with requirements of environmental legislation.	-	-	-
Number of organizational units subjected to corruption audit	29	30	32
Legal entities subjected to corruption audit (%)	20	17	27
Employees ² trained in corruption prevention (%)	50	50	50
Measures ³ taken in response to violation of laws, codes and standards			
Written warnings	18	24	18
Termination of employment contract	8	8	7
Number of complaints about anticompetitive behavior, violation of antitrust or monopolies legislation	-	-	1
Level of key fines ¹ and number of non-monetary penalties for breaches of legal requirements	-	-	-
Level of key fines ¹ for breaches of legal requirements relating to the supply and use of products and services	-	-	-

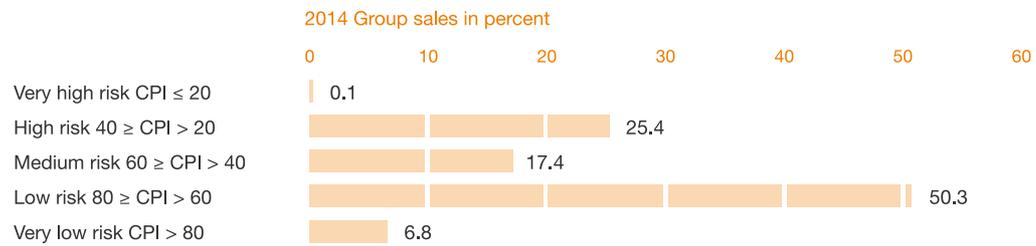
¹ Level of key fines: starting at €10,000

² Employees who have contact with external business partners receive training every two years. That's around 50 percent of all WACKER employees.

³ WACKER Germany only

According to Transparency International's Corruption Perceptions Index (CPI), WACKER is predominantly active in countries that have a low or very low risk of corruption.

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.

Customer and Supplier Management

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.

SMART is the name of our customer management system that helps us maintain our customer relationships. SMART contains customer profiles and all other relevant information about customers. This ensures optimum customer support. The system supports Sales, for example, with correspondence and with complaints processing. Every complaint is entered into SMART and systematically tracked until our final reply has been sent to the customer. Standardized measures, some of which are initiated automatically, ensure that the affected customer and associated team 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 POLYSILICON, for example, conducts annual customer surveys. The Siltronic business division analyzes the supplier evaluations which its major customers conduct each year. The surveys and comparative analyses have repeatedly confirmed WACKER's excellent reputation over the years.

WACKER customers break down into three groups: global key accounts, customers, and distributors. Global key accounts are customers of special strategic and high economic significance for WACKER. We currently have some 40 global key accounts with whom we generated around 25 percent of our 2014 revenue in the chemical divisions (WACKER SILICONES, WACKER POLYMERS and WACKER BIOSOLUTIONS). Over 55 percent of our chemical-related revenue was from our approximately 8,000 other active customer relationships and around 20 percent from distributors.

Our supplier management team is another area that focuses on sustainability. Our suppliers number approximately 11,500 (10,500 in the Technical Procurement & Logistics department and 1,000 in Raw Materials Procurement). Over 80 percent of our suppliers are headquartered in a member state of the Organisation for Economic Co-operation and Development (OECD). The OECD has 34 member countries that are dedicated to the economic and social wellbeing of people around the world. We expect our suppliers to observe the principles of the UN's Global Compact and the Responsible Care® initiative. This constitutes part of our general terms of procurement. If we discern violations of these principles during the course of our collaboration, we discuss our observations with the supplier in question and demand improvements.

We expect our suppliers to have a management system that meets the requirements of ISO 9001 (quality) or comparable specifications such as GMP (Good Manufacturing Practice). Furthermore, we require our industrial suppliers to be certified to ISO 14001 (environmental protection). Our complaints management system enables us to improve processes at short



notice. Our key suppliers' performance is entered into an evaluation which we discuss with them collaboratively. WACKER honors the best suppliers and shippers at the annual Supplier and Logistics Days held by Technical Procurement & Logistics (TPL).

Systematic review of supplier risks is an important tool at WACKER for correctly evaluating our supplier relationships and adapting our procurement strategies accordingly. In the reporting period, reviews were conducted using analyses from rating agencies, our own supplier assessments and, increasingly, direct contact with our partners. In 2013 and 2014, Technical Procurement reviewed 438 suppliers. Key criteria, whose examination depends on the specific procurement segment, include quality, risk in the event of non-delivery, availability and dependency, intellectual property protection and a supplier's financial stability.

For many years now, WACKER's Siltronic subsidiary has been deploying its own risk management system for suppliers as a way of securing deliveries and services in the long term. Suppliers are assessed by criteria such as quality, delivery reliability and solvency. The system then categorizes them according to risk. Where there is a substantial risk that criteria will not be met, countermeasures are promptly taken.

WACKER desires to strengthen its commitment to sustainable business practices in the supply chain. To this end, the company joined the chemical industry's "Together for Sustainability" (TfS) initiative in January 2015. Established in 2011, the organization aims at developing a global program for responsible procurement of goods and services and improving the ecological and social standards of suppliers.

Dialogue with Stakeholders

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 use a monitoring and analysis tool to identify our principal stakeholders and their expectations. 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.)
- Tradeshow
- Committee work and presentations

Digital media are growing in importance compared to conventional communication formats. Professional social networks are opportunities for companies, customers and experts to share information on products and applications and thereby support their business activities. In 2013, WACKER set up its own sites on YouTube, Twitter and LinkedIn.

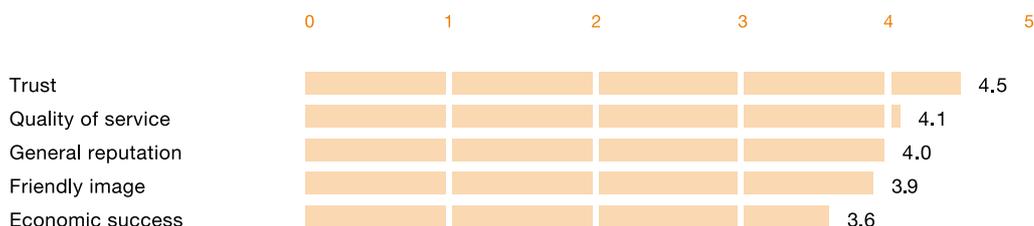
WACKER has been participating in the sustainability assessments of the [Carbon Disclosure Project](#) (CDP) since 2007. In 2014, WACKER was listed for the first time in the Carbon Disclosure Leadership Index (CDLI) for the German-speaking region (Germany, Austria, Switzerland and South Tyrol), having achieved a score of 95 B. We thus outperformed our peer group in the MDAX in this respect. After achieving a result of 86 B in 2013, we defined our CO₂ reduction target and elaborated our reporting on opportunities and risks and on indirect [emissions](#) generated along the supply chain (Scope 3).

WACKER performed well in a 2014 assessment by rating agency [oekom research AG](#) with an overall grade of B-. oekom's rating methodology classifies our company as "Prime." This means that WACKER securities traded on the market qualify for investment from an ecological and social point of view. oekom customers include financial services providers that have invested volumes exceeding €600 billion based on oekom sustainability research. oekom research has been assessing WACKER since 2008.

In 2014, the German Chemical Industry Association (VCI) honored three companies on a national level for outstanding site communications projects. Our Burghausen site took second place with its "Get to Know and Trust WACKER" project. The site operates a systematic communications program that reaches out to neighbors, regional political bodies and non-governmental organizations.

In 2014, we quizzed our stakeholders about WACKER's sustainability efforts and its reputation. A total of 224 individuals with links to our company filled out online questionnaires or took part in telephone interviews. 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. Its outcome showed that WACKER enjoys a very good reputation among the various stakeholder groups. We scored a high figure of 84 points in the reputation stakes – this compares with the average score for industrial companies and service providers of just 51 points. WACKER's good reputation stems primarily from the high level of trust which is placed in the company. Some 72 percent of stakeholder representatives are genuine ambassadors for WACKER. They trust the company and have confidence in its ability to deliver.

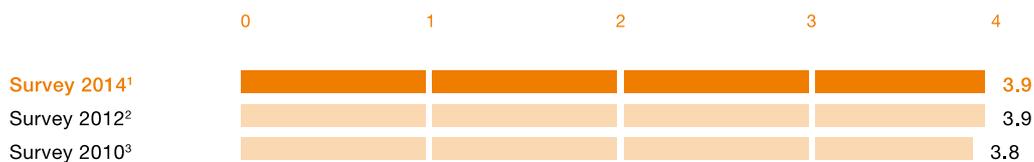
Reputation Drivers for WACKER



5 is the maximum value

The aim of the sustainability survey was to find out how these interest groups viewed our commitment to sustainability and where they saw room for improvement. Evaluation of the online questionnaires revealed that our sustainability efforts are viewed very favorably and reach the same survey level as in 2012.

Opinion of Sustainability Performance



1 = poor to 5 = excellent

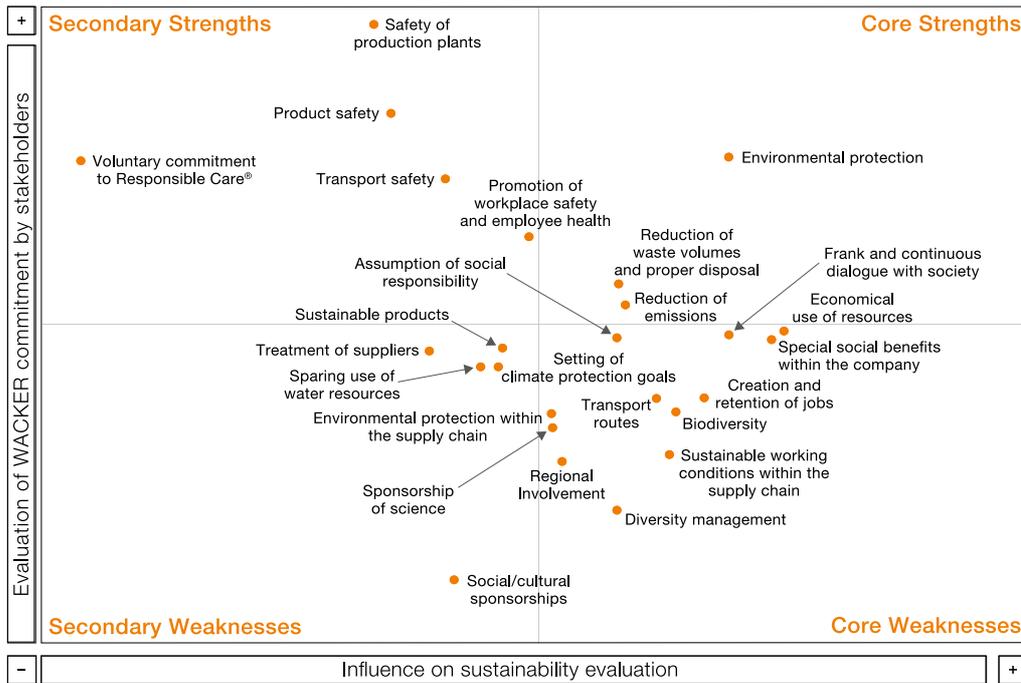
¹ 2014: 224 participants

² 2012: 201 participants

³ 2010: 203 participants

Stakeholders ranked WACKER highly to very highly in the following areas: environmental protection, safety of production facilities, promotion of workplace safety and employee health, as well as product and transport safety. They named the following as future challenges: diversity / equal opportunity, sustainable working conditions within the supply chain, biodiversity, creation and retention of jobs, and regional commitment.

Action Matrix



A key challenge raised in the 2012 and 2014 stakeholder surveys was sustainable working conditions within the supply chain. We have intensified our work on this topic. In January 2015, we joined the “Together for Sustainability” (TfS) initiative. This initiative is based on established principles such as those subscribed to by the UN’s Global Compact and the Responsible Care® sustainability initiative. Together, the TfS members organize supplier evaluations using questionnaire analyses and audits, whereby the suppliers’ sustainability performance is assessed by independent auditing bodies based on criteria tailored to the chemical industry. Aspects that are assessed range from the environment, health and safety, labor and human rights to ethical company management. The audits include on-site checks, particularly in risk regions.

Awards and Prizes

WACKER has supplied customers with high-quality products and outstanding services for many years. Customer satisfaction is the cornerstone of our success and is reflected in the customer awards we have received.

Quality Awards 2013

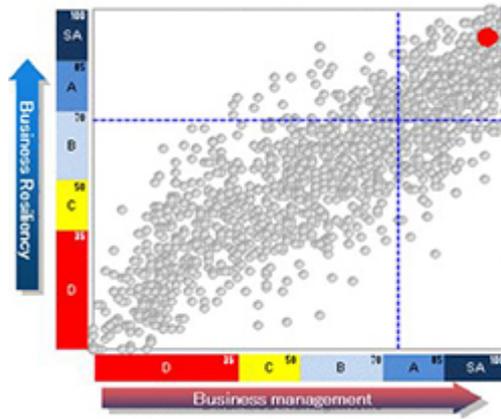
Award	Recipient	Sponsor
Regional Supplier Recognition Award	Siltronic AG	Texas Instruments
PQS Award 2013 – Preferred Quality Supplier	Siltronic AG	Intel
Supplier Award 2013	Siltronic AG	X-Fab Malaysia
Supplier of the Year Award 2013	Siltronic Corporation	Fairchild Semiconductor
Perfect Quality Award 2013	Siltronic Corporation	On Semiconductor
Long-term Partnership Award	Siltronic Corporation	ASMC China
Supplier Award 2013	Siltronic Japan Corporation	Shindengen
Best Supplier Award	Siltronic Singapore	SSMC
Partner-to-Win-Award	Wacker Chemie AG	Unilever
Supplier Award 2013	Wacker Chemie AG	Wrigley
Supplier Recognition Award 2012	Wacker Chemie AG	Procter & Gamble Colombia
Award for 20-year collaboration	WACKER France	Progress Silicones
Award for quality and solution expertise	WACKER Australia	Parchem

Quality Awards 2014

Award	Recipient	Sponsor
PQS Award 2014 – Preferred Quality Supplier	Siltronic AG	Intel
Supplier Excellence Award 2014	Siltronic AG	Texas Instruments
Supplier Award 2014 as Best Global Supplier	Siltronic AG	X-FAB
Best Innovation Contributor 2014, Beauty Care category	Wacker Chemie AG	Henkel
Preferred Supplier for Elastomers and Thermosets	Wacker Chemie AG	Robert Bosch GmbH
Award for VINNAPAS: the dry-mix mortar industry's most effective brand	WACKER Greater China	Chinese Dry-Mix Association
Most Valuable Supplier of the Waterproofing Industry	WACKER Greater China	Chinese Waterproofing Association
2014 BJX Cup CREC Top 10 Photovoltaic Raw Material and Accessory Company	WACKER Greater China	GUANGFU.BJX.COM.CN, CREC Organizing Committee

Very Well-Prepared for an Emergency

Companies want to ensure that their suppliers remain able to deliver even under extreme conditions. The severe earthquake in Japan in 2011 and the subsequent nuclear disaster at Fukushima sensitized the semiconductor industry to this issue, in particular. As a result, Siltronic customers have frequently inspected the division's crisis management over recent years – for example, Fujitsu in 2014. The Japanese electronics giant scrutinized management (emergency plan to maintain delivery capacity, suppliers and communications) and continuity (manufacturing, materials and supplies, utilities, personnel, and IT systems) at the Burghausen, Freiberg and Singapore sites. Conclusion: Fujitsu rates Siltronic well above the average in all individual categories. The result can equally be applied to evaluation by other companies: customers such as Intel, Texas Instruments and Analog Devices use similar rating criteria for this type of supplier evaluation.





Environment

77 Environmental Protection Costs

78 Environmental Protection in
Production

104 Nature Conservation and
Biodiversity

106 Logistics and Transport

Since WACKER acquired the Norwegian site in Holla in 2010, continuous expansion of environmental protection has been on the agenda for the energy-intensive silicon-metal production there. The team has now achieved a considerable reduction in dust emissions.





Environmental Protection

WACKER attaches particular importance to integrated environmental protection. This commences with product development and plant planning. In accordance with the core ideas of the Responsible Care® initiative, our environmental protection measures often go beyond what is legally required. WACKER continuously works on improving its production processes to conserve resources. One of our main tasks is to close material loops and recycle by-products from other areas back into production, enabling us to reduce or prevent emissions and waste.

Environmental Protection Costs

In 2014, WACKER invested €5.1 million in environmental protection (2013: €5.4 million). Environmental operating costs amounted to €88.2 million (2013: €89.4 million). An example of investment in environmental protection is the Nünchritz site, where WACKER invested €2.2 million in a new cooling system for silicone production. This efficient new system consumes less energy and the ammonia content in the refrigerant circuit dropped from 13 metric tons to 360 kilograms.



Operations manager Dr. Uwe Strauch in front of the new cooling system at the Nünchritz site. The system pumps over 100 cubic meters of brine through pipelines across the site every hour in order to cool down various processes involved in the production of silicones.

Environmental Protection Costs

€ million	2014	2013	2012
Operating costs	88.2	89.4	79.3
Investments	5.1	5.4	8.6
Investments in Environmental Protection			
Water pollution control	4.1	2.9	2.4
Waste management	–	–	0.6
Air pollution control	0.8	2.4	5.3
Climate protection	0.2	0.1	0.2
Soil remediation	0.0	0.1	0.1
Nature conservation and landscape management	–	–	–

Environmental Protection in Production

The authorities value our voluntary commitment to environmental protection. In the period under review, our Ulsan site in South Korea, for example, again successfully completed the audits requested by the South Korean Ministry of Environment (MoE), the city of Ulsan and the Nam-Gu district. The audits covered the topics of air, water, waste, hazardous substances and odors.

We have established groupwide environmental protection standards that apply to all production sites and technical centers. The respective site managers monitor legal compliance in environmental issues and adherence to local environmental standards. The Group Coordinator for the Environment checks the implementation of environmental standards in practice at the sites and performs random checks to verify legal compliance.

Environmental Performance Assessment

Since 2004, WACKER has been using a system to assess its sites' environmental performance. This system is used to convert a site's total emissions and resource and energy consumption 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

Since 2011, our environmental performance assessment has included our silicon-metal plant in Holla (Norway), acquired in 2010. The environmental impact of metallurgical production there differs greatly from that of WACKER's typical chemical operations. Airborne emissions, in particular, have risen as a result of the acquisition. As of 2013, environmental performance assessment reporting no longer differentiates between these two areas. 2014 was the first year in which the accounting of key environmental indicators also included consolidated reporting on 300 mm wafer production in Singapore.

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 around 3 percent between 2012 and 2014. In terms of production volumes, we improved by 11 percent relative to 2012. At the Burghausen site, we have lowered the specific environmental units (which are measured against production volumes) by 56 percent over the past ten years.

Environmental Units for Chemical Production Sites

	2014	2013	2012
Environmental units ¹	136,527	130,729	132,740
Gross production volume in 1,000 metric tons	14,972	14,357	13,164
Environmental units per 1,000 metric tons of gross production ²	9.1	9.1	10.1

¹ The method for calculating the total volume of non-methane volatile organic compounds (NMVOCs) emitted by our production facilities was amended in 2014. The data analysis was harmonized and additional substances were taken into account. The Environmental Performance Assessment for preceding years was adjusted.

² The environmental units per 1,000 metric tons of gross production were reported in consolidated form for chemical production and silicon-metal production in Holla, Norway.

Integrated Production

WACKER's integrated production system is its greatest strength. Compared with its competitors, WACKER has the key competitive advantage of highly integrated material loops at its major production sites in Burghausen, Nünchritz and Zhangjiagang. Basically, integrated production involves using the byproducts from one stage as starting materials for making other products. Auxiliaries required for this process, such as silanes, are recycled in a closed loop and we utilize waste heat from one process in other chemical processes. The result is lower specific production costs (costs per net production volume) compared with open production processes. Integrated production allows us to lower energy and resource consumption, use raw materials more efficiently and, at the same time, integrate environmental protection measures into production processes. Through our integrated production sites, we create synergies in the supply of raw materials and energy.

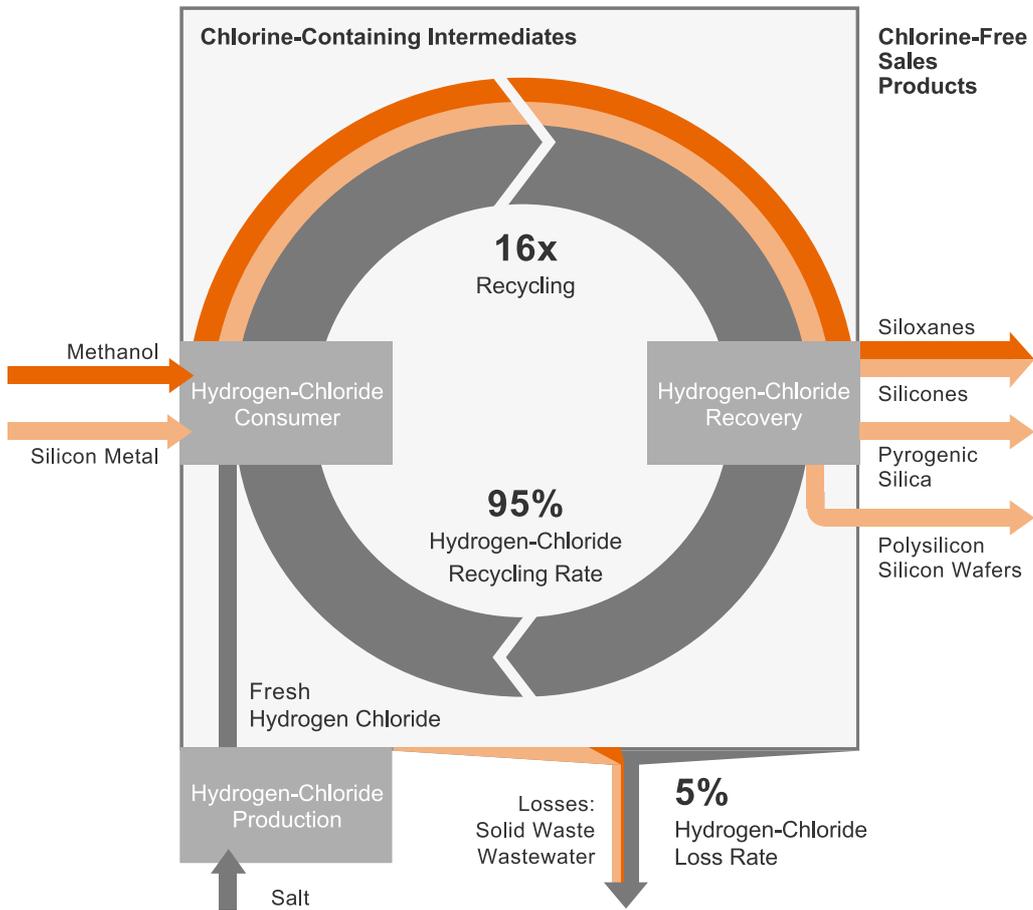
Our integrated production system is primarily based on salt, silicon and ethylene as starting materials. In our integrated processes, we optimize material efficiency by purifying byproducts and reusing them or making them available for external use. Examples:

- 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 hyperpure silicon or pyrogenic silica). We then return the recovered hydrogen chloride to the production loop and reuse it. This closed material loop reduces emissions and, due to lower raw-material consumption, shipment journeys.

For over 12 years, we have been using a chlor-alkali membrane process to supply chlorine, hydrogen, caustic soda and hydrogen chloride as starting materials to our Burghausen site. Since 2000, 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 well ahead of schedule.

Integrated Hydrogen Chloride System



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

- We recycle 94.6 percent (2013: 94.1 percent) of the hydrogen chloride that we use in the production loops at our Burghausen and Nünchritz sites.
- In 2014, our integrated production system in Burghausen prevented the emission of 883,968 metric tons of CO₂ equivalents (2013: 867,625 metric tons). Due to this high reutilization rate, less fresh hydrogen chloride needs to be generated and, consequently, there are savings in the transportation of raw materials and in energy consumption.
- 49 percent of the heat used by Burghausen stems from the site's integrated heat-utilization system (2013: 45 percent).
- 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 13,800 metric tons per year compared with 2012.

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

Excellent Sustainability Work in China

Work on our Chinese integrated production sites in Nanjing and Zhangjiagang complies with groupwide environmental, health and safety (EH&S) standards. In our state-of-the-art manufacturing processes, we use raw materials efficiently and attempt to procure them locally to the greatest possible degree. When building these plants, we took account of energy-saving design and cutting-edge environmental-protection technology. Integrated production plays an important role in helping to reduce emissions and to manage logistics and transportation efficiently.



Michel Houmard, vice president of Operations at WACKER Greater China, holding the Responsible Care® Best Facilitator Award 2014.

The China Petroleum Chemical Industry Federation honored this commitment and presented WACKER Greater China with the Responsible Care® Best Facilitator Award 2014, the Energy Saving and Emission Reduction Award 2014 and the Responsible Care® Award 2013. WACKER Greater China also received the Responsible Care® Chairman's Award 2013 from the Association of International Chemical Manufacturers and an award for environmental protection and safety from the Nanjing Chemical Industry Park in 2013.

Energy

Energy Targets: Lowering Specific Energy Consumption by 2022



The chemical industry is one of the most energy-intensive sectors. In Germany alone, it uses around 20 percent of all the electricity consumed by industry. WACKER is therefore also continually improving the energy efficiency of its processes. This enables us to remain globally competitive and to support climate protection. Many chemical reactions generate heat that can be put to use in other production processes. We have been using integrated heat-recovery systems in Burghausen and Nünchritz for years and are continually improving them. In this way, we can reduce the amount of primary energy (as a rule, natural gas) that our power plants consume.

To further improve energy efficiency and reduce specific energy consumption (amount of energy per unit of net production output), the Executive Board has defined energy targets for WACKER Germany. The goal is to reduce weighted specific energy consumption by a third between 2007 and 2022.

Our energy goals ensure that we meet one of the requirements of the energy management system as per ISO 50001, which we have introduced and certified at all sites of Wacker Chemie AG, Siltronic AG and Alzwerke GmbH in Germany. Since 2014, we have thus already been in full compliance with the legal obligation to have an energy management system in place by 2015.

Bavarian Energy Award

In 2014, Wacker Chemie AG received the Bavarian government's Energy Award, which was conferred in recognition of the Group's highly efficient polysilicon manufacturing operations. Thanks to patented technology advancements and process optimizations, we lowered our specific energy consumption for polysilicon production by 29 percent.

Hyperpure polysilicon is the main raw material for making solar modules and, consequently, plays a vital role in generating solar power. The Bavarian Energy Award is conferred every two years for outstanding innovations in responsible energy management.



Bavaria's state secretary for economic affairs Franz Josef Pschierer (right) handed over the 2014 Bavarian Energy Award to Ewald Schindlbeck, head of WACKER POLYSILICON (left), as well as to Werner Klenk and Claus Burkhardt of energy technology company Burkhardt GmbH (second and third from left). The Munich-based WACKER Group received the award for its highly efficient polysilicon production (photo: Bayern Innovativ).

Generating Energy Efficiently

Burghausen uses hydroelectric power to generate electricity. Our Norwegian site, Holla, too, generates its electricity from water power. Our primary source of energy is climate-friendly natural gas.

At WACKER's large Burghausen and Nünchritz sites, we produce steam and electricity in cogeneration systems. In Burghausen, we operate a highly efficient combined heat and power (CHP) plant to cover the site's electricity and steam needs. It has a fuel efficiency of around 85 percent. The CHP plant represents a technology that bridges the gap to renewable energy systems, since it contributes to CO₂ savings, unlike uncoupled electricity and steam generation. Its capacity makes it a so-called systemic facility that contributes to stabilizing the public grid.

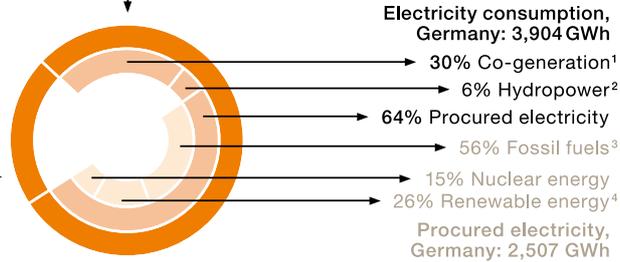
These combined heat and power (CHP) plants have more than 80-percent fuel efficiency, which is significantly higher than that of conventional plants, where electricity and heat are generated separately.

Electricity Supply

Group electricity consumption: 4,927 GWh

Consumption in Germany: 79%

Consumption abroad⁵ 21%



¹ Burghausen and Nünchritz

² Burghausen

³ Coal, lignite, oil, gas

⁴ Hydro, wind, solar power

⁵ Outside Germany, we purchase electricity from third parties based on the local standard energy mix.

In 2014, absolute electricity consumption rose slightly to 4,927 GWh (2013: 4,526 GWh), while energy efficiency measures served to lower specific energy consumption. This was due to the consistently high utilization of our polysilicon production capacity throughout the year. The Group's power plants – the hydroelectric and CHP (gas and steam turbine) generating stations in Burghausen and the CHP plant in Nünchritz – produced around 1,405 GWh in 2014 (2013: 1,457 GWh). This means that WACKER covered almost 30 percent of its total electricity needs itself.

WACKER's German production sites accounted for 79 percent (2013: 78 percent) of groupwide electricity needs. In Germany, we purchased enough electricity from utilities to cover 64 percent of our electricity requirements there (2013: 59 percent). In line with Germany's energy mix, 56 percent of this electricity was generated from fossil fuels (2013: 51 percent). 15 percent came from nuclear energy (2013: 18 percent) and 26 percent from renewable energy sources (2013: 31 percent). Heat consumption, which includes the use of solid fossil and biogenic fuels (coal, charcoal and wood) in silicon-metal production in Holla, Norway, fell by 4 percent to 3,572 GWh (2013: 3,724 GWh). We changed the way we calculate the power-generation mix. Since 2014, our data is based on Germany's energy mix as per the German Association of Energy and Water Industries (BDEW).

Consumption of natural gas decreased in 2013 due to the planned shutdown of a gas turbine at the Burghausen site. It sank further in 2014, in particular because of declining steam demand and lower hydrogen production compared with the previous year.

Energy Consumption

GWh	2014	2013	2012
Electricity consumption	4,927	4,526	4,559
Heat consumption	3,572	3,724	3,755
Primary energy			
Total	6,081	6,176	7,030
Of which			
Natural gas	4,978	5,051	5,927
Solid fuels ¹ (coal, charcoal and wood)	839	872	862
Heat supplied by third parties (steam and district heating)	244	236	223
Fuel oil	20	17	18

¹ Used as a reducing agent at the silicon-metal plant in Holla, Norway

Hydroelectric Power

The Burghausen site has been supplied with electricity from Wacker Chemie AG's "Alzwerke" hydroelectric facility for over 90 years. From December 1922 to December 2014, this power station generated 22,782 GWh of electricity. Average annual production is currently at 266.1 GWh.

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 nine decades, the hydroelectric facility has continuously increased its energy yield and annual availability.



The Alzwerke power station has been supplying the Burghausen site with hydroelectric power since 1922.

In 2014, our Nünchritz site specifically required around 91 percent less process steam from its CHP plant to manufacture one metric ton of product than it did in 1999, when WACKER acquired the site. Specific CO₂ emissions developed accordingly.



Saving Energy with WOS

In 2014, we again improved our energy efficiency with the help of projects that form part of our WOS (Wacker Operating System) program. At our Burghausen site, for example, we feed cooling water that has been preheated in a compressor to the demineralization facility, saving steam and natural gas in the manufacture of deionized water. By reducing the pressure of the cooling water at our Nünchritz site, we have achieved electricity savings of over 15 percent.



Air

The Group's corporate carbon footprint report is an important tool for improving climate protection. After determining our indirect greenhouse gas emissions from bought-in energy (as per Greenhouse Gas Protocol Scope 2) for the first time in 2011, we have also been measuring our Scope 3 emissions since 2012. These include emissions generated along the supply chain, e.g. by suppliers or through waste disposal and the transportation of products.

Groupwide, carbon dioxide emissions that result from captive power plants subject to emissions trading rules and from silicon-metal production in Holla, Norway, totaled about 1.09 million metric tons in 2014 (2013: 1.08 million metric tons). WACKER is subject to European emissions trading at its Burghausen and Nünchritz CHP plants. Procurement of emission allowances has been included in energy procurement planning since 2013. Having achieved a surplus in the second trading period (2008 through 2012), we did not have to purchase additional emission allowances for 2013. Based on a shortfall in 2014, we bought emission allowances for the facilities we own and operate and that are subject to emissions trading rules.

In the 2014 fiscal year, we once again forwarded our emissions data to the [Carbon Disclosure Project](#) (CDP), which WACKER joined in 2007. Founded in London in 2000, CDP is a non-profit organization working to achieve greater transparency in greenhouse gas emissions.

In 2014, WACKER was listed for the first time in the Carbon Disclosure Leadership Index (CDLI) for the German-speaking region (Germany, Austria, Switzerland and South Tyrol), having achieved a score of 95 B. We thus outperformed our peer group in the MDAX in this respect. Since 2013, with a result of 86 B, we have defined our CO₂-reduction target and expanded our reporting on opportunities, risks and indirect emissions from the supply chain (Scope 3).

Since the fall of 2013, we have been participants in the myccf project of [co₂ncept plus](#) (German-language website) – a German association of businesses with interests in emissions trading and climate protection issues. In this project, which is supported by the German Federal Environmental Foundation (DBU), we are developing our corporate carbon footprint (CCF) further. We want to expand our reporting on indirect emissions generated along the supply chain (Scope 3).

WACKER performed well in an assessment by rating agency [oekom research AG](#) with an overall grade of B-. oekom's rating methodology classifies WACKER as "Prime."

Direct Emissions

Based on carbon dioxide equivalents, carbon dioxide (CO₂) makes up approximately 98 percent of WACKER's direct greenhouse gas emissions. The remainder is made up of nitrous oxide, methane, fluorocarbons and other greenhouse gases. These also include nitrogen trifluoride, which we determined groupwide for the first time in 2014. We looked at methane emissions from combustion processes in detail in 2014, too. With the aid of an emission factor specified by the authorities, we accounted for additional methane



emissions from our combustion processes and corrected them as far back as 2012. Over the coming years, we will compare the emission factors with actual methane emission measurements.

In 2013, we optimized the processes of the Burghausen site's gas turbine during a scheduled shutdown. Due to the facility's extended availability in 2014 and an increase in electricity production at the Burghausen power plant, direct carbon dioxide emissions rose. At the Nünchritz site, we were able to save on direct carbon dioxide emissions by optimizing the integrated production system. As a result, significantly less steam had to be generated from primary energy sources. Overall, this brings the direct carbon dioxide emissions in 2014 to the same level as in 2013. The rise in direct nitrous oxide (N₂O) emissions between 2012 and 2014 is due to increased production at the Portland site and consolidated reporting at the Singapore site, which was implemented in 2014.

Air Emissions

	2014	2013	2012
CO₂ carbon dioxide¹			
Direct (kt)	1,251	1,253	1,311
Indirect (kt)	1,420	1,241	1,133
Other greenhouse gases			
CH ₄ methane (t) ²	81	82	85
N ₂ O nitrous oxide (t)	64	43	34
HFC hydrofluorocarbons (t)	6	7	5
PFC perfluorocarbons (t)	0.059	0.059	0.059
NF ₃ nitrogen trifluoride (t) ³	0.008	–	–
SF ₆ sulfur hexafluoride (t)	0.000	0.002	0.011

¹ 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 energy). In accordance with the recommendations of the GHG Protocol, Wacker Chemie AG's direct and indirect emissions were recalculated retroactively due to amendments to the system boundaries, starting from the reference year (2012) for the CO₂ target. In addition to the Group's direct CO₂ emissions, sites' intra-plant traffic emissions were also taken into account for sustainability reporting.

² Methane emissions from our combustion processes were first accounted for in 2014 using an emission factor specified by the authorities and corrected as far back as 2012.

³ Nitrogen trifluoride was determined groupwide for the first time in 2014.



Greenhouse Gas Emissions

kt CO ₂ e ¹	GWP factor ²	2014	2013	2012
CO ₂ carbon dioxide ³	1	1,251.08	1,252.58	1,311.48
CH ₄ methane ⁴	25	2.03	2.05	2.13
N ₂ O nitrous oxide	298	19.00	12.81	10.07
HFC hydrofluorocarbons	1,430	8.54	10.01	7.44
PFC perfluorocarbons	9,800	0.58	0.58	0.58
NF ₃ nitrogen trifluoride ⁵	17,200	0.14	–	–
SF ₆ sulfur hexafluoride	22,800	0.00	0.05	0.26

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. 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 addition to the Group's direct CO₂ emissions, sites' intra-plant traffic emissions were also taken into account for sustainability reporting.

⁴ Methane emissions from our combustion processes were first accounted for in 2014 using an emission factor specified by the authorities and corrected as far back as 2012.

⁵ Nitrogen trifluoride was recorded groupwide for the first time in 2014.

Emission of Air Pollutants

We made considerable progress in the emission of nitrogen oxides in 2013 and 2014 by optimizing the integrated heat-utilization system at the Burghausen site. Despite increased electricity generation and extended availability of the Burghausen gas turbine in 2014, direct nitrogen oxide emissions fell by 12 percent compared to 2012. We used measurements and calculations at Burghausen to show that exposure to NO_x/NH₃ emissions in the site's surroundings, on average, is in line with typical background concentrations. Overall nitrogen deposition is within the limits for maximum background levels in rural areas.

In the evaluation of total emissions of non-methane volatile organic compounds (NMVOCs), we amended our assessment methodology in 2014. This was triggered by the construction of a new WACKER POLYMERS dispersible polymer powder plant in Burghausen. We have retroactively corrected the emissions data from our spray dryers in Burghausen, Calvert City and Nanjing in accordance with the new method. The 2014 rise in values is due to production increases.

The Air Is Cleaner

Since WACKER acquired the Norwegian site in Holla in 2010, continuous expansion of environmental protection has been on the agenda for the energy-intensive silicon-metal production there. The team has now optimized the maintenance of equipment that removes dust from silicon metal production. These measures have significantly reduced emissions.

At the Holla site, the coordination between mechanical and electrical servicing of separation equipment and the accompanying systematic equipment maintenance has been completely revised. The result is enhanced and reliable maintenance of dust removal. At the same time, the equipment availability has been increased beyond what is required.

The measures have led to significantly reduced emissions. At a production capacity of 82,844 metric tons, 560 metric tons of dust were emitted in 2013. In 2014, at an increased production capacity of 84,580 metric tons, the dust emissions were down to 384 metric tons.



There from the start – when the silicon-metal site in Holla, Norway, was integrated into the WACKER Group in 2010: (from left to right) Einar Olav Schei, Torbjørn Halland and Silje Lian Gridsvåg.



Air Pollutant Emissions

t	2014	2013	2012
NO _x nitrogen oxides ¹ (t)	1,960	2,010	2,225
NMVOC non-methane ² volatile organic compounds (t)	830	750	720
CO carbon monoxide (t) ³	347	346	351
Dust (t) ⁴	408	588	591
Particulate matter (t) ⁵	349	499	500

¹ Corrected NO_x emissions for 2013 for the Holla site, since exact figures did not become available until later.

² The method for calculating the total volume of non-methane volatile organic compounds (NMVOCs) emitted by our production facilities was amended in 2014. We harmonized the data analysis, took additional substances into account and adjusted the prior-year figures on the basis of the new methodology. The rise from 2013 to 2014 was due to production increases.

³ Groupwide CO₂ emissions were corrected based on the more precise data records for 2012.

⁴ Here, dust refers to total dust. Total dust is suspended dust, which is considered to include all solid and liquid particles in outside air that do not sink to the ground immediately, but rather remain in the atmosphere for a certain period of time. Groupwide dust emissions were corrected based on the more precise data records for 2012.

⁵ Here, particulate matter refers to PM10 (particulate matter 10 µm, e.g. particulates that pass through a size-selective air inlet of 10 µm in aerodynamic diameter). Particulate matter is a subset of dust (total dust). Groupwide particulate matter emissions were corrected based on the more precise data records for 2012.

Indirect Emissions

Our indirect CO₂ emissions from procured energy (as per Greenhouse Gas Protocol Scope 2) rose to 1,420,000 metric tons in 2014 (2013: 1,241,000 metric tons). This was due to increased production volumes, particularly of polysilicon at the Burghausen and Nünchritz sites. We used energy-efficiency measures to reduce weighted specific energy consumption and the associated specific CO₂ emissions – while maintaining a comparable product portfolio.

The rise in Scope 2 emissions in 2013 was caused not only by increased production capacity for polysilicon at the Nünchritz site, but also by a shift from Scope 1 to Scope 2 emissions due to the planned shutdown of a gas turbine at the Burghausen site. One-fourth of the increase is caused by the annual update of regional emission factors used in calculating greenhouse gas emissions.

Sustainable Mobility Strategy

When it comes to climate protection, production is not the only factor – our employees' carbon footprint is also significant. We encourage them to leave their cars at home. We provide commuter buses for shift workers at Burghausen, our largest site. Together with nine bus companies, we have set up some 56 bus routes within a 50-km radius. Some 3,500 people use our shuttle service every day. 5,000 of our Burghausen employees have annual tickets.

At our Burghausen site, we maintain a fleet of around 6,000 bicycles and offer our employees charging facilities for their e-bikes. Our Nünchritz site has a fleet of 950 bicycles.



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). We have tightened the CO₂ emissions limits for our company cars to a maximum of 110 to 175 g/km. Our fleet average is 139 g/km. At an annual average of 30,000 km traveled per car, we lowered CO₂ emissions by almost 8 percent in the period under review, relative to 2012. We replaced all the older models by 2014 and thus reduced the vehicle fleet’s annual CO₂ emissions by more than 16 percent compared with 2010.

WACKER offers frequent travelers and employees who use company cars the opportunity of participating in safety and eco training. WACKER organizes safety weeks at its sites at regular intervals; sustainable mobility topics are covered there. We are looking at incentive systems that will motivate managerial employees even more to switch to environmentally friendly vehicles with alternative drives.

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, which we tested as a pilot project in the period under review. WACKER also provides employees with German Rail “Bahncards.”

In Burghausen, a shuttle bus picks up employees arriving from Munich at the train station and transports them to various destinations on site. Since 2012, a zero-emission shuttle bus for visitors has been used on the site. Electric vehicles have been part of our pool fleet since 2013. When we choose contracting companies for passenger transport, we ask what type of vehicles the bidders use and assess their safety and environmental impact.

During the period under review, we tested hydrogen-powered vehicles, but decided that electric vehicles are more suitable for us. The electric drive does not generate exhaust gases, is quiet and has low operating and maintenance costs, as it requires less servicing. A hydrogen-driven industrial truck currently costs 300 percent more than an electric vehicle. Added to this would be high costs for the necessary infrastructure measures.

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

In China, we offer shuttle buses from residential areas to our sites in Nanjing, Shanghai and Zhangjiagang. Siltronic’s US site at Portland (Oregon) provides incentives – such as subsidized public transportation – to encourage employees to commute in an environmentally aware fashion. In Singapore, Siltronic has arranged for shuttle buses to travel from the site to various parts of the city. Employees at Siltronic in Japan have two days a month when, rather than driving their own car, they walk, bike, car-share or use public transport to get to work.



Water

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 through loops in our production. We make sure that this multiple use does not increase energy consumption or otherwise negatively impact the environment.

Water Consumption Tested Using the Global Water Tool[®]

In many parts of the world, clean water is particularly scarce, and obtaining and purifying water is very expensive. As a globally-active company, we take such conditions into account in our production processes and during transport. We use the Global Water Tool[®] (GWT) developed by the World Business Council for Sustainable Development (WBCSD) to analyze the annual relative water stress index of the countries in which our main global production sites are located.

This analysis was conducted for the first time in 2012, based on analyses using the water stress index developed by the Water Systems Analysis Group of the University of New Hampshire, USA. This index provides information on the relationship between water consumption and the availability of renewable fresh water. The outcome of the analysis is that our most important production sites are located in regions with a low relative water stress index. These regions account for more than 97 percent of our annual water use and over 90 percent of our production volume. Production sites in countries for which no GWT-based water stress index information is available account for less than 0.5 percent of our water consumption.

“Save Wastewater and Make a Profit” was the title of a special Employee Suggestion Program initiative launched in December 2014 at the Nünchritz site. The purpose of the initiative is to encourage employees to develop ideas for conserving and recycling water in production. The campaign ran until June 30, 2015 and is currently being evaluated. In 2014, a similar campaign took place at the Burghausen site, where employees submitted 72 improvement suggestions, e.g. for wastewater treatment.

The process water used at Nünchritz comes from on-site wells (2014: 4,230,971 m³; 2013: 4,123,612 m³). Drinking water accounts for less than 1 percent of our total water consumption at this site. In 2014, we reduced the water consumption at Nünchritz with the help of a project that forms part of our WOS (Wacker Operating System) program. We now use the water we need for waste-gas purification at the incinerator twice, allowing us to considerably reduce the amount of wastewater.

The town of Freiberg is connected to a highly branched, man-made water ditch system. Our Siltronic site there uses surface water, which is carried to the site by such a ditch, to cool the crystal pulling facilities. We also purify the surface water into hyperpure water for wafer production.

By modifying production processes and re-using materials, the Siltronic division has reduced its use of chemicals, e.g. in wafer cleaning tanks. We reuse water several times over, wherever the purity requirements for wafer manufacturing permit. This has allowed us to reduce specific consumption of demineralized (deionized) water by around 35 percent



in Burghausen since 2005 and also around 35 percent in Portland since 1996 without compromising on quality. We monitor the use of ultrapure water in wafer production, where Siltronic achieves a water-recycling rate of up to 45 percent.

Lower exterior temperatures and plant-capacity utilization in 2013 resulted in reduced cooling-water use at Burghausen. In 2014, cooling-water use returned to the 2012 level, due to production increases at a Burghausen facility.

Groupwide, organic emissions to wastewater – specified as chemical oxygen demand (COD) – fell in 2014. We closed the Burghausen acetaldehyde plant in late 2012; this has significantly lowered the COD and emissions of halogenated organic compounds (AOX) to water. At the Nünchritz site, we implemented optimization measures for wastewater treatment in 2014, which reduced the COD load.

In 2014, WACKER POLYMERS' VAE (vinyl acetate-ethylene dispersions) plant in Burghausen lowered its specific wastewater load by 5 percent by implementing new flushing options for filtration systems. This is equivalent to a COD-load reduction of some 126 metric tons and an AOX-load reduction of 10.2 metric tons. WACKER SILICONES started up a plant for decentrally pretreating wastewater in Burghausen in 2014. This plant uses the Fentox[®] process to remove highly diluted silicone constituents from the wastewater generated in the production of silicone emulsions.

Water Consumption / Emissions to Water

	2014	2013	2012
Water consumption (1,000 m ³)	241,973	220,908	242,072
Cooling water volume (1,000 m ³)	223,647	197,681	225,391
Wastewater volume (1,000 m ³)	21,140	18,995	19,569
COD (chemical oxygen demand) (t)	1,230	1,320	1,460
AO _x (adsorbable organic halides) (t)	2	2	3
Heavy metals (t)	1.3	1.1	1.2
Nitrogen (t) ¹	533	451	414
Phosphorus (t)	7.8	6.0	7.0

¹ The value for NO_x emissions for 2012 has been corrected, since exact figures for the Cologne site did not become available until later.

Fewer Emissions to Water

At our Burghausen site, we have significantly reduced the amount of harmful emissions to the Salzach river over the past five years. In 2012, we shut down our acetaldehyde and acetic acid production plant. The shutdown reduced organic pollution (COD, chemical oxygen demand) in the multistage biological wastewater treatment plant by 30 percent. The site's wastewater volumes remained unchanged. In 2013, we switched the biological wastewater treatment plant's first bio-stage from double-tank to single-tank mode on a trial basis. We made this successful mode of operation permanent in 2014.

Furthermore, in spring 2013, we put an intermediary wastewater storage tank into operation. We use it to collect peak pollutant loads from specific facilities so that they can be fed into the biological wastewater treatment system in a controlled manner during phases of low influent from production. This makes the supply more consistent and leads to more stable operation of the biological wastewater treatment plant. Compared to 2010, emissions of organic pollutants to the Salzach river have decreased by 39 percent.

Since the acetaldehyde plant's shutdown, emissions of halogenated hydrocarbons (AOX) have fallen by 66 percent relative to 2010. The consistently low mass flows of readily degradable organic substances (BOD₅, biological oxygen demand) over the past two years are the result of stable operation and have decreased by 16 percent since 2010.

Thanks to these measures, we are also preventing sludge (biomass from the biological wastewater treatment plant) from overflowing into the Salzach river. Furthermore, several facilities were able to reduce their emissions of the heavy metals, iron, copper and zinc to the Salzach by around 50 percent.



Organically polluted wastewater is purified in the first bio-stage of the wastewater treatment system at the Burghausen site.

Soil and Groundwater

Like many other long-standing chemical companies, WACKER has some soil contamination on its site premises. 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 2014, we had removed a total of 1,995 metric tons of chlorinated hydrocarbons (CHCs); the amount of contaminants removed in 2014 was 22 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 2014, 29 metric tons of CHCs had been removed; pollutant concentrations have 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, 86 kilograms of the pollutants are being removed per year. The results of our fish contaminant survey at Burghausen indicate that fish from the Salzach river are quite safe to eat.

Additionally, there is some groundwater contamination at our Nünchritz site. This predates WACKER's takeover of the site. We have been cleaning up the groundwater there since 2009 and have been using a hydraulic process since 2013. In 2012 and 2013, we cleaned some 110,000 cubic meters of groundwater there. The project was a temporary measure that ended on schedule in 2013. We are now analyzing the results and will commence further remediation measures from 2018 on.

Siltronic's Portland site in Oregon, USA, has developed a method of biodegrading trichloroethylene (TCE) residues in groundwater by means of microorganisms. With this method, which has been approved by the Oregon Department of Environmental Quality (ODEQ), we almost completely eliminate trichloroethylene from groundwater and thus achieve drinking water quality. The US Environmental Protection Agency (EPA) has recognized our biological method of degrading chlorinated volatile organic compounds (CVOCs) with which we eliminate 90+ percent of these substances.

Waste

Recycled Waste



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.”

Due to higher production volumes, our waste has increased by 10 percent in the period under review. Additional capacity utilization at the Nünchritz site resulted in more filter and sewage sludge. Expansion measures there led to increased disposal of construction waste in 2013. In Burghausen, we recovered more energy from chlorosilane by residue incineration; we provided the cement industry with the resulting silica for further use. The causes for the waste increase in 2014 are consolidated reporting for the Singapore site and the Calvert City site expansion, where large amounts of construction waste were generated, too.

Waste

t	2014	2013	2012
Total	158,200	142,060	136,800
Of which			
Disposed of	49,260	31,560	39,920
Recycled	108,940	110,500	96,880
Or			
Hazardous	75,630	73,380	73,620
Non-hazardous	82,570	68,680	63,180

Waste-Reduction Projects

During the 2013/2014 reporting period, we also reduced waste with the help of projects that form part of our WOS (Wacker Operating System) program. One example is the recycling of acetic acid at WACKER POLYMERS. We operate a thin-film evaporator in Burghausen to recover acetic acid from the liquid residues of the VAM (vinyl acetate monomer) plant for complete recycling in the VAM process. This has enabled us to reduce the VAM plant's solvent waste by approximately 15 percent.

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.

At Siltronic in Portland, we have developed a recycling process for cutting slurry, which the Siltronic production sites in Burghausen, Freiberg and Singapore use, too. Cutting slurry is added in the wire-sawing of wafers in order to ensure clean processing. It consists of a cutting fluid and silicon carbide as the cutting material. For recycling purposes, we collect used cutting slurry for external recovery companies that separate liquid and solids. The recycling companies recover 85 to 100 percent of our cutting fluid, which is then used in Siltronic production again. The recycling rate for silicon carbide is 75 percent. Any solids that Siltronic cannot use find application as blast furnace aggregates in steel smelting, for example.

Packaging and Transport

WACKER is keen to minimize the environmental impact of its packaging materials. For instance, the Siltronic division prefers reusable packaging such as the Hybox. We ship our 300 mm wafers in this type of reusable container, which is designed for transportation in hygienically sensitive areas. The Hybox has 30 percent less volume than cardboard packaging. Since the introduction of the Hybox in 2006, we have shipped 64,000 of them from the Burghausen and Freiberg sites. Thanks to this reusable design, we avoided a total of around 2,300 metric tons of waste from 2006 to 2014.



The Hybox protects 300 mm wafers during shipment. Thanks to the reusable system, 610 metric tons of packaging material were saved in 2014 alone (439 metric tons in 2013).

Proper Disposal of Neighbors' Hazardous Waste

WACKER held its 17th "Household Hazardous Waste Day" for neighbors of its Adrian site in Michigan (USA) in 2014. On this day, neighbors from Lenawee county can bring in any chemical household products that are not allowed in trash cans, like (latex) paints, flammable liquids, waste oil, antifreeze, insect repellents, spray cans, alkaline and mercury batteries, fluorescent tubes and incandescent lamps. Held since 1997, this campaign run by employee volunteers has resulted in the collection and proper disposal of some 166 metric tons of hazardous waste at Adrian.



Adrian site employees regularly invite their neighbors to bring in their hazardous waste for recycling.

Dialogue and Awards

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 Zhangjiagang in China. Our Burghausen, Freiberg and Nünchritz sites publish annual environmental reports (available in German only) containing environmental-protection and safety-related facts and figures. WACKER Greater China published a report (available in Chinese only) on its sustainability work in 2013/2014.

[Environmental Report Burghausen 2013](#)

[Environmental Report Freiberg 2013](#)

[Environmental Report Nünchritz 2013](#)

[Environmental Report Nünchritz 2014](#)

[WACKER Greater China Sustainability Work](#)

WACKER has been a member of the Bavarian Environmental Pact since it was founded in 1995. From 2010 to 2015, this Pact has been operating under the slogan “Sustainable growth balanced by environmental and climate protection.” The Environmental Pact is an agreement between the Bavarian government and Bavarian industry, in which both parties have declared their belief that natural resources can be better protected through voluntary, responsible cooperation between industry and state rather than by laws and regulations alone. The Pact serves as a catalyst to promote climate protection and energy conservation, sustainable mobility, environmental engineering and resource efficiency. Its primary aims are to strengthen companies’ individual responsibility and avoid environmental pollution.

Environmental Awards

Environmental protection is a core component of all processes at WACKER. Our commitment is reflected in the awards we’ve received from authorities and organizations as well as customers.

Environmental Awards 2013

Award	Recipient	Sponsor
Wildlife at Work SM Certificate Recertification 2013	Wacker Chemical Corp.	The Wildlife Habitat Council
Responsible Care [®] Chairman's Award 2013	WACKER Greater China	Association of International Chemical Manufacturers
Responsible Care [®] Award 2013	WACKER Greater China	China Petroleum Chemical Industry Federation
Award for environmental protection and safety at the Nanjing site 2013	WACKER Greater China	Nanjing Chemical Industry Park
Clean Production Company 2013	WACKER Greater China	Zhangjiagang Environmental Protection Bureau
EHS Award 2013	WACKER Korea	South Korean Ministry of Trade, Industry and Energy
Pollution Control Award 2013	Siltronic Corporation	Environmental Services City of Portland

Environmental Awards 2014

Award	Recipient	Sponsor
2014 Bavarian Energy Award	Wacker Chemie AG	Bavarian government
Best Supplier Sustainability 2014	Wacker Chemie AG	Avery Dennison
Responsible Care [®] Performance Award 2014	Wacker Chemical Corp.	American Chemistry Council
Energy Saving and Emission Reduction Award 2014	WACKER Greater China	China Petroleum Chemical Industry Federation
Responsible Care [®] Best Facilitator Award 2014	WACKER Greater China	China Petroleum Chemical Industry Federation
EHS Award 2014	WACKER Korea	Korea International Trade Association

Sustainable Cooperation

WACKER's customer Avery Dennison uses silicone products as release agents, e.g. for labels with industrial and medical applications. Two examples of applications are labels for packaging and high-quality medical adhesive plasters.

WACKER received the "Avery Dennison Best Supplier Sustainability Award 2014" for a joint project with Munksjö on reducing the use of platinum in formulations of the DEHESIVE® silicone product range. The award ceremony was held in Oegstgeest in the Netherlands, where the customer has its European headquarters.



Excellent collaboration: (from left to right) Pascal Braker (Avery Dennison, commodity leader for chemicals, Europe), Angelo Depietri (Avery Dennison, vice president of the materials group, Europe), WACKER Executive Board member Auguste Willems, Sjaak Elmendorp (Avery Dennison, vice president for innovations), Laurent Morineaux (head of the Care & Coatings business team for EMEA) and Arjan de Rek (global key account manager at Performance Silicones).

Nature Conservation and Biodiversity

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 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. Take the expansion of our polysilicon production facilities at Burghausen and Nünchritz, for example. We replaced every tree felled during construction of the new polysilicon production facility on the 1.3-km² Nünchritz site with a native species. In the Seusslitzer Grund Nature Reserve, a five-hectare area has been reforested with oak, beech and linden trees.

Covering 232 hectares (about the same size as Munich's historic downtown district), our Burghausen site borders a Natura 2000 nature reserve alongside the Salzach river. To check whether the operation of our facilities has any effect on this reserve, we regularly monitor our air pollution levels. In this regard, we had an external consultant compile an environmental-exposure register for the site. The results show that emissions into the atmosphere at the site do not significantly impact the nature reserve.

A group of employees at our US site in Adrian (Michigan) has set up nesting boxes for various species of bird and maintains a 2.4-km nature trail. The 97-hectare site premises also feature wildflower and butterfly gardens. An almost 81-hectare outdoor area has been certified for the conservation of wildlife. The employees are dedicated to nature and wildlife conservation and concentrate on themed groups – including insects and bats. For its dedication, the Adrian team was once again awarded the US Wildlife Habitat Council's Wildlife at WorkSM certificate in the period under review.

Natural Habitat by the Creek in Charleston

We have created three wetland mitigation areas at our new US site in Charleston, Tennessee, and re-naturalized an existing stream. We planted approximately 800 trees along a 490-meter stretch of the South Mouse Creek bank and stabilized the stream bank by planting a further 1,320 new trees adjacent to it. The diverse range of newly planted trees includes American witch hazel, river birch, sycamore, eastern redbud, black cherry, black walnut and tulip trees, which are all native to Tennessee. With this project, we have helped to maintain the natural habitat on the stream bank and filter the water naturally.



Hugh Flack (left), Bryan Alexander and Sharon Nicholson are dedicated members of the Wildlife Habitat team that looks after the flora and fauna at the US site in Adrian.



The re-naturalization work along the South Mouse Creek offers numerous animal and plant species a natural habitat at the Charleston site.

Logistics and Transport

We constantly strive to improve our processes in order to optimize logistics chains and minimize shipment journeys or avoid unnecessary ones. Our Logistics department uses a simulation system to help us analyze the flow of goods. We can use this system to calculate carbon dioxide emissions and determine the potential for optimizing transport routes and vehicle capacity utilization. We use electronic systems to organize in-plant transportation such that routes are short and wasted empty space is avoided. As well as checking carbon dioxide levels, we monitor noise emissions from the vehicles we use for our shipments.

To monitor our journeys, we also follow the “guidelines for determining the carbon dioxide emissions associated with logistics operations” (German language only) issued by the [German Chemical Industry Association \(VCI\)](#). 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. Since 1999, WACKER’s 600-meter long container train has traveled every day from Burghausen to the ports in Bremerhaven and Hamburg. In Burghausen, we now transport more than 95 percent of container shipments by rail, which means that almost 12,000 freight containers a year no longer travel to ports by road. Our container trains between Burghausen/Nünchritz and the ports of Bremerhaven and Hamburg replace around 25,000 road journeys a year. This saves around 2,100 metric tons of carbon dioxide annually.

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 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.

Burghausen Logistics Hub

Shipping volumes increased in the period under review. As the Group’s largest logistics hub, Burghausen has increased its shipping volume by about 2 percent to around 762,000 metric tons (2013: 750,000 metric tons). There was a slight rise in the number of both truck loads and overseas containers – up to 40,700 and 12,500, respectively.

Transport Volumes for the Burghausen Logistics Hub



Most of the freight containers leaving our German sites reach northern ports via rail. From our Nünchritz site, some 5,800 containers are transported to German seaports by rail and inland waterways from Riesa every year. When we procure raw materials, they are primarily transported by rail, too. Over shorter distances, however, truck transport is still more cost-effective and thus indispensable.

Climate-Neutral Transport

With the GoGreen certificate, our logistics service provider Deutsche Post DHL certifies the offsetting of greenhouse gas emissions generated by the transport of our parcels. The greenhouse gas emissions specified on the certificate of 3.18 metric tons CO₂e in 2014 include emissions from transport and logistics, as well as upstream emissions from fuel and energy generation (2013: 2.76 t CO₂e). CO₂e equivalents (CO₂e) include carbon dioxide (CO₂) and other greenhouse gases, such as methane (CH₄) and nitrous oxide (N₂O).



Deutsche Post DHL certified WACKER with its GoGreen certificate in 2013 and 2014.

Deutsche Post DHL's carbon management is offsetting the greenhouse gas emissions generated during transport in the period under review through investments in global climate-protection projects. The [SGS](#) (Société Générale de Surveillance) has verified the calculated greenhouse gas emissions and their compensation in accordance with carbon management systems and the "Greenhouse Gas Protocol – Product Lifecycle Accounting and Reporting Standard."

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.

WACKER BIOSOLUTIONS' transfer of its CGTase production from Burghausen to the US Eddyville site in 2012 contributed to savings in transport emissions (Scope 2) during the reporting period. CGTase (cyclodextrin glycosyl transferase) is an enzyme used in the manufacture of cyclodextrins, such as our CAVAMAX[®] and CAVASOL[®] products. CGTase now no longer needs to travel from Europe to Asia in a container ship, but can be processed directly into cyclodextrins in Eddyville.

Our Nünchritz plant obtains cartridges for silicones from a packaging manufacturer in nearby Grossenhain. Burghausen procures reusable IBCs (intermediate bulk containers), drums and pallets from regional suppliers. We have replaced 220-liter drums for shipping silicone fluids and emulsions with 1,000-liter IBCs. WACKER fills over 130,000 of these containers annually, and then sends them to a service provider a short distance away, where they are recycled.

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 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.

Piston tanks are an environmentally sound alternative to transport drums for viscous products such as our silicone sealants. A moving internal piston pushes 25 metric tons of silicone sealant – equivalent to 125 steel drums – into the tank semitrailer during loading. Customers can connect the tank directly to their filling equipment and the piston pushes the product out of the tank. Several thousand metric tons of silicone sealant currently leave our Burghausen site in this way. WACKER's sites outside Germany, too, procure mainly from regional suppliers to shorten transport distances.

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. Plus, we launched a strategy back in 1996 to help avoid empty runs by focusing on regional shipping agents. 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 compliant vehicles used by our logistics providers has increased from just under 8 percent in 2006 to over 83 percent in 2014.

Expanded Transportation Infrastructure at Our Sites

For the construction of the new polysilicon facility at Charleston (Tennessee, USA), project logistics already take account of operational requirements. The infrastructure that was put in place will be used during plant start-up, and for subsequent supply and waste-disposal operations. In 2014, polysilicon expansion continued at the Charleston site. Project logistics are playing a central role in ensuring that plant components arrive for assembly at the right place and right time. In parallel to this, the logistical processes for start-up and production are being developed.

At the Zhangjiagang site, we are constructing a new logistical storage and distribution center to handle the ever-growing volumes of incoming and outgoing raw materials and finished products even more efficiently. Completion of this project at the Chinese site is scheduled for fall 2015.

Operations at the new public combined road and rail terminal in Burghausen commenced in the fall of 2014. In addition to expediting container traffic for exports, we are working with the operator to shift more freight from road to rail using the new terminal. The combined road and rail terminal has been linked to the site via the new North Gate for trucks, which will make shipments into and out of the Burghausen site quicker and easier.



A hand-in-hand success: on January 19, 2015, the combined road and rail terminal was inaugurated in Burghausen.



Key representatives from companies and authorities gave the start signal together.

Ethylene Pipeline South Started Operation

The Ethylene Pipeline South (EPS; German-language website only) was started up in 2013. It enables the safe and economical transport of ethylene between major southern German chemical sites and up to Rotterdam (Netherlands). Construction began in 2007. For the EPS, a 370-km long pipeline runs west from Münchsmünster in Bavaria across Baden-Württemberg to Ludwigshafen in Rhineland-Palatinate. The pipeline enables ethylene to be transported without emissions and at very low energy costs. Once the construction work has been completed, the EPS will be virtually invisible and will have no adverse effect on the landscape. Pipelines were not laid in protected areas where drinking water is abstracted or mineral springs are located, and were only installed in significant water management areas if special safety precautions were put in place.



A ceremony in Munich in July 2013 marked the official opening of the EPS (Ethylene Pipeline South).

Expansion of Transport Routes to ChemDelta Bavaria

In the ChemDelta Bavaria area, one of the major infrastructure projects 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 is the section between Altmühldorf and Tüßling, where three rail lines meet; around 1 percent of German freight traffic passes over these tracks. Construction has already started at this bottleneck; it is scheduled to be removed by 2017.

Expansion of the A 94 Munich to Passau autobahn – supported by the ChemDelta Bavaria association of companies – is progressing. The call for bids as part of a PPP (public-private partnership) project – which is securing the funding for the stretches from Pastetten to Dorfen and Dorfen to Heldenstein – is expected to result in the awarding of the contract in 2015. This means that a continuous autobahn from Munich to Markt I can become a reality by 2018/2019 at the earliest. Completion of the A 94 would not only improve the transport infrastructure of ChemDelta Bavaria, but also relieve congestion in villages and towns along the B12 highway and thus reduce the risk of accidents on this stretch of road. We actively support the “Ja zur A 94 e.V.” (Yes to A 94; German-language website only) association.

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.



Products

114 Product Safety

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WACKER takes environmental, health and safety criteria into account at every stage of the product life cycle. Every research and development project examines the sustainability aspects of our new products and processes. WACKER's policy is to provide high-quality products that can be manufactured, transported, used and disposed of safely, with minimal environmental impact.





ATENCIÓN

SILRES® BS 270

Líquido y vapores inflamables.

Líquido quemante/irritante. Mantener alejado del calor, de superficies calientes, de chispas, de flamas abiertas y de cualquier otra fuente de ignición. No fumar. Evitar la inhalación. Utilizar guantes cuando maneje el alcohol y el óxido de carbono para la extracción. Evitar el uso de vapor de agua. Mantener en lugar fresco. Evitar el contacto directo con la piel. Mantener en lugar fresco. Evitar el contacto directo con la piel. Mantener en lugar fresco.

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Product Safety

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. We pursue this aim in a number of ways:

- We try to replace harmful ingredients with alternative substances.
- In the absence of an alternative, we restrict the sale of products containing harmful substances to commercial and industrial customers wherever possible.
- We develop innovative alternatives to conventional products containing harmful substances.

As a guide for our product developers, we maintain a list of about 550 substances that WACKER products may no longer contain. In addition to prohibited and restricted chemicals (such as materials listed in REACH Appendices XIV and XVII), these also include substances that are the subject of heated public debate or undesired by individual companies. We avoid substances that are on the European Chemicals Agency's List of Substances of Very High Concern (SVHC).

Product Information

WACKER ensures that, if used correctly, no risk to health or the environment is posed by any of its products. 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 a few examples of how our advertising provides product sustainability information:

- We provide an [information sheet](#) for dispersions in which we outline our position on biostability and product safety as per EU Directive 286/2011, which went into effect June 1, 2015.
- In an additional [information sheet](#), we describe our plant hygiene initiatives for the entire product life cycle of our dispersions.
- We present our silicone solutions for high-performance LEDs in a [brochure](#) on LED technologies.
- We also produce another [brochure](#) in which we explain how SILPURAN® Film, an ultrathin precision silicone film, is used in medical applications.
- In WWW – our [corporate magazine](#) – we report on how ELASTOSIL® silicone film helps convert wave power into electricity.

Material Safety Data Sheets

A material safety data sheet (MSDS) is only required by law for some 40 percent of WACKER products. 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 material safety data sheets in up to 35 languages.

WACKER publishes a wide range of information in its material safety data sheets 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 and other information

Nanomaterials

There is no standard definition to date for the term “nanomaterial” as far as regulatory issues are concerned, and there are no standardized specifications for the analysis methods used for classifying nanomaterials. WACKER identifies nanomaterials on the basis of the EU recommendation for defining these materials (2011/696/EU); this recommendation, in turn, is based on ISO TC 229 “Nanotechnologies.”

Nanomaterials can possess innovative properties that significantly enhance products and processes. What is true of all chemical substances applies to nanomaterials: the possible risks of inhalation, and dermal or oral exposure to production staff and users must be taken into account. In addition, there are deliberations about the effects on health that can result from the uptake of particulate, fibrous or plate-like nanomaterials. (Source: a recommendation entitled “Empfehlung für die Gefährdungsbeurteilung bei Tätigkeiten mit Nanomaterialien am Arbeitsplatz,” which was issued jointly by the BAuA [German Federal Institute for Occupational Safety and Health] and the VCI [German Chemical Industry Association] for analyzing hazards during activities involving nanomaterials at the workplace.)

All the nanomaterials that we produce or use have been recorded and their risks assessed. Most of these 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. These nanostructured products include HDK[®] pyrogenic silica, a powder that we have sold as a thickening agent, filler and flow enhancer for over 40 years. The physicochemical properties of the HDK[®] product group have been examined in detail in collaboration with external scientific institutes, and extensive toxicological, ecotoxicological and epidemiological data are available.

In collaboration with the Technical University of Dresden, we validated analytical techniques to measure nanoparticles. We investigated the potential release of nanoparticles at our labs and, in 2010, at our HDK[®] production facility, finding no evidence

of relevant HDK[®] nanoparticle release. During the period under review, 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 classified and of issues related to regulatory compliance.

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, which imposes 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. The cost of REACH compliance for WACKER comes to a total of €30 million.

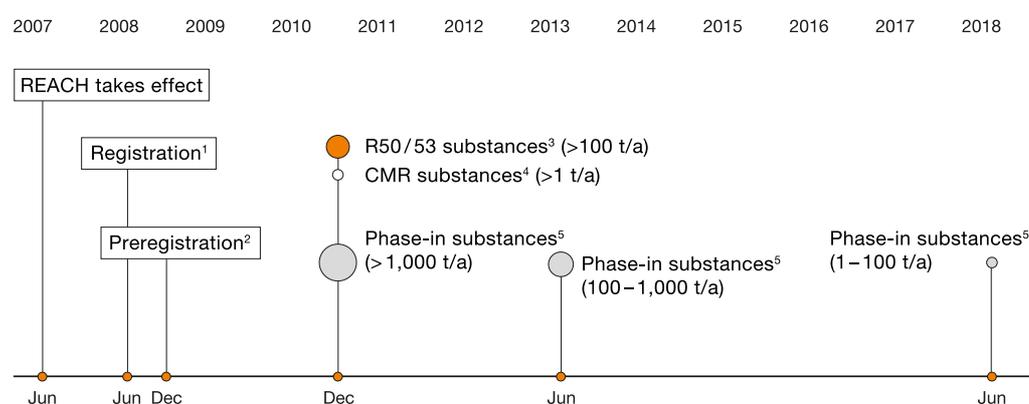
WACKER Submits 171 Registration Dossiers for REACH

By late 2014, WACKER had submitted 171 registration dossiers to the European Chemicals Agency (ECHA). For some of the phase-one and phase-two dossiers, submitted in 2010 and 2013, ECHA required additional information, which we provided in 2014. By the end of 2014, ECHA and the regulatory agencies of EU member states had identified 161 materials of potential concern in terms of human health and environmental safety. Of these materials, 31 already require approval. WACKER has been only marginally affected to date, with only a few purchased substances, and none of its own. As part of the EU Commission's GHS (Globally Harmonized System of Classification and Labeling of Chemicals), all mixtures will have been reclassified pursuant to EU-GHS (roughly 7,000 mixtures) by mid-2015. A central register for hazardous substances has been set up at the ECHA, and we have registered all relevant substances since 2011.

Since 2007, WACKER has been in close contact with its suppliers about their preregistrations for REACH, their already completed registrations and those planned for the coming years. To obtain authoritative information, we systematically ask our suppliers about their current status and will continue with these inquiries beyond the final REACH registration deadline in 2018.

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.

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

The ICCA (International Council of Chemical Associations) has developed the [Global Product Strategy \(GPS\)](#), which governs how to assess the properties of chemicals and how to provide information on their safe use. In Europe, most GPS requirements are satisfied by REACH and by the CLP Regulation (Classification, Labeling and Packaging of Substances and Mixtures). Manufacturers are required to publish descriptions written in layman's terms on the safe and environmentally sound use of chemicals (Safety Summaries). By the end of 2014, 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 with the European Regulation on the Classification, Labeling and Packaging of Substances and Mixtures (the CLP Regulation). More information on this regulation is available online from the [European Commission](#).

Overview of Hazard Symbols in the EU

Old hazardous substance symbols valid until 2015						
New hazardous substance symbols valid since 2010						
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		

The GHS Regulation on the Classification and Labeling of Chemicals has already replaced the previous orange hazard symbols for pure substances in Europe with new symbols consisting of a white diamond in a red frame.

By 2015, we will have reclassified all of our mixtures pursuant to EU GHS (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.

The cost to WACKER of changing to GHS comes to around €4 million. For us, this system switchover means that every product must be checked, reclassified and relabeled. Within just a few years, we have to reclassify tens of thousands of substances and mixtures, change all material safety data sheets and redesign hazardous substance labels to accommodate the new symbols and hazard information.



Because GHS affects any employee whose work involves hazardous substances, it impacts not only production and laboratory workers (who handle GHS-labeled chemicals on a daily basis), but also safety officers (who prepare SOPs). Furthermore, employees who label vessels, piping and equipment have to know and internalize the new hazard symbols.

WACKER provides its employees with online training and a wide range of informative literature on GHS. In Germany, the online GHS training course is currently mandatory for all employees working with chemical substances. In 2013, we set up a non-EU-specific, English version of the online GHS training for employees, which we use at our US sites in particular.

Product Stewardship

Corporate Research & Development

WACKER's research and development pursues three goals.

1. Firstly, we search for solutions that meet our customers' needs and contribute to their market success.
2. Secondly, we optimize our processes in order to be the technology leader and to operate sustainably.
3. Thirdly, we concentrate on creating innovative products and applications for new markets and on serving future trends, such as higher energy requirements, urbanization, digitalization and rising affluence.

Research along the Supply Chain

WACKER takes environmental, health and safety criteria into account at every stage of the product life cycle – every research and development project examines the sustainability aspects of our new products and processes, starting with the raw materials used. We try to minimize raw-material consumption, while selecting materials which offer maximum ecological benefit. Examples:

- Novel silicone resins are replacing organic binders in composites, and we are avoiding organic solvents in the manufacture of such resins.
- In the VINNEX® product family, WACKER has enhanced a binder system for bioplastics. This system now enables polymers based on renewable resources to be processed just like standard thermoplastics. The system improves the physical properties of the bioplastics and makes them compatible with each other. These polymer blends have higher impact strength, higher melt strength or better flexibility than conventional biopolymers. Blends formulated with VINNEX® can be processed into items such as food packaging materials, disposable flatware, parts for electronic appliances and self-degradable gardening and agricultural containers.
- One of the focal points of WACKER POLYMERS' research is polymers that enable the formulation of low-emission downstream products, so that the latter can meet the requirements of the most stringent ecolabels. In the interests of sustainability, we have developed or enhanced products that are free of alkylphenol-based surfactants (APEOs), low in volatile organic compounds (VOCs) and largely free of formaldehyde. Examples include dispersible polymer powders using VAE (vinyl acetate-ethylene copolymers) for cement applications as well as products based on VAE dispersions, e.g. for coating carpets and for sealants.

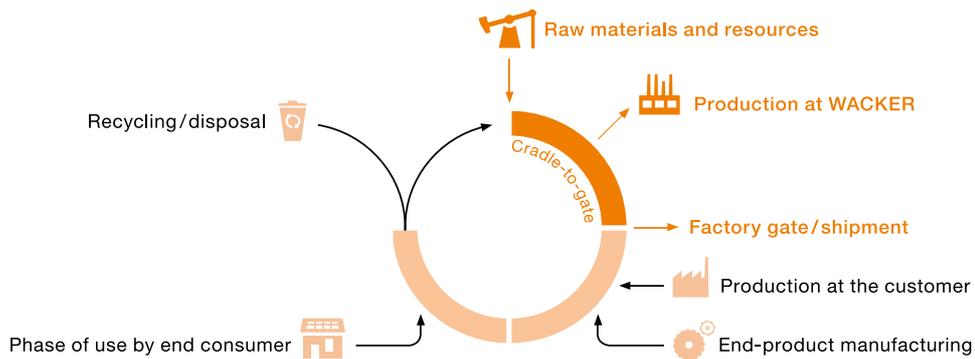
Indeed, WACKER continually strives to optimize the efficiency, environmental impact, energy consumption and costs of its processes. Here is an example: to improve the energy balance of solar cells and lower costs, we have endeavored to make further reductions in energy consumption in polysilicon production. WACKER POLYSILICON has continued to optimize the processes in its closed production loop, enabling us to once again lower energy consumption during deposition and conversion. Using advanced, patented technology and process optimizations, we succeeded in lowering our specific energy consumption for polysilicon production by 29 percent between 2005 and 2013. For this achievement, Wacker Chemie AG received the Bavarian government's 2014 Energy Award.

Environmental Assessments

Our products are generally supplied to business customers for further processing – not directly to end customers. Our life cycle assessments (LCAs) look at the environmental impact caused by a specific product family throughout its life cycle – a “cradle-to-gate” assessment extending from manufacturing to the factory gate. These analyses allow us to gauge the sustainability of our products and production processes, and to improve them accordingly.

In the reporting period, WACKER POLYMERS, for example, updated the life cycle assessment data for homopolymer and copolymer dispersions, as well as for dispersible polymer powders. The division continued to work on replacing APEO-based surfactants (alkylphenol ethoxylates) in its product range. By optimizing production processes, it succeeded in achieving further substantial reductions in the percentage of volatile organic compounds (VOCs) in numerous dispersions and polymer powders. Take the following example: VINNAPAS® 5111 L is a VOC-reduced polymer powder for the formulation of self-leveling flooring compounds and fillers that conform to eco-labeling requirements, such as EMICODE® EC1+ or Blue Angel.

Product Life Cycle



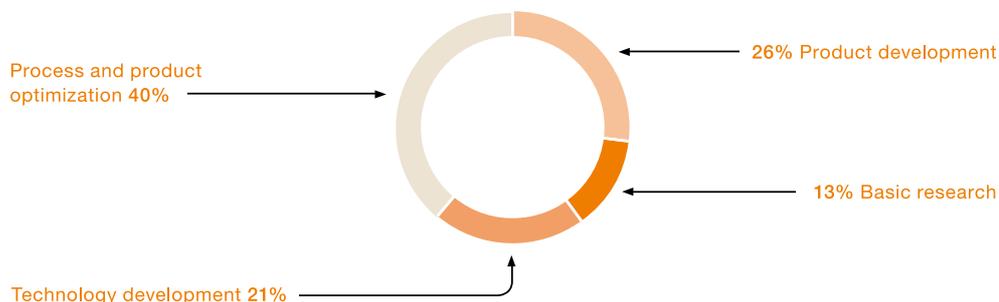


Research and Development at Two Levels

WACKER conducts R&D at two levels: centrally at our Corporate Research & Development department and locally at 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. In 2014, we further optimized the Project System Innovation (PSI) program we use to manage our projects, focusing on making the compiled data more relevant in terms of actual benefits for projects and the portfolio.

We launched the New Solutions initiative in 2013. The goal is to develop technically and commercially advanced solutions for new applications. Expertise from various areas in the company is consolidated groupwide and applied to projects as needed. In 2014, we worked on ten projects in this program. The market and technology evaluations conducted under the initiative revealed potential additional sales worth hundreds of millions of euros. Initial solutions developed through the New Solutions initiative have been placed with customers for application testing.

Breakdown of R&D Expenditures



R&D expenditures in 2014 amounted to €183.1 million (2013: €173.8 million). At 3.8 percent (2013: 3.9 percent), the R&D rate – research and development spending as a percentage of Group sales – was down slightly year over year due to the positive sales trend. The bulk of R&D costs were incurred in the development of new products and production processes. In 2014, WACKER scientists worked on around 270 projects (2013: 260) based on more than 40 technology platforms. Over 20 percent of these projects were of a key strategic nature. The highly promising fields in which we work include energy, electronics, construction and automotive engineering as well as household and personal-care products, food and biotechnology.

Investments in R&D

Our investments in R&D included pilot plants that we use to scale up project results from the laboratory scale to full industrial-scale production, or to confirm results from simulations. Examples include polysilicon deposition and conversion, as well as a facility for producing electrically active silicone films. Corporate Research & Development has built laboratory facilities for the production of nanostructured silicon for lithium-ion batteries. Further investment spending funded laboratory equipment to investigate full cells of lithium-ion batteries, for example.

Strategic Collaboration with Customers and Research Institutes

Our business divisions conduct application-driven R&D. They focus on product and process innovations relating to semiconductor technology, silicone and polymer chemistry, and biotechnology, as well as on new processes for producing polycrystalline silicon. We collaborate with customers, scientific institutions and universities in order to achieve successful research results more quickly and efficiently. In the reporting period, WACKER worked on around 50 research projects with more than 40 international research institutes across three continents. Our collaborative efforts cover topics that include electricity storage, biotechnology, process simulation and process development. In the field of process development, we have established new partnerships with universities in Munich and Stuttgart.

Local Knowledge Transfer

WACKER has also created a worldwide network of 21 technical competence centers that liaise between sales offices and local production sites. Specialists in these centers customize products to regional requirements, taking account of climatic conditions, national standards and local raw materials, for example. They develop formulations for customers' new products and optimize existing formulations.

Our WACKER ACADEMY locations serve as a collection of forums for industry-specific knowledge transfer between customers, distributors and WACKER experts. The focus is on industry-specific courses, which now cover silicone applications in addition to polymer chemistry, e.g. for cosmetics and paints. 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 work with company research facilities, universities and institutes to ensure our seminars remain state of the art.

Publicly Funded Research Projects

Some of our research projects were funded by the government in the reporting period. Examples:

- In the MAI Speed project, the German Federal Ministry of Education and Research (BMBF) is funding a subproject in which WACKER is involved. Working with partners from industry and science, we are doing research on new materials for use in fiber-reinforced lightweight construction in areas such as the automotive industry.
- In the Si-HTF project, the German Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB) is supporting the development of environmentally compatible high-temperature heat-transfer fluids for solar thermal facilities. In this project, WACKER is developing high-temperature silicon-based heat-transfer fluids for use in solar-thermal power plants with parabolic collectors. In contrast to those achievable with existing heat-transfer systems, these products should make higher operating temperatures possible in future systems, thus resulting in greater efficiency. This could lower the cost of electricity generation. One particularly beneficial feature of the new solution is its broad range of operating temperatures, which eliminates the need for expensive trace heating. We are also investigating their use in industrial heat-transfer applications.
- In the OPERA project, WACKER SILICONES is working on phosphorescent polymers for LED applications. This project is being supported at a European level by the European Nanoelectronics Initiative Advisory Council (ENIAC), and by the BMBF in Germany.
- In the MAINPAGE joint research undertaking, where WACKER was involved in two projects, the BMBF provided funds for the development of trailblazing new materials for industrial photovoltaic applications with enhanced energy efficiency. WACKER POLYSILICON had responsibility for a project aimed at producing granular polysilicon of the highest product quality. Siltronic led the research on a continuous, crucible-free pulling process for 200 mm monocrystals with granular silicon.
- In the Fusion Proteins project, the BMBF and the Bavarian Ministry of Economic Affairs, Infrastructure, Transport and Technology (STMWi) funded research on optimizing the industrial-scale production of proteins through the secretion of fusion proteins in specific *E. coli* K-12 bacterial strains.
- In the Olefinic Fatty Acids project, the German Federal Ministry of Food, Agriculture and Consumer Protection (BMELV) funded work on new methods for cleaving, transforming and functionalizing olefinic fatty acids. We developed a method by which specialty olefinic chemicals can be manufactured.

During 2014, our business divisions and Central R&D submitted applications for eight more projects (in the areas of lightweight construction, energy storage, biologics and electronics) to government sponsors, with approvals pending. Our externally-funded research projects are coordinated by our Public Funding office, which evaluates candidate programs, submits our project proposals and manages contacts with funders.

Our R&D Workforce

WACKER had 1,061 research and development staff in 2014 (2013: 987), which represents 6.4 percent (2013: 6.2 percent) of the Group's workforce. Our scientists and engineers conduct basic research, develop new products and processes, and improve existing processes. The lab and technical staff at our R&D, applications-technology and production-support facilities work in our laboratories and in our production and pilot plants, or on-site at our customers' plants. Our other R&D personnel construct research equipment in our workshops, or perform administrative functions in such fields as market research and trend analysis.

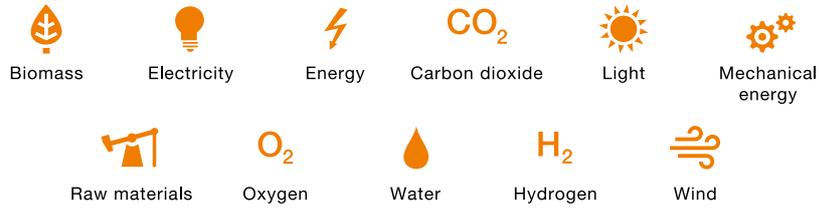
We recognize the dedication of our researchers by presenting them with awards. The 2014 Alexander Wacker Innovation Award went to a project team for its ground-breaking work on the ESETEC® 2.0 secretion system. The researchers were honored for their fundamental analysis of the *E. coli*-based production system for pharmaceutical proteins and for making enhancements which enable even highly complex molecules such as antibody fragments to be produced cost-effectively and efficiently. Named after the company's founder, the Alexander Wacker Innovation Award has been presented every year since 2006 – alternating between the categories of product innovation, process innovation and basic research. In 2014, the €10,000 in prize money was awarded for innovation in basic research. In the previous year, the prize was awarded in the process innovation category and went to a project team at Siltronic that had developed a process for manufacturing silicon wafers for high-performance devices. This granular float-zone process opens up technological prospects for the custom high-performance wafer market.



WACKER Executive Board member Auguste Willems (far left) with the winners of the 2014 Alexander Wacker Innovation Award (from left): Dr. Carsten Bornhövd, Dr. Tobias Daßler and Dr. Günter Wich. The researchers were honored for enhancing a system for manufacturing pharmaceutical proteins.

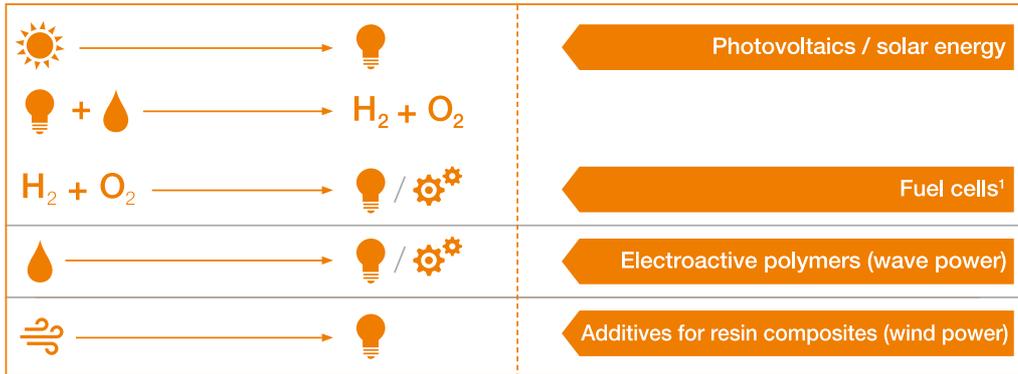
Siltronic AG confers its Inventor Award on employees who have delivered technological innovations. In 2014, eight employees received this award for their creative thinking and the systematic implementation of their projects to optimize wafer processing. With their CMP (chemical-mechanical polishing process) and wet-bench cleaning projects, the two winners in 2013 improved processes in the final wafer-treatment stages. The Siltronic Inventor Award is bestowed in two categories – “Most Important Invention” and “Best Inventor” – each offering €10,000 in prize money.

Research for Sustainable Development



Sustainable Energy Generation

WACKER Research Topics



Sustainable Raw-Material Production



Energy Efficiency and Energy Storage



¹ Fuel-cell project ended

² Out-licensing

³ Methane

⁴ Lithium-ion batteries (LIB)

Selected Topics of Central R&D

In our research, we are devoting particular attention to energy storage and renewable energy generation. Further R&D priorities are the highly promising fields of consumer care, biotechnology and construction applications.

On the topic of energy, we continued our activities in electricity storage and conversion. We are working on materials used in lithium-ion batteries (LIB) in order to enhance this type of battery for automotive and consumer-product applications. We are also focusing on lightweight construction, as lighter materials can be used to conserve raw materials and energy, for instance in the automotive and aerospace industries. In these fields, we are developing building blocks for composites.

We have developed nanoscale silicon structures and binders for use in anodes of lithium-ion batteries. In tests conducted on batteries with these anodes, we have achieved good stability in charge-discharge cycles: compared with commercially available anodes, these have a much higher specific capacitance. We are also developing new additives in the SafeBatt project, also funded by the BMBF, to improve the safety of lithium-ion batteries.

Their good gas permeability makes silicones suitable as a membrane material for all kinds of applications. When combined with gas-selective materials, such membranes could be used for separating gases. The hydrophobic nature of silicone films combined with their high water-vapor permeability also makes them interesting as materials for textile applications and air-filtration systems. We are conducting tests in a development project to determine how such material systems might be used.

Sustainable Products

Over the last two years, WACKER has developed diverse products that promote sustainability. Examples are presented below for the highly promising fields of energy, urbanization, digitalization and rising affluence.

Energy

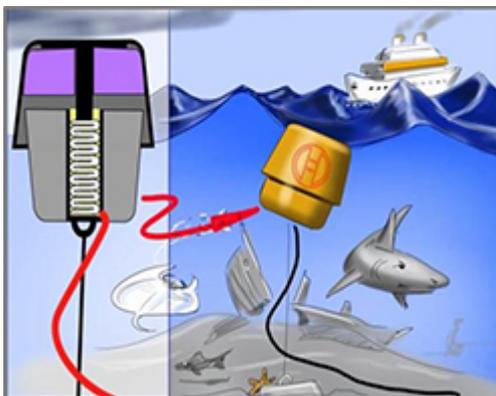
The energy sources of the future are the sun, wind, water, biomass and geothermal power. WACKER is making a significant contribution to their efficient use, and WACKER SILICONES has been driving forward research into electrically active silicone polymers. Very thin films of these polymers lend themselves to energy recovery, and are also used for actuators and sensors. In 2014, WACKER and one of its partners developed an innovative algae bioreactor with highly transparent silicone rubber tubing from WACKER at its heart.

Conversion of Wave Power into Electricity

Silicone films can play a pivotal role in the conversion of wave power into electricity. As part of the EPoSIL project sponsored by the German Federal Ministry of Education and Research (BMBF), an industrial/R&D consortium led by Robert Bosch GmbH is developing the basic principles underlying wave farms. As a member of the project, WACKER is responsible for developing and manufacturing ELASTOSIL® Film, a precision silicone film.

As silicone elastomers are electrically insulating, have good dielectric properties and endure long-term mechanical loads with hardly any signs of fatigue, ELASTOSIL® Film can be used as a dielectric precision layer in electroactive polymers (EAPs). EAPs alter their shape when a voltage is applied. Based on this principle, silicone films can be used to develop innovative sensors, actuators and generators. Potential applications range from intelligent pressure and strain sensors and electrical relays to valves and peristaltic pumps. As a component of “artificial muscles” in actuators, silicone films can contribute to replicating not only linear movements, but also natural forms of movement.

Biocompatible SILPURAN® Film is ideal for use in heart-lung machines or for the manufacture of atraumatic adhesive plasters. ELASTOSIL® Film and SILPURAN® Film are made without the use of solvents in cleanroom conditions.



Low-maintenance generators based on electroactive polymers made of ELASTOSIL® Film can transform the power of ocean waves into energy. The idea behind this “sandwich” of silicone film and electrodes is simple yet ingenious: the action of the waves stretches a silicone film and then compresses it again; this movement generates electrical energy.

We are developing silicone resins that modify the proppants used in modern oil and gas drilling technologies. WACKER® SG 3377, a silicone oil demulsifier, can break crude oil emulsions even when the oil-water mixture is not at the proper processing temperature – a problem that arises, for example, on offshore oil rigs. Even at temperatures below 40 °C, the product exhibits outstanding performance, reducing both the water content of crude oil to 1 percent and the concentration of oil in water to under 10 ppm.

WACKER actively supports 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. Carbon-fiber-reinforced plastics (CFRPs) with silicone-coated fibers are 80 percent lighter than steel. That makes them a key component in the automotive sector for extending the range of electric vehicles and reducing the fuel consumption of combustion engines.

We have refined our highly transparent liquid silicones for lighting applications and are supporting energy-efficient LED-based vehicle headlamp technologies by developing highly transparent silicone rubber compounds, which are used to make components for secondary optical devices. The tremendous increases in LED performance over the last few years has meant that organic materials are no longer capable of withstanding the heat and light flux. That is why high-performance LEDs are being produced using heat- and light-resistant silicone-based encapsulation and lens materials. LUMISIL® silicone elastomers make it possible to produce a moldless optical lens directly on an LED chip in a single production step. In this manner, LED components can now be manufactured in very large quantities with modest plant and process investment.

The generation of safe, clean power from wind plays a central role at WACKER, too. Wind turbine blades consist of half-shells of composite materials that are bonded together. Such bonding requires the use of special high-impact modifiers for wind turbines. With its VENTOTEC® impact modifiers, WACKER is able to supply a new generation of products for optimizing reactive resins. The powder-form additives combine in one product the two technologies for the production of silicones and organic polymers. The result is a hybrid product that makes adhesive layers stronger and more durable. The additives significantly enhance the impact strength of epoxy resins and other thermosets.

Polysilicon: Energy-Generating Solar Installations

WACKER is among the main suppliers worldwide of polysilicon for the production of solar modules. In the reporting period, WACKER continued to expand its production capacity for hyperpure polysilicon to meet increasing demand from the photovoltaic industry and to support the switch to renewable energy sources.

Polysilicon is a hyperpure material that is deposited from trichlorosilane in the form of rods and crushed into chunks for further processing. Our customers use it to produce monocrystalline or multicrystalline solar wafers, which are in turn utilized to make solar modules, e.g. for installation on roofs. In the reporting period, we continued to strengthen our technological lead in polysilicon production. Our aim is to improve our silicon deposition process and to enhance our closed production loop, which ranges from silicon metal, hyperpure solar-grade and electronic-grade silicon through to silicones and pyrogenic silica.

Technological progress in the development of solar modules continues to proceed in leaps and bounds. Wafer thickness has been reduced: from 450 µm in 1995 to 250 µm in 2005 and to under 200 µm in 2010. The standard thickness is currently around 180 µm. Cell efficiency has risen in parallel, and is now around 18 percent for multicrystalline standard cells and well over 19 percent for monocrystalline ones. High-efficiency monocrystalline cells have efficiency levels of between 20 and 25 percent.

The energy payback time – the time taken for a photovoltaic cell to generate the energy used in its production – has become even shorter. Depending on the geographical location of the solar cells, this payback time now ranges from 6 months (in the Sahara) to 18 months (in northern Europe). Each metric ton of polysilicon used in solar modules prevents the emission of 6,000 tons of CO₂. (Source: study issued in 2011 by the Karlsruhe Institute of Technology.)

Dispersible Polymer Powder for Building Insulation: Energy-Efficient Construction

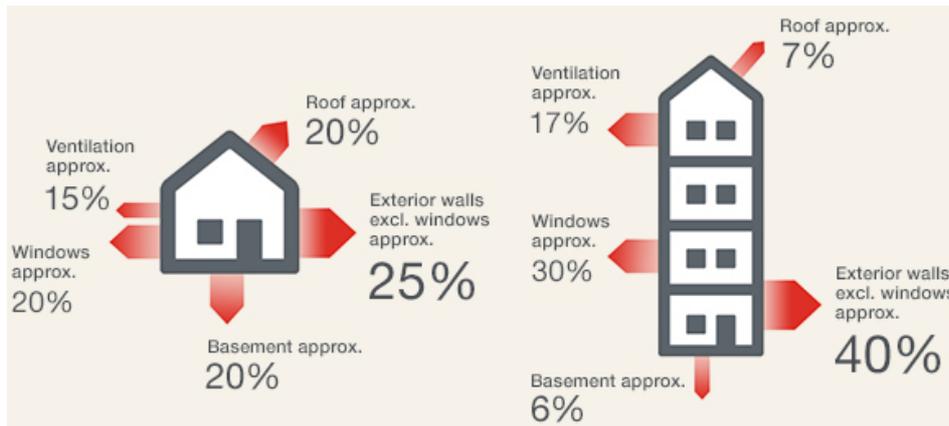
Saving energy – particularly in construction – has developed into a global trend. On top of that, there is climate change, which makes it necessary to insulate against heat as well as cold. VINNAPAS® dispersible polymer powder ensures that the adhesive mortar sticks to both the wall and the insulation material in exterior insulation and finish systems / external thermal insulation composite systems (EIFS/ETICS). The dispersible polymer powder boosts adhesion and impact resistance within the base coat. Hydrophobizing VINNAPAS® polymer powders, in particular, prevent moisture forming in the top coat.



Modern ETICS/EIFS for building insulation consist of a multilayered material composite. But it takes the addition of a dispersible polymer powder to create a permanently stable insulation system.

There is enormous potential for using EIFS/ETICS to achieve a long-term reduction in greenhouse-gas emissions. Heating or air-conditioning accounts for more than half of a building's energy demand. A house that is inadequately insulated loses a large part of its energy via the exterior walls. An ETICS/EIFS system can reduce a building's heating costs by up to 50 percent.

The German Energy Agency (dena) has calculated the savings potential that can be achieved using insulation alone. While over 10,000 kilowatt hours of heating energy escape through the walls of an uninsulated single-family house each year, this can be reduced to just 2,200 kilowatt hours if the external walls are insulated.



Almost 80 percent of the energy consumed by buildings is required for heating. Most of the heating energy that is lost escapes through the building envelope. For a single-family house this averages at 25 percent. In a ten-story apartment building, 40 percent of the heating energy is lost through exterior walls (Source; available in German only: [Qualitätsgedämmt e.V.](http://Qualitätsgedämmt.e.V.))

More than 80 percent of residential buildings in Germany were built prior to the introduction of the third thermal insulation ordinance of 1995. The energy rating of two out of three of these buildings needs to be improved. If all residential buildings were renovated to comply with the energy saving ordinance of 2009, 357 TWh heating energy could be saved annually. Here, building insulation alone has a savings potential of 177 TWh. This is 1.8 times as much energy as German nuclear power plants generate per year.

The biggest energy savings on houses built prior to 1993 can be achieved by improving the energy rating of the building envelope, especially the exterior walls. The climate footprint of the past 35 years for exterior insulation systems in Germany is impressive:

- 997 million m² of exterior insulation
- Equivalent to savings of 92 billion liters of heating oil
- Equivalent to a reduction of 279 million metric tons of CO₂ emissions

(Source; available in German only: [Qualitätsgedämmt e.V.](#))



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.

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 manufacturers of construction chemicals, WACKER is contributing to the development of better cities for the future. An example of this is particularly important for cities in emerging economies where water is scarce: sealing slurries using WACKER binders can seal leaky canals securely and economically, thus preventing water from being lost.

VINNAPAS[®] dispersions and dispersible polymer powders are used as polymer binders (e.g. in tile adhesives, self-leveling compounds and interior wall paints) in the construction sector. They make it possible to formulate construction chemicals with reduced VOC emissions, which meet stringent environmental standards such as the EMICODE[®] emissions standard set by Germany's GEV (Association for the Control of Emissions in Products for Flooring Installation). In the reporting period, we launched a new polymer powder for the formulation of cost-efficient, low-emission self-leveling flooring compounds. VINNAPAS[®] 4220 L can be used to produce self-leveling compounds that result in smooth, uniform surfaces satisfying ecolabel requirements such as EMICODE[®] EC1+.

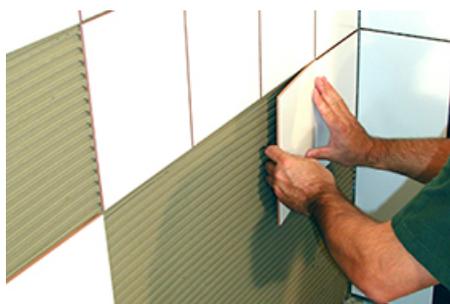
Dispersions for Environmentally Sound Paints

VINNAPAS[®] dispersions are used, among other things, as binders for interior-wall paints. Particularly ecofriendly dispersions are those made without substances that emit formaldehyde or APEO-based surfactants (alkylphenol ethoxylates), and containing just

minute amounts of volatile organic compounds (VOCs). A VOC content of <1 g/l in interior-wall paints ensures a pleasant and healthy indoor climate. In the reporting period, we premiered the VINNAPAS® EF 3818 polymer dispersion for low-odor, low-VOC interior paint formulations. It is made without APEOs, plasticizers or solvents.

Dispersible Polymer Powders for Tile Adhesives, Flooring and Insulation Systems

Urban centers are booming worldwide. Wherever space gets tight, the buildings get higher. This puts new demands on materials. VINNAPAS® dispersible polymer powders make it possible to manufacture insulation boards comprising different materials, including renewable substances such as cork and wood-wool.



In the reporting period, we launched VINNAPAS® 8620 E, a polymer powder for the formulation of high-quality, low-emission tile adhesives, which can be used to reliably bond modern large-format or very thin tiles as well as porcelain or natural-stone materials. VINNAPAS® 8620 E is free of plasticizing additives.

Silicone Resin Emulsion Paints: Long-Lasting Facade Protection

SILRES® BS products based on quartz-like structures protect exterior paints and plasters. The facades stay attractive for longer and are better insulated, and energy efficiency is boosted as a result. Silicone resin emulsion paints (SREPs) are permeable to water vapor and so help to improve the climate indoors.

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 the silicone resins is to help keep the walls dry. A SREP coating decreases heat demand by an average of 4.6 percent. Silicone resin emulsion paints and silicone resin plasters lengthen the intervals between renovations of facades by up to 25 years. Some listed buildings cannot be insulated with ETICS/EIFS. In such cases, a silicone resin emulsion paint is one of the few materials that will improve a building's energy balance.

Gypsum dry-mix mortars formulated with SILRES® BS Powder S can be mixed very quickly without generating any dust. It can be used indoors, since it is environmentally compatible and releases neither alcohol nor other volatile organic compounds (VOCs).

Digitalization

Siltronic AG is a global leader in the market for hyperpure silicon wafers and a partner to many top-tier chip manufacturers. It develops and produces wafers with diameters up to 300 mm at sites in Europe, Asia and the USA. Wafers are cut from silicon ingots and then used to produce chips for electronic devices. Sensors, power devices, microcontrollers and other electronic chips make sure that modern electrical appliances and hybrid and electric vehicles are safe and economical.

The performance of semiconductor devices doubles about every two years. Among the key performance-boosting parameters are the design rules achieved on a silicon wafer. They determine how many transistors fit on a device per square centimeter. The semiconductor industry's current standard design rules of 22 and 16 nanometers (nm) are increasingly

being replaced by an 11 nm standard. In the coming years, the design rule will be reduced even further, to 8 nm, and Siltronic is currently developing processes to produce 300 mm wafers that can be used for this new design rule. In the reporting period, regular shipments of 11 nm wafers continued to increase and we further refined the technology for 8 nm wafers. We also worked on wafers for power and LED applications.



Our highly transparent silicone gels are deployed in energy-saving displays and the touchscreens of mobile electronic devices.

Rising Affluence

Affluence is on the rise almost all over the world, lifting expectations as regards living conditions, food, health and comfort as well. WACKER is driving innovations in all of these areas. We intend to keep pace with rising affluence, especially in emerging-market economies, by offering products manufactured using energy- and resource-efficient processes. Such products include polymers, e.g. for the paper and packaging industry, and cyclodextrins, e.g. for foodstuffs.

In the reporting period, we launched new products made with sustainable ingredients that target the highly promising field of rising affluence. Here is an example from medical engineering: surgeons have recently begun using silicones from WACKER to make tissue-mimicking “phantoms.” ELASTOSIL® RT 601 and ELASTOSIL® P 7676 are silicones of this kind, and have been deployed in experiments to distinguish tumors from healthy tissue. We have developed SILPURAN® 2112, a skin-compatible silicone adhesive for modern wound dressings, while SILPURAN® 2438 ADH silicone adhesive is suitable for bonding textiles and composites, e.g. of the kind used to make prosthetics. This product, too, is both biocompatible and skin compatible.

WACKER BIOSOLUTIONS has launched a nature-identical hydroxytyrosol branded HTEssence®, which is suitable for use in nutritional supplements and cosmetics. Hydroxytyrosol is an antioxidant with therapeutic effects on blood pressure, joints as well as the immune and cardiovascular systems. As a free-radical scavenger, it can mitigate the effects of skin aging and lighten the color of the skin.

We have developed products for nutritional supplements that enhance the bioavailability of active ingredients. With CAVAMAX® W8, a cyclodextrin, we can enhance the bioavailability of curcumin 40-fold. Curcumin, the active compound in turmeric, is a powerful antioxidant that exhibits anti-inflammatory, antibacterial and hypoallergenic properties. As curcumin is extremely hydrophobic, it is not readily absorbed in the human bloodstream.



In addition to being an acknowledged source of dietary fiber, CAVAMAX® W6, an alpha-cyclodextrin, has stabilizing properties that make it suitable for other innovative food-contact applications. It is a low-cholesterol, purely vegan alternative to caseinate in coconut milk powders and enables cream desserts or fruit mousse to be made without the addition of fat or eggs.

In the reporting period, the EU Commission certified a health claim for the proven health-benefit effect of alpha-cyclodextrins. The EU expert opinion confirmed that alpha-cyclodextrins can reduce the increase in blood sugar after a starchy meal. It thus backs up a recommendation issued by the European Food Safety Authority (EFSA). Food manufacturers can now state on their labeling that alpha-cyclodextrin used as dietary fiber has a blood-sugar-lowering effect. Alpha-cyclodextrins are annular, plant-based molecules obtained from renewable raw materials, such as potatoes and corn. They are used to provide dietary fiber, e.g. in beverages, dairy products, muesli bars and breakfast cereals.

Our researchers at Wacker Biotech have enhanced the *E. coli*-based secretion technology used for the production of pharmaceutical proteins. With ESETEC® 2.0, we now have an efficient method for producing high yields of antibody fragments for medical therapies. The method was first applied for the US company MedImmune, a subsidiary of AstraZeneca. This technological development was honored with the [2014 Alexander Wacker Innovation Award](#) in the category of basic research.

Wacker Biotech and XL-protein GmbH have shown that antibody fragments with substantially extended activity can be produced efficiently using WACKER's ESETEC® secretion technology and XL-protein's PASylation®. We custom-developed a bacterial cell line and obtained high yields of the PASylated antibody fragment, which is currently being tested for effectiveness against autoimmune diseases. Working with Methersis Translational Research, Wacker Biotech developed a cell line based on ESETEC® for producing an antibody fragment for a cancer drug.



In Asia, especially in the key market of India, people often still wash their garments by hand. In the reporting period, we developed SILFOAM® single-rinse technology. Antifoam agents in the detergent mean only one rinse is required, thus saving water.

The new silicone impregnant WACKER® HC 321 facilitates the manufacture of cleaning agents that lend a remarkably water-repellent surface to textiles and other substrates. WACKER® HC 321 is an aqueous silicone emulsion designed for solvent-free household products.

GENIOPLAST® Pellet P plus has been approved as an additive for plastics in food-contact use, making it suitable for the manufacture of kitchen appliances or packaging. It enhances the effect of fire-retardant additives, and creates smooth surfaces, e.g. for refrigerator inserts, that are especially easy to clean. As a processing aid for compounders, the product lowers energy consumption, and makes for higher throughput and less waste.

GENIOSIL® XL 70 is an arylalkoxysilane monomer designed as a water scavenger for silane-curing adhesive and sealant formulations. It is ideal for products that must be free of unpleasant odors when used, e.g. adhesives for parquet flooring or liquid waterproofing systems applied over large areas. In the reporting period, we launched the VINNAPAS® EP6300 and VINNAPAS® EP7000 dispersions, which are binders for water-based adhesives and free of alkylphenol-based surfactants (APEOs).



Since their surface area is large, floor coverings can emit volatile organic compounds (VOCs). Used as binders for carpet coatings, VINNAPAS® VAE dispersions emit hardly any VOCs, exhibit better flame retardance and are virtually odorless. With VINNAPAS® CA 55 as a binder, it is possible to formulate both precoats and secondary coats to bond the backings of carpets used, e.g., in residential settings. Floor coverings of this kind, which bear the "GUT" label of the German Association of Environmentally Friendly Carpets (GUT e.V.), must undergo extensive analysis for possible pollutants.



Safety

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At WACKER's Burghausen site, the teams of safety engineers and safety managers are led by two women. Susanne Ackermann (left) and Carola Schock are responsible for preventing accidents at the site. "The days when safety was merely a matter of policing are long gone." The principle task of the two safety managers is to provide advice and support to the various departments on all issues relating to safety.





Prevention

Workplace Accidents¹ Involving Permanent Staff and Temporary Workers



¹ Accidents leading to at least one work day missed

Managing plants and processes in a way that poses no risk to people or the environment is an important objective at WACKER. We therefore operate a groupwide safety management system that covers both workplace safety and plant safety. Our processes and workplace safety standards will be aligned with international standard OHSAS 18001 by the end of 2015. Systematic workplace safety includes the regular evaluation of hazards and work-area monitoring.

Risk Management

The first step in ensuring plant safety is to identify the risks systematically and then assess them. This includes analyzing how well we control the energy (e.g. pressure, heat) existing in a process and determining what influence an individual fault might have on a chain of events leading up to a failure or accident. On completion of this comprehensive analysis, we specify safety measures that will prevent undesirable incidents.

In 2013, our ANSIKO project on machine safety targeted our production sites in Germany. In 2014, we turned our attention to all international sites, identified machinery that poses a risk of injury, subjected their safety plans to critical review and made them even safer to protect employees.

Safety Training & Employee Motivation

WACKER attaches particular importance to providing ongoing training to its safety experts. We hold regular training sessions, for example, on plant safety and explosion protection. Group experts organize safety training at WACKER sites, including those outside Germany. In the period under review, we trained our specialists in Adrian, USA, and Zhangjiagang, China, primarily in the field of machine safety. We carried out safety reviews at the following sites:

- Jandira, Brazil
- Holla, Norway
- Kolkata, India
- Nanjing and Zhangjiagang, China
- Ulsan, South Korea
- Nünchritz, Freiberg, Cologne and Jena, Germany

But it is not only our safety experts who regularly attend trainings. All our employees are given safety training specific to their individual workplace, e.g. in the form of e-learning courses. WACKER Germany, for example, offers 32 online training courses on workplace safety. Topics range from general safety guidelines for office and laboratory workers to instruction on safe behavior in ex areas and the classification of hazardous materials. Each instruction module contains tests that enable participants to assess their progress.

WACKER published a safety manual for partner companies in Germany in 2013. It lays down standard policies and procedures for working with partner companies. The manual is directed not only at the partner companies, but also at their customers, such as construction managers, project engineers and production supervisors. The goal of the manual is to ensure the same level of safety for employees of partner companies at our sites as for WACKER employees. Customers are requested to assess the safety aspects of their suppliers' behavior transparently and unconditionally. The partner companies' approach to safety flows into the supplier assessment.

WACKER Greater China has been supporting other chemical companies in establishing process-safety systems since 2013. WACKER organized appropriate training for more than 20 companies at the request of the Zhangjiagang free-trade zone, the Association of International Chemical Manufacturers in China (AICM) and the International Council of Chemical Associations (ICCA).

Our 2015 goal for occupational safety is to reduce our groupwide accident rate (the number of workplace accidents per million hours worked) to below 2.0. As part of our efforts toward this goal, we set ourselves an interim target for 2014 of fewer than 3.0 workplace accidents per million hours worked at German sites. We almost reached this target: in Germany, there were 3.4 workplace accidents with work days missed per million hours worked in 2014. Groupwide, the figure was 2.8. That was 26 percent down on the previous year (2013: 3.8 workplace accidents). Nonetheless, we are lagging behind the chemical companies that lead the way in occupational safety.

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 2014 was 1.2 per million hours worked (2013: 1.4), while, in 2013, Germany's BG RCI (the statutory employer liability insurance carrier of the basic materials and chemical industries) registered 9.3 reportable accidents per million hours worked in chemical companies. During the reporting period, again there was not a single fatal workplace accident among WACKER employees.

Since 2014, we have also been logging accidents involving employees of partner companies working on WACKER sites. Groupwide, there were 33 accidents with work days missed at our partner companies.

Very few of the accidents at our sites are chemical in nature. The most common causes are tripping, slipping and falling, and performing manual activities without due care. Not satisfied with our accident rate, we are increasing our occupational-safety efforts. We are systematically implementing our new safety program – WACKER Safety Plus (WSP), which incorporates successful safety elements from sites that have particularly low accident rates. Such elements include safety patrols, discussions with the workforce and emergency drills. 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.

In 2014, WACKER focused on reviewing and updating hazard assessments at our German sites. This yielded improved protection concepts and measures in many areas. The program will be continued across all German sites until 2016.

Workplace Accidents Involving Permanent Staff and Temporary Workers

	2014	2013	2012
Accident rate across Group: accidents ¹ per 1 million hours worked	2.8	3.8	4.7
Europe	3.5	4.5	5.3
The Americas	1.6	2.6	4.3
Asia	0.8	0.6	1.2
Accident rate across Group: reportable accidents ² per 1 million hours worked	1.2	1.4	2.1
Fatal workplace accidents	–	–	–

¹ Accidents leading to at least one work day missed
² Accidents leading to over three work days missed

Decoys on Site

In 2013, WACKER’s main site in Burghausen conducted a campaign called “Take the Plunge.” Its goal was to encourage employees to approach colleagues and supervisors about careless behavior. Over a ten-month period, safety officers and foreman-level managers were deployed to simulate typical behavior with risk potential: they used their cell phones while cycling, climbed over fences, rode their bikes on the sidewalk and disregarded other familiar safety rules, without ever being exposed to real danger. Any employees who had the courage to confront the decoys were praised and rewarded with a raffle ticket.



“The focus was not only on employees behaving in accordance with safety rules themselves, but on communicating with others,” explains Stefan Henn, Group Safety Coordinator and initiator of the campaign. The goal was to bring about a change in culture. “We want employees to gradually lose their inhibitions and start talking to one another about unsafe conduct. The ‘Take the Plunge’ initiative certainly got us off to a great start.”

Practiced Safety

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. Our Ulsan site in South Korea is one such example. During the reporting period, this site received an impressive two awards: in 2013 from the Korean Gas Safety Corporation for twelve years without a gas-related accident, and in 2014 from the Korea Occupational Safety and Health Agency (KOSHA) for 13 years without any accident at all.

Transport Safety

WACKER ensures that its products are safely stored and transported. Before loading vehicles, we carry out stringent checks on them, especially if they are carrying hazardous goods. In 2014, we arranged for almost 7,800 trucks to be checked (2013: roughly 8,500). If a vehicle fails inspection, we continue sending it back until it passes. Failure rates have been low for years now. In 2014, the failure rate for shipments of hazardous goods in Germany dropped further to 0.3 percent (2013: 1.2 percent). WACKER normally audits hazardous-goods shippers every two years.

We rely on well-trained personnel for transport safety, too. In 2013 and 2014, our workforce in Germany alone completed around 2,500 classroom training courses and 2,750 online courses on the safe transportation of hazardous goods.

We regularly review aspects of transport safety with our logistics providers, e.g. during the annual Logistics 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, such as the Safety and Quality Assessment System (SQAS) operated by the European Chemical Industry Council (CEFIC), to select logistics service providers and evaluate their performance. Our evaluation criteria include drivers' qualifications and training, vehicle equipment and accident response. Through the use of standards and specifications, WACKER ensures that even the subcontractors working for logistics providers meet our stringent safety requirements.

For products that have a high hazard potential, we use packaging and tanks of the highest quality that often exceed statutory requirements. Wherever possible, we assess the road route to be taken by the transport.

We recorded a total of 16 transport incidents in 2013 and 2014. This number includes not only accidents and incidents involving the distribution of our intermediates and products where we commissioned the transport, but also incidents that do not involve hazardous goods, as well as those that do not adversely impact on people or the environment. These incidents, too, form part of our shipper assessments.

Transport Accidents

Number of Accidents	2014	2013	2012
Road	5	4	8
Rail	2	1	2
Sea	1	2	–
Inland waterways	–	1	–
Air	–	–	–

Incident Management

Our safety management focuses on prevention. However, safety-critical events cannot always be avoided. Since 2013, we have been using SPIRIT, our new IT sustainability reporting system, to register all incidents across the group relating to safety, health and the environment. The reports are evaluated and measures taken. Where other divisions and sites could learn from incidents, reports are compiled and submitted to corporate entities with similar risk potential.

At our largest site in Burghausen, employees have been able to file online reports on safety-critical situations quickly and unbureaucratically since 2013. The reports are forwarded from the database to the supervisor, who acts on them immediately. The supervisor informs any colleagues at risk and works with them to devise a way of defusing the danger.

Every WACKER site has its emergency response plan detailing cooperation between internal and external emergency response teams, and with 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. Training drills are regularly carried out at our major foreign sites, such as Zhangjiagang and Nanjing in China, too.

Not only do WACKER's plant fire departments train fire departments from the local area – they also invite the fire departments of other companies and municipalities to WACKER sites, where they can prepare their response to accidents involving hazardous goods.

TUIS: Accident Assistance

The German chemical industry established its [Transport Accident Information and Emergency Response System \(TUIS\)](#) (German-language webpage only) in 1982 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

	2014	2013	2012
Stage 1 Expert advice by phone	38	23	26
Stage 2 Expert advice at accident scene	1	1	2
Stage 3 Technical assistance at accident scene	6	4	11
Total	45	28	39

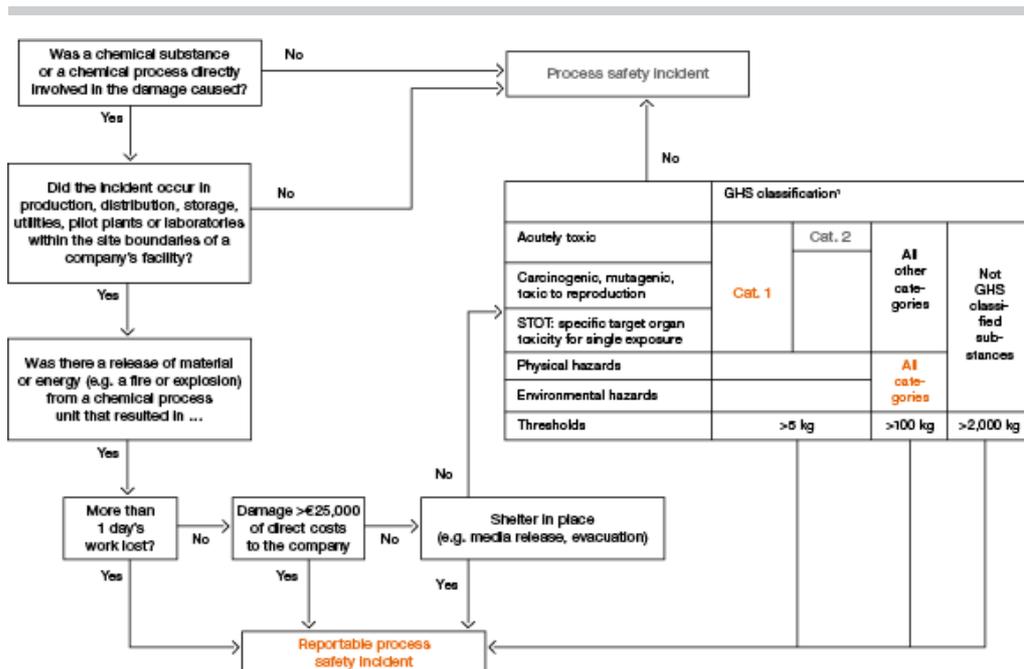
Accidents and Incidents

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.

We use the criteria of the European Chemical Industry Council (CEPIC) to assess safety and environmentally relevant incidents (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.

In 2014, we recorded 22 CEPIC-rated safety and environmentally relevant incidents throughout the Group (2013: 25). Since 2014, we have expressed this number of incidents as a ratio of 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. In 2014, the WPSIR was 0.8 incidents per million hours worked.

Evaluation of Events According to CEPIC Criteria



¹ Globally Harmonized System of Classification and Labeling of Chemicals

Safety and Environmentally-Relevant Incidents¹

	2014	2013	2012
Group	22	25	29
Groupwide environment- and safety-related incidents per 1 million hours worked ²	0.8	-	-

¹ According to criteria laid down by CEFIC

² WACKER Process Safety Incident Rate (WPSIR), first determined in 2014



Employees

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On their own initiative and with personal dedication, a group of WACKER's female staff have set up an internal mentoring program for women executives. The following are members of the Mentoring Circle team (clockwise from left): Corinna Müller, Dr. Birgit Schwab, Kristina Wilde and Sabine Zallinger.





Headcount Trend

WACKER's headcount fell in 2013 by 1.7 percent (283 employees). In 2014, the workforce increased by 694 employees (4.3 percent). At the 2013 reporting date (December 31), WACKER had 16,009 employees worldwide, and 16,703 a year later.

The decline in 2013 was mainly due to a restrictive hiring policy when filling open positions. Furthermore, Siltronic began merging the organization of the Burghausen and Freiberg sites in this year. In Germany, the number of employees at Siltronic was reduced by around 300 in the period under review through intra-Group transfers, phased early retirement and voluntary severance packages. The short-time work schedule that had been introduced at Burghausen's polysilicon facilities back in early October 2012 was canceled in February 2013. WACKER made this decision amid growing demand from its solar-sector customers.

The number of employees increased again in 2014 due to the Group taking a majority stake in the Siltronic Samsung Wafer Pte. Ltd. joint venture in Singapore and acquiring Scil Proteins Production GmbH in Halle, Germany.

Most employees (just under three quarters) are based in Germany, the remainder abroad. While the number of permanent contracts in the period under review went up, the number of fixed-term contracts fell once more. Some 98 percent of WACKER employees groupwide have permanent contracts.

Jobs

	2014	2013	2012
Group	16,703	16,009	16,292
Germany	12,366	12,322	12,635
International	4,337	3,687	3,657
Percentage outside Germany	26.0	23.0	22.4
New hires, groupwide	636	544	683
Percentage new hires, groupwide	3.8	3.4	4.2

Permanent and Fixed-Term Employees

	2014	2013	2012
Group			
Permanent employees	16,319	15,611	15,867
Fixed-term employees	384	398	425
Total	16,703	16,009	16,292

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 we must save on personnel costs, we first reduce the number of temporary workers. The next phase involves not renewing fixed-term contracts. The third step is to consider introducing short-time work in those business divisions most affected by a downturn. All of these measures are decided in close consultation with employee representatives.

Temporary Workers (as of Dec. 31 Reporting Date)

	2014	2013	2012
Group	527	344	91
Of which Germany	393	286	14
Of which international	134	58	77
Percentage¹ temporary workers, groupwide	3.2	2.1	0.6
Percentage temporary workers, Germany	3.2	2.3	0.1
Percentage temporary workers, international	3.1	1.6	2.1

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. The respective national and international duties of disclosure are hereby observed.

Personnel Development

WACKER needs committed and skilled workers if it is to remain innovative and competitive. We offer our employees an optimal 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.

Vocational Training

Vocational training is the first step of personnel development at WACKER. Training takes place at the Burghausen, Nünchritz, Freiberg 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/advanced vocational training and retraining to young people, but also courses for experienced staff. Well known beyond the local area, the center believes that its responsibility extends to providing training to non-WACKER staff from 18 partner companies. In 2014, 58 trainees from these companies started courses at the BBiW (2013: 53).

BBiW courses cover 18 vocations and six work/study programs to bachelor degree level. The main focus is on the scientific and technical jobs typically encountered in the chemical, electrical and metalworking sectors. In 2014, 176 young people started training at WACKER or the BBiW (2013: 185). In total, the company employed 635 trainees, slightly fewer than a year earlier (2013: 664) – with 541 (2013: 564) in scientific and technical disciplines and 94 (2013: 111) in business administration. After graduating, they have a good chance of finding employment. In 2014, WACKER offered jobs to the majority of suitable trainees – 162 graduates – hiring 111 of them temporarily and 51 permanently. In 2013, 124 graduates were offered permanent positions.

At 4.9 percent, the 2014 percentage of trainees (ratio of trainees to Group employees in Germany) was slightly below the previous year's level (2013: 5.2 percent). The BBiW's vocational training is complemented by work/study programs to bachelor level: business administration, business IT, applied IT, engineering management, electrical engineering and process engineering. In these courses, 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 BBiW intensified its marketing efforts targeting high school students during the reporting period to counteract the decline in applicant numbers resulting from demographic change. The training center thus revamped its website and invested in advertising on public buses. It also invited its trainees to participate in tradeshow and school visits to provide high school students with first-hand accounts of life on the job.

The high quality of BBiW's training is evidenced by all the awards won by its trainees. The Chamber of Industry and Commerce for Munich and Upper Bavaria named a chemical technician and a logistics clerk the best of the class of 2013. At the German Skills competition, an electrical installer and an electronics and instrumentation systems technician qualified for World Skills 2013 in Leipzig and were presented with the "Excellence" medal for their achievements. In 2014, 31 trainees completed their training with the highest possible grade, and their accomplishment was recognized by the Chamber of Industry and Commerce. The Nünchritz site has produced Saxony's best trainee chemical technician for the third time in succession.

Welding to the Top

Young WACKER welders from the Burghausen Vocational Training Center (BBiW) delivered an outstanding performance at the 2013 Bavarian “Young Welders” competition, obtaining three gold and two silver medals. At the SLV welding institute in Munich, young people aged between 16 and 23 displayed their skills.



At the top of Bavarian welding: Carmen Niedermeier.

In the “novice welders” skill-level class, eleven teenagers under 19 years of age competed in four categories. The young craftsmen had to pass a theoretical exam, and prove their skill in welding fillet and butt welds. Three WACKER trainees successfully sent the sparks flying: Sabrina Hufnagl went right to the top of the winners’ podium as Bavaria’s top gas welder, Carmen Niedermeier came second in the TIG welding category, and Andreas Hechemer achieved second place in manual arc welding.

The intense competition preparations at the BBiW also paid off for two WACKER colleagues who participated in the under 23 age group: Tobias Schmid took gold in MAG welding and Lukas Spitzendobler won the gas welding category. Both of them qualified for the national competition in Essen.

Trainees

	2014	2013	2012
Number of new trainees	176	185	205
Number of all trainees (all phases)	635	664	657
Thereof hired by WACKER on completion of training	162	123	174
Total number of employees in retraining	6	9	10
Trainees/retrainees as a percentage of total WACKER Germany employees	4.9	5.1	4.9

University graduates can join WACKER’s 18-month General Management Trainee Program (GTP). The program has an excellent reputation. This is also evidenced by the high number of qualified applicants. Four university graduates completed the program in 2013. WACKER launched this trainee program back in 1997; since then, 79 graduates have completed management training. After an orientation phase, the trainees work for three to six months on various projects that often involve periods spent abroad.

Advanced Training

Number of Training-Course Participants



WACKER will remain innovative and competitive as long as it has highly-skilled employees, which is why we offer all our employees opportunities for 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. In 2013, more than 17,500 places at seminars, advanced training courses and conferences were filled; the 2014 figure was over 16,400. Additionally, approximately 88,000 e-learning courses were held in 2013, and 74,000 courses in 2014.

Employees in Germany can select advanced training courses from the wide range on offer under the WACKER training program. The program categories are Technical Skills, Management Skills, Social Skills and Personal Skills. Individual jobs determine whether participation in certain seminars is obligatory. For example, laboratory heads must attend a seminar tailored to their specific tasks and responsibilities. Prospective engineering managers and production/operations managers attend a course preparing them for their new role. Employees also have access to a variety of (advanced) training courses at WACKER's international sites. For example, about 1,530 participants completed 3,040 training days at WACKER Greater China in 2014 (2013: 1,460 participants and 3,090 training days). At the US Wacker Chemical Corporation, some 1,200 employees participated in around 6,600 training days in 2014 (2013: 1,100 employees and 4,600 training days).

WACKER invested €7.0 million in personnel development and advanced training in both 2013 and 2014.



Advanced Training¹

Number of Training Hours per Employee	2014	2013	2012
Standard-payscale employees	12.8	16.1	13.2
Above-standard-payscale employees ²	21.7	21.8	27.4

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)

Talent Management and Managerial Staff

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

2013 marked the launch of a new talent-management process at WACKER. The aim is to identify and foster talent at an early stage, so that WACKER can 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 payscale. The employees' performance and potential are discussed according to 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. In 2014, we rounded out the first cycle of the talent-management process with the Executive Board conference on succession planning.

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, who then receives individualized assistance. For example, standard-payscale employees who are recommended for or apply for a position as shift leader or certified industrial foreperson can attend a Potential Analysis Workshop. Above-standard-payscale employees with an outstanding track record are invited to take part in a Management Development Center. In 2014, this was superseded by the profiling interview. During the one-day development workshop, employees participate in various role plays and determine the focus of their future development (leadership, expertise or project).

Executive Development

Executives are not necessarily born leaders. They must systematically and continually work on their skills, in order to deal with the varied challenges they encounter. We therefore offer our employees comprehensive programs adapted to the needs of the respective target group. Until the end of 2013, this included the First-Level Management seminar for employees that have assumed management tasks for the first time, and the Advanced Management seminar for experienced managers. The programs were set up as modules, and covered the most important areas of expertise: leadership, communication, personality and an entrepreneurial mindset. Each module explored management from a different perspective.



In 2014, both seminars were superseded by new formats tailored to the participants' individual requirements. For employees new to management, we developed 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 encourages internal networks for specialists and managerial staff. These networks promote knowledge transfer and exchange of information across departmental boundaries. Examples include the "Neu-Wackerianer" network for new employees and 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 2013 and 2014. WACKER's OFK executives acted as mentors to other companies' female employees. Since the program began, a total of 27 young female managers have taken part in the cross-mentoring program.

Alongside the cross-mentoring program, WACKER introduced an internal mentoring program in the period under review that is open to both male and female employees. Here, executives act as mentors to young above-standard-payscale employees. The new program was well received in 2014 with six tandem mentoring relationships.

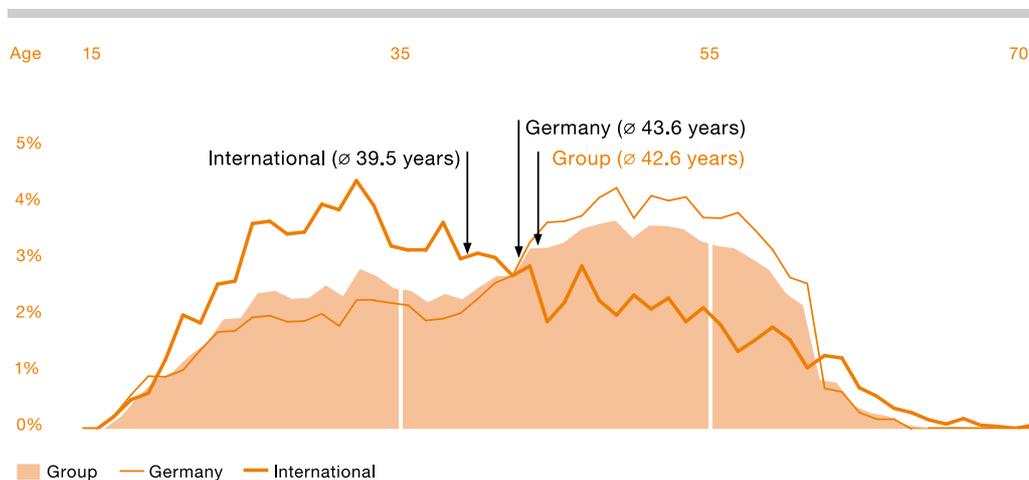
All WACKER managerial staff, whatever their level, receive feedback on their management style when they hold annual performance reviews with their employees.

Demographic Change

WACKER has been addressing demographic change for many years. The average age of the Group's workforce at the 2014 reporting date was 42.6. Employees at non-German sites are younger (average age: 39.5) than in Germany (43.6). The average age of executive staff was 52.6. In-house studies have shown that the percentage of employees in Germany who are over 50 will increase to 38 percent by 2020.

The age structure abroad varies greatly from region to region. Staff at Asian sites are comparatively young (average age: 34.6), while staff at US locations have an average age of 47.7. Regional variations in age structure are not exclusive to WACKER; they reflect the age structures of the populations in each continent and country.

2014 Demographic Analysis of German and International Sites



To maintain our long-term innovative and competitive strength and to acquire and retain highly qualified employees, we have formulated ten strategic goals. These are:

1. Systematically promote health.
2. Adopt a respectful and appreciative approach to older employees.
3. Expect employees across all age groups to take up offers of vocational training and to show job flexibility, while providing conditions that encourage them to do so.
4. Secure expertise for the future, and transfer knowledge in a systematic and binding manner.
5. Develop instruments to manage and regulate the transition to retirement.
6. Orientate compensation to levels of performance and expertise.
7. Maintain and enhance WACKER's attractiveness for employees.
8. Intensify advertising and recruitment efforts aimed at professions critical to WACKER's success.
9. Pursue forward-looking strategies for in-house vocational training.
10. 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 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, opportunities for internships and providing possible topics for bachelor's and master's degree theses. WACKER also attends job fairs at universities.

Diversity, Inclusion and Equal Opportunity

As a global company, WACKER operates in international markets and multicultural environments. Holding each employee's skills and dedication in high regard, we are convinced that diversity and inclusion enhance our company's performance. We thus view human diversity as an asset. We oppose discriminatory or derogatory treatment on account 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. The complaint will be investigated and the reporting employee will be informed of the results. We do not keep a log of discrimination cases.

We require all employees at our German sites to familiarize themselves with Germany's General Equal Treatment Act (AGG) by completing an e-learning course. This course is compulsory for all levels of corporate hierarchy, from the Executive Board down to standard-payscale employees, as well as all new employees.

Special arrangements are in place to help and promote WACKER employees who are disabled. The company's integration management program provides for close cooperation between supervisors, employees, HR, disabled-employee representatives 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.

In 2014, the annual average of disabled and equivalent-status employees in Germany was 1,050 (2013: 982). For years, WACKER has employed a higher number of people with disabilities than required by law (percentage of staff: 2013: 7.4 percent; 2014: 8.1 percent; legally mandated: 5 percent). Nine out of ten disabled employees at WACKER in Germany are on the standard payscale. The average age of disabled employees at WACKER is 51.6. In 2013 and 2014, the Burghausen site took on five disabled young people as trainees. After having completed their training program successfully, the trainees' goal is a steady job at WACKER.

WACKER supports disabled individuals who cannot find work on the general job market, for example by collaborating with workshops for the disabled. Our Burghausen site, for instance, sources key products from the charitable Ruperti workshops – such as dunnage for securing freight, to mounting plates for process engineering, up to packaging for Siltronic. At the Nünchritz site, we have for many years been using the services of the disabled workshop "Lebenshilfe Riesa e.V." (a charity for the mentally disabled) for landscaping and garden maintenance. An example of cooperation with disabled individuals in the USA is the Pomona Valley Workshop. Here, the Chino site collaborates with a neighboring organization that offers jobs to disabled people.



More Than Just Gardening

Christoph Theile routinely pulls up weed after weed from the dry earth and throws them into the white bucket next to him. As he does so, Chrissy, as he is known, jokes with his colleagues, occasionally stretching his back. “My bones do ache in the evening sometimes,” admits the 27-year-old. Yet he clearly derives a great deal of pleasure from working outdoors once again after the endless winter months. For ten years now, Christoph Theile has been part of the team at “Lebenshilfe Riesa” (a charity for the disabled), which maintains green areas at WACKER’s Nünchritz site from April to October.



Christoph Theile has been maintaining the green areas at WACKER’s Nünchritz site for ten years.

Under the guidance of Maik Rochel, the disabled men are on site here from Monday to Friday to keep just under five hectares of land in order. The eight men between the ages of 20 and 50 have to mow lawns, maintain borders, pull up weeds and cut back trees and shrubs. Through their work, they contribute to keeping the site’s general appearance attractive. The men are all professionals and have completed a two-year qualification in landscape gardening.

“They are proud to be able to work here,” reports Maik Rochel. To work at such a large plant and join other WACKER employees in the canteen every day is a huge boost to their self-confidence. A reliable team has been working at WACKER for 18 years now. Maik Rochel stresses that the “Lebenshilfe” initiative does real work here. The working week amounts to 37.5 hours, the same as anywhere else at WACKER Germany, and of course everything is done properly and according to schedule. “Maybe we don’t have the same time pressures as other companies, some of the men occasionally need a little longer to get the job done. But they are all highly conscientious and make sure to pull up even the tiniest trace of a weed,” says Maik Rochel in praise of his team, who also has the backing of the customer. “There has never yet been any criticism of the work; we’re highly satisfied,” says Lutz Schurig, who is in charge of partner companies for construction, winter maintenance, and gardening. “We are aware that these are disabled people and are happy to provide them with work here,” emphasizes the WACKER employee. There has also been lots of positive feedback from other colleagues, confirming that the cooperation is open and unprejudiced.

**Disabled Employees**

	2014	2013	2012
Mandatory workplaces (annual average)	649	660	667
Actual workplaces (annual average)	1050	982	921
Ratio of actual to mandatory workplaces (annual average, %)	161.8	148.8	138.1
Disabled employees as a percentage of total employees, WACKER Germany	8.1	7.4	7.3
Compensatory levy (€ thousand)	0	0	0

Over the past few years, WACKER has become more international. The company sells products in 130 countries around the globe, and most of our sales – 86 percent in 2014 – 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, the General Equal Treatment Act (AGG) forbids the selection of personnel according to origin. In the other WACKER regions, such as China and the USA, we also select candidates primarily by qualification.

At the end of 2014, 44 of a total of 192 executive personnel (OFK) were of non-German nationality groupwide – this is 23 percent of the total. Overall, 17 different nationalities were represented at the executive level. Our company's workforce includes people from over 60 nations.

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 payscale, 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, professional experience and the proportion of women in the various occupations. On average, the differences are less than 5 percent in each case.

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 held throughout Germany.

We have set the goal of significantly increasing the proportion of women in middle and senior management positions over the medium to long term. One of the goals of our Talent Management project, which took off in 2013, 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 lifecycle-oriented personnel policy provides the appropriate framework. In accordance with legal requirements – such as German legislation on equal participation of women and men in management positions in the private sector and public service – WACKER will introduce target values for the proportion of women in top management.

**Equal Opportunity**

	2014	2013	2012
Employees, groupwide	16,703	16,009	16,292
Thereof female	3,790	3,581	3,597
Female employees, groupwide (%)	22.7	22.4	22.1
Employees, WACKER Germany	12,366	12,322	12,635
Thereof non-German	1,456	1,412	1,486
Non-German employees at WACKER Germany (%)	11.8	11.5	11.8
Third-level management employees (FK3), groupwide	3,691	3,504	3,423
Thereof female	879	806	752
Women in third-level management, groupwide (%)	23.9	23.0	22.0
Executive personnel (OFK), groupwide	197	197	205
Thereof female	11	13	15
Women as executive personnel, groupwide (%)	5.6	6.6	7.3

Work / Life Balance

WACKER is dedicated to helping its employees to successfully integrate their careers and private lives. Our company has a wide range of flextime models, even including a self-regulated system based on trust. Wherever possible, we offer both full-time and part-time jobs. In individual cases, WACKER enables employees to work from home (an option that may be combined with part-time work), and authorizes unpaid leave for urgent personal matters.

Part-Time Employees

	2014	2013	2012 ¹
Part-time employees, WACKER Germany	1,158	1,285	1,194
Thereof female	796	840	791
Thereof male	362	445	403
Part-time employees, WACKER Germany (%)	9.4	10.4	9.4
Employees in phased early retirement	1,058	1,100	900
Thereof in non-active phase	556	749	573

¹ As of 2012, employees with 96 % of full-time work hours are also included in the calculation.

Since 2014, WACKER has been offering its employees options for organizing their working time in a more personalized way than in the past. Employees now 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. The new arrangements are provided for in the “Working Life and Demography” collective-bargaining agreement and offer employees a wide range of options for balancing the demands of their careers and the different stages of their lives.

Leave-Of-Absence Options Used by Employees¹

	2014	2013	2012
Sabbaticals ²	39	–	–
Qualifications ³	6	–	–
Care ⁴	2	–	–
Total	47	–	–

¹ Introduced in 2014, WACKER Germany

² Sabbatical for personal reasons

³ Advanced training either part-time alongside work or full-time

⁴ Leave to provide care for a family member with a serious health condition

WACKER was one of the first companies to sign a joint declaration on Germany's "Family as a Success Factor" business network, which has its origins in an initiative launched by the Federal Ministry of Family Affairs and the German Chamber of Industry and Commerce. In the declaration, WACKER commits itself to taking into account the needs of employees with family obligations and to offering suitable support.

We support childcare and the return to work after parental leave. One example is the return-to-work workshop at the Burghausen site. Day care and after-school care facilities are available at the Wöhler-Kinderhaus, located very close to the plant. A local day-care center offers a fixed number of day-care slots to employees at the Siltronic site in Freiberg, Saxony. At the Munich site, pme Familienservice GmbH helps employees find kindergarten and preschool places.

At all its German sites, WACKER offers a service for family emergencies. Whether employees themselves or family members fall ill or need nursing care, advice can be obtained from pme Familienservice GmbH.

Employees on Parental Leave, WACKER Germany

	2014	2013	2012
Parental leave	446	456	410
Thereof men	203	220	196
Thereof women	243	236	214
Returnees from parental leave	291	278	226
Thereof men	193	198	161
Thereof women	98	80	65
Returnees from parental leave who were still working for the company 12 months later	265	217	223
Thereof men	191	155	119
Thereof women	74	62	104

Part-Time Manager

WACKER's decision to build a new polysilicon plant (Poly 11) in the US in 2010 was not only the biggest investment decision ever made at the company, it was followed by the largest wave of international assignments in the company's history. Since then, almost 120 German employees, from project engineers to the future site manager, have been deployed to Charleston, Tennessee, and more will follow when the site goes into operation in 2015. Conversely, the first of around 200 new American staff members arrived in Burghausen, where, as chemical technicians, they learned the craft of polysilicon production. For Michaela Brumme, manager of International Assignments for the HR department, and her team, it heralded a highly work-intensive period.



Striking the right balance between work and life:
Michaela Brumme.

Getting the mammoth Poly 11 project underway was only one of Michaela Brumme's responsibilities. She also has two children, who are now nine and eleven. During the early months when the heat was really on, her two daughters would barely be tucked up in bed at 8 o'clock and she'd be back at her laptop again. In fact, having to conduct conference calls with the US meant that, due to the time difference, working into the night actually suited her. Michaela Brumme and her team handle the details of each and every assignment. These include: offering support and advice to employees, taxes, social security, work permits, cost allocation between the individual subsidiaries, assignment conditions and much more.

Now that work relating to the Poly 11 project has subsided somewhat, Michaela Brumme has reduced her working hours slightly, from five to four days a week; she once again is working the same number of hours as at the beginning of her WACKER career. Working at 80 percent, she ranks among a number of managerial employees who work part time. "It works, because I have a great team around me here and we can really rely on one another," she explains. Her co-workers are almost all young women, who know that they might one day find themselves in the same situation as their department manager. But this method of management requires more than cooperative and reliable teammates in one's professional life. Women also need a partner with whom they can share the childcare, says Michaela Brumme.

Compensation and Social Benefits

In addition to their fixed base salary (which includes vacation and Christmas bonuses), WACKER employees usually also receive some variable compensation – a voluntary payment to employees on both the standard and above-standard payscales. It consists of a profit-sharing amount and a personal-performance component.

The Group's business performance precluded any payment of a profit share to employees in Germany in 2013 and 2014. The performance bonus and salary increases usually awarded to employees on above-standard payscales for value retention purposes were also suspended in 2013. The portion of variable compensation coupled to personal performance for 2012 was paid out in 2014. In 2013, the Executive Board and executive personnel contributed by forgoing 10 percent of their fixed monthly salaries from March through November. Half of this contribution was paid back to executive personnel in 2014. In celebration of the Group's centennial, all WACKER employees received a bonus payment in 2014.

IG BCE (the German mining, chemicals and energy labor union) and chemical-industry employers agreed on a new 14-month collective-bargaining agreement in February 2014. The standard payscale increased by 3.7 percent. WACKER raised the minimum salary-bracket values for above-standard-payscale employees by 4 percent in 2014.

Other important aspects, alongside salaries, include the company's social-insurance contributions. Based on what competitors offer and based on local market conditions, these benefits include supplementary sick pay, subsidized company restaurants, and our company cars.

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.

In Germany, the WACKER company pension has two components: the basic pension and a supplementary pension. The basic company pension supplements the statutory pension. In taxation terms, the supplementary company pension positively impacts that proportion of the salary which exceeds the upper limit for the statutory pension and the basic company pension. In addition, employees have the opportunity to enlist in a private plan that minimizes their tax burden while saving for retirement. WACKER matches supplementary contributions as provided for by the collective wage agreements. For the base amount, employees receive a 28-percent match called "Chemieförderung I"; additional contributions receive the 13-percent "Chemieförderung II" match.

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 17,000 members and provides pension payments to around 7,700 retirees. The average pension paid in the period under review was €635 per month. WACKER paid in up to four times its employees' annual pension contributions, with the exact amount being determined by the individual contribution rate.

The WACKER pension fund again achieved good results during the 2013-2014 period. Fund assets grew by €116 million to approximately €1.8 billion in 2013, and in 2014, by another €150 million to around €1.96 billion. Despite the difficult capital-market environment, the WACKER pension fund achieved a book-value return of 4.5 percent in 2013, and in 2014, 4.3 percent. The fund has prepared itself well for the coming years with a broad investment portfolio, security mechanisms and continual risk evaluation. The fund also passed all the stress tests required by Germany's Financial Supervisory Authority (BaFin).

Company Pensions

	2014	2013	2012
Average monthly company pension (€)	635	630	630
Total expenses for pensions and pension-related benefits (€ thousand)	51,800	50,600	49,600

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 or 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.

Good social benefits, competitive compensation and motivating tasks make WACKER an attractive employer. This explains our high level of employee loyalty. The average length of service in Germany (permanent staff) is 18.1 years (2013: 17.3 years). On average, executive personnel remain at the company for 21 years. The 2014 groupwide employee turnover rate rose to 4.1 percent (2013: 3.4 percent) and in Germany, it was only 0.8 percent (2013: 0.9 percent). At non-German sites, it was 13.8 percent (2013: 11.9 percent).

Employee Turnover Rate 2014

in %				Of which:				
	Group	Germany	International	Europe	USA	China	Asia	Other countries
Men and Women	4.1	0.8	13.8	6.4	7.0	11.7	23.1	7.0
Men only	3.6	0.8	13.3	7.2	7.9	11.9	20.4	10.2
Women only	5.8	1.2	15.1	3.7	4.9	11.5	30.5	0.0

Employee Turnover Rate 2013

in %				Of which:				
	Group	Germany	International	Europe	USA	China	Asia	Other countries
Men and Women	3.4	0.9	11.9	5.1	9.1	12.3	18.6	9.8
Men only	3.0	0.9	11.5	4.3	10.0	12.7	15.9	11.0
Women only	4.6	1.1	13.0	7.7	7.1	11.6	24.7	7.5

Employee Turnover Rate 2012

in %				Of which:				
	Group	Germany	International	Europe	USA	China	Asia	Other countries
Men and Women	7.9	0.9	30.8	6.1	25.9	13.3	56.0	17.6
Men only	7.8	0.9	33.1	6.4	27.0	14.7	60.5	15.3
Women only	8.3	0.9	25.2	5.0	23.1	10.8	44.1	22.2

WACKER holds a regular celebration to honor its employees who have been with the company for many years. In 2014 alone, 467 employees based in Germany were recognized for 25 or 40 years of service, respectively.

As viewed by its own managerial employees, WACKER was once again one of the most popular chemical-sector employers in Germany in 2014. In the annual satisfaction survey (available in German only) conducted by [Germany's Association of Chemical-Industry Executives \(VAA\)](#), the members gave WACKER a grade of 3.01 – slightly below the 2013 figure (2.80). On average, the 23 chemical, pharmaceutical and medical-technology companies participating in the survey scored 3.2 on a scale of 1 to 6, where 1 is the highest grade. In terms of its overall ranking, WACKER fell from sixth place in 2013 to twelfth place. Experience shows that these results correlate with the company's financial success.



China is another country where WACKER ranks among the best employers. China's leading HR solutions provider is 51job. It considered WACKER Greater China to be among the 100 best companies for HR management in 2013 and 2014. 51job's rating of companies included topics such as HR strategy, growth plans, talent acquisition, training programs, social commitments and employer reputation.



WACKER participates in the Fair Company initiative and thus proves to be a responsible and fair training company for university students, too. In the annual survey conducted by the German online recruitment and career guidance specialist ABSOLVENTA, Wacker Chemie AG took third place in the "Employer Quality" category. The over 7,500 interns who participated gave WACKER an average rating of 4.62 on a scale of 1 (dissatisfied) to 5 (very satisfied). WACKER emerged as the winner in the "Pharmaceutical/Medical Technology/Chemical" category. A 2014 survey by Universum, a specialist Employer Branding consultancy, identified WACKER Germany as one of the most attractive employers for science students.



Employee Representation

WACKER works with the employee representatives in a spirit of cooperation and trust. Industrial union membership has always been high among WACKER employees, especially at the German sites. 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.

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. WACKER employees at sites outside Germany can also form unions. At non-German sites without (statutory or voluntary) employee representation, HR staff members are the contacts for employee interests.

Health Management

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.

In health management, the focus is 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.

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 like diabetics, employees with back problems or psychological problems receive in-depth care and are thus kept fit for work in the long term. The construction of the new health building in Burghausen was completed in 2014. This means we have a modern, efficient infrastructure for providing occupational and acute medical care to about 10,000 employees.

Since 2012, we have been offering preventive checkups to management-level 3 ("FK3") employees over 45 years of age at all locations in Germany. In addition to organ examinations, the FK3 checkups also focus on giving employees advice on how to deal better with mental stress situations. The offer is being very well received: in 2014, 87 percent of the relevant managerial employees took part in the checkups.

Our Health Services surveyed the Group's management employees and executive personnel in Germany on mental and social stress. Applying a standardized, internationally recognized surveying method, we wanted to identify potential sources of stress and their consequences, as well as recommended courses of remedial action. The survey showed that, compared with a representative reference group, managerial employees at WACKER see themselves as being subjected to higher quantitative and emotional demands. These types of stress are, however, offset by a substantial range of flexibility in their own work areas.

Health Programs

WACKER emphasizes the importance of informing its employees of health hazards. We regularly organize health campaigns on various topics. In 2014, for example, we held groupwide events on the subject of back health. At WACKER, back problems are the leading cause of sick days and limitations at the workplace. Under the motto “Mind your back. Stay active.” employees learned basic rules for setting up an ergonomically sound PC work station and found out about preventative measures.

Additionally, employees are offered fitness classes if suitable facilities are available at their site. The health-promotion programs include addiction-prevention seminars and back training. WACKER also encourages employees to participate in inter-company running events.

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 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.

Since 2014, Health Services is offering the Mental Health Toolbox on the intranet. It is designed to help employees and managers stay in sound mental health despite the demands of day-to-day working life. To this end, the Toolbox contains information on various topics concerning mental health (Tool 1), backed up by DIY tests, specific forms of practical help (Tool 2) and information about support options available at WACKER and from outside bodies (Tool 3).

In 2013, we launched the “Fit for Your Shift” project together with the South German branch of the statutory pension insurance system (Deutsche Rentenversicherung Süd). We turned it into a long-term collaboration in 2014. In this health program, which is tailored specifically to shift workers, participants are taught habits that can help them deal better with the pressures of shift work 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, and a final refresher weekend. Evaluation of the program in the period under review showed that it significantly reduced risk factors such as body weight and body mass index (BMI) and improved the participants’ training level and the quality of their sleep. The European Chemical Industry Council CEFIC honored “Fit for Your Shift” with a special commendation as part of the European Responsible Care Awards 2014 competition.

Sickness Rate

%	2014	2013	2012
Sickness Rate ¹	5.2	5.2	4.8

¹ Days lost through illness / target working time in days × 100; WACKER Germany

The number of recognized occupational diseases is very low at WACKER's German sites. Respiratory diseases and cancer are the most frequent causes of illness; there are some isolated cases where previous exposure to asbestos or benzene has caused occupational diseases. Suspected cases of occupational diseases, which WACKER evaluated for the first time in 2013 for its German sites, also center on these diseases. 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

	2014	2013	2012
Suspected cases	10	9	–
Recognized cases ²	4	5	6

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)

Pandemic-Preparedness Plan

WACKER has maintained a pandemic-preparedness plan since 2005 to minimize 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.



Society

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In Sri Lanka, WACKER's relief fund finances an entire school attended by about 200 students up to the tenth grade – covering the teachers' salaries, teaching materials, school uniforms and subsidized lunches. For some children, attending school in Kosgoda involves a long journey every day.





Donations and Sponsorship

Donations

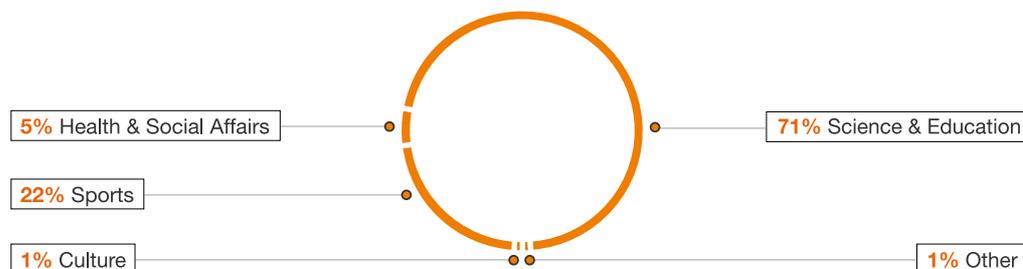


Companies can only enjoy economic success if they are trusted by society, which is why we take our social responsibilities seriously, especially in communities near our sites. Training young people in the natural sciences is especially important to us, because we will need dedicated scientists and engineers 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, focusing our investments preferably on long-term projects.

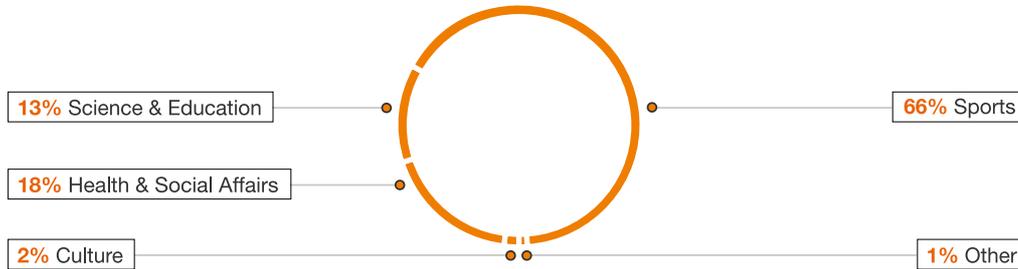
WACKER's Donations and Sponsorships

€ thousand	2014	2013	2012
Donations	851	925	891
Of which political donations	3	6	3
Sponsorships	3,339	964	1,135
Total	4,190	1,889	2,026
Share of sales (%)	0.09	0.04	0.04

WACKER's Donations and Sponsorships – 2014



WACKER's Donations and Sponsorships – 2013



We donated roughly €925,000 in 2013, over half of which went to the SV Wacker Burghausen athletic association (which supports popular sports) and to WACKER's relief fund (WACKER HILFSFONDS). In 2014, our donations came to roughly €851,000, with €3,000 of this going to political institutions (2013: €6,000).

Our sponsorship activities focus on education, science and the SV Wacker Burghausen professional soccer team. Sponsorship expenses came to roughly €964,000 in 2013 and €3.3 million in 2014. This increase is due largely to having extended sponsorship of the Institute of Silicon Chemistry at the Technical University of Munich (see [Universities](#)).

WACKER Supports Training Program for the Long-Term Unemployed

Long-term unemployed and sick – so no chance of a job? Not where Weisser Rabe is concerned: the Caritas affiliate gives unemployed people with disabilities a new chance to determine their own lives. The organization has set up two new vocational training programs for production and warehouse helpers at its Munich recycling business. WACKER Executive Board member Dr. Tobias Ohler presented Weisser Rabe with a €10,000 donation check in 2013.



Executive Board member Dr. Tobias Ohler presented a check for €10,000 to Johanna Schilling, managing director of Weisser Rabe.

WACKER has already had positive experiences with this Munich recycling business, which is where the Consortium, the Group's central R&D facility, disposes of its old electrical equipment. At its 11 businesses in Munich and Rosenheim, Weisser Rabe delivers vocational training to some 400 long-term unemployed people who, for the most part, have physical or mental problems. "If we can give the people here a perspective through new training opportunities, we will be really delighted," said Dr. Ohler.



Taxes represent a significant way in which WACKER contributes to society, with €184.7 million in current taxes going to governments throughout the world in 2014 (2013: €37.9 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

WACKER sees itself as a corporate citizen, and corporate citizenship begins with a good relationship with one's neighbors. For WACKER that means being open about what goes on behind the plant gates. With hotlines and central contact persons available, residents living near our sites around the world can turn to us with their concerns and receive fast, clear answers to their questions. We inform the public about our sites through environmental reports and other publications, and through open houses and events such as our environmental fair at Burghausen and our annual neighborhood discussions at Nünchritz.

WACKER participated in the German chemical industry's nationwide open house in 2014, opening the gates of four of its German sites to visitors. This also served as an opportunity for WACKER to celebrate the company's centenary together with employees and their families, members of the community, and other guests at Burghausen, Nünchritz, Freiberg and Cologne. Some 27,000 interested individuals accepted the invitation. To celebrate its 50th anniversary, Wacker Chemical Corp. in Adrian, USA, held an open house, which attracted 1,100 visitors. On World Environment Day, WACKER Greater China opened the gates of its Zhangjiagang and Nanjing sites, offering visitors an opportunity to learn about environmental protection at the company.

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 analyses of parameters such as anticipated emissions, the regional infrastructure and impacts on the local job market.

WACKER POLYMERS in Allentown, Pennsylvania (USA) has been cooperating with Habitat for Humanity of the Lehigh Valley since 2010. This non-profit organization renovates or builds modestly priced houses that are sold to needy families who benefit from loans at favorable interest rates. In turn, these loans are transferred to a fund that is used to build further Habitat houses. WACKER POLYMERS supports Habitat for Humanity by providing both funding and volunteers to help with painting, finishing and tiling. Between 2013 and 2014, employees and WACKER POLYMERS made donations of more than \$40,000 to Habitat. Employees mainly helped in building and extending a second-hand store that sells donated goods on Habitat's behalf.

In 2014, the German Chemical Industry Association (VCI) honored three German companies for outstanding site communications projects. WACKER's Burghausen site took second place with its "Get to Know and Trust WACKER" project. The largest of WACKER's sites operates a systematic communications program addressed to the company's neighbors, regional political bodies and non-governmental organizations. WACKER approaches these parties specifically and personally invites them to the site to meet with its key personnel. Direct contact with employees in senior management positions, coupled with in-depth, technical information, go a long way toward developing trust in the company.

Procuring goods and services from local suppliers is another important way in which WACKER supports neighboring communities. We purchase over 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 2014, the site procured 20 percent (€164 million) of its technical goods and services from local suppliers (2013: 18 percent = €145 million). Another quarter came from suppliers in other parts of Bavaria. WACKER's Burghausen site is part of the Bavarian Chemical Triangle – an area also known as ChemDelta Bavaria – which is home to companies employing some 20,000 people and securing a further 50,000 jobs in the region.

■ **Nünchritz, Saxony**

The plant, located in the state of Saxony in eastern Germany, sourced 19 percent of its supplies and services from the surrounding region in 2014 (up from 18 percent in 2013). An additional 3 percent of its suppliers were from other eastern German states (5 percent in 2013). In total, these services from Saxony were valued at roughly €86 million (2013: €81 million)

Regional Procurement

	2014	2013	2012
Share of regionally procured ¹ technical goods and services (%)			
Germany	91	92	96
Greater China ²	96	99	90
USA	96	94	90
Other countries ³	65	57	80
Group	91	91	93

¹ Suppliers from the respective country

² China, Hong Kong and Taiwan

³ India, Norway and Asia (not including Greater China)

Schools

WACKER wants children 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 school management systems. Our Group is one of the founding members of the Bavarian Educational Pact, 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.

Examine, experiment, explore – and acquire a critical educational foundation in the process. WACKER's new experimental kit for schools, [CHEM₂DO](#) fulfills this criterion. The company officially presented the kit to the Bavarian Ministry for Education and Culture in 2013. Designed for junior and senior high school students, the kit contains a total of 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.

Because one in eight employees at the Burghausen site is from nearby Austria, WACKER has also been working with the Association of Austrian Chemistry Teachers (Verband der Chemielehrer Österreichs, VCÖ) to provide training for CHEM₂DO. This partnership began in 2013. Also during the period under review, WACKER revised the content of three silicone experiments in the kit to meet the specific needs of Bavarian secondary vocational schools. The aim here was to make chemistry a more tangible component of the combined Physics, Chemistry and Biology (PCB) course offered at these schools.

Beginning in 2014, teachers who use CHEM₂DO at locations near our sites can invite a trained company employee to visit their schools. These WACKER ambassadors assist teachers, help students with their experiments and talk about their day-to-day work. In this way, the school ambassador program does more than just provide two helping hands – it also conveys a passion for experimenting.



Undersecretary Bernd Sibler (right) and WACKER Executive Board member Dr. Tobias Ohler conducted a joint experiment when the CHEM₂DO experiment kit was presented to Bavaria's Ministry of Education and Cultural Affairs.

WACKER supports [Science-Lab](#), a private-sector educational initiative that awakens children's interest in science at an early age (Science-Lab website available in German only). At our sites in Germany, we finance one-day Science Lab training seminars for preschool and elementary school teachers, and provide a discovery box – a tool that teaches children biology, chemistry, physics, astronomy and the earth sciences in a child-friendly way. During the period under review, WACKER financed Science Lab experiment fairs in Burghausen for children during the summer vacation.

In 2014 we took the helm as statewide sponsor and organizer of the [“Young Scientists”](#) competition in Bavaria for the ninth time (German-language website only). We also again sponsored the [Dresden/East Saxony Young Scientists Regional Competition](#) (German-language website 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:

- Nünchritz High School organizes Class 21 each year in collaboration with WACKER's Nünchritz plant and the Anerkannte Schulgesellschaft, a private education company in Saxony. This multi-disciplinary project allows seventh graders to try out different jobs, learning about a range of different professions – such as chemist, environmental researcher or fire safety expert – over the course of a week.
- WACKER provides the Liangfeng Senior High School in Zhangjiagang with funding for 25 students and six teachers who distinguish themselves through outstanding academic achievements. In particular, the WACKER scholarship provides financial support for students from disadvantaged backgrounds. Additionally, WACKER experts share their know-how at the high school by giving specialized classroom instruction on industrial silicone applications.
- In 2014, the WACKER HELP employee initiative provided financial support for 29 children from disadvantaged families in Fujia, a village in the Sichuan province of central China. In addition, WACKER Greater China's regional relief organization has been providing free hot lunches to students at WACKER Primary School in Fujia since 2011.
- Girls' Day: WACKER's Burghausen Vocational Training Center (BBiW) participates in this nationwide career information fair every year. Girls attending the event learn about careers as industrial mechanics, electrical maintenance and automation technicians, and chemical technicians.

Universities

WACKER attaches considerable importance to fostering young scientific talent and maintaining close contacts with universities. In 2013 and 2014, we sponsored some 320 final thesis projects and internships with students at over 50 universities internationally. In addition, Wacker Chemie AG and the Technische Universität München (TUM) extended their existing partnership in silicon research for another six years, with the TUM and WACKER agreeing to this in writing in February 2014. We are sponsoring the Institute of Silicon Chemistry, located on the Garching research campus near Munich, with a total of up to €2.5 million, a sum that will finance doctoral positions and the associated material resources.

WACKER and TUM founded the Institute of Silicon Chemistry in 2006. In recent years, more than 30 research projects have been conducted here, resulting in ten patents and over 35 scientific publications. In the seventh and eighth years since the Institute of Silicon Chemistry was founded at the TUM, we also sponsored 16 students (bringing the grand total to over 50 students since the Institute's inception). Ten of our students completed their doctoral theses in 2013/2014 (the Institute has produced a total of 30 doctoral theses since its founding). Two new graduates joined WACKER during the period under review to pursue careers in R&D.



The winner of the 2014 WACKER Silicone Award, Professor Akira Sekiguchi. The 62-year-old scientist teaches organic chemistry at the University of Tsukuba, Japan.

In 2014, WACKER partnered with the Technische Universität Berlin to organize an international scientific convention. The 17th International Symposium on Silicon Chemistry (ISOS XVII) and the jointly organized 7th European Silicon Days attracted some 600 researchers from the field of silicon and silicone chemistry to Berlin. During the convention, WACKER presented, for the 15th time, the WACKER Silicone Award for outstanding achievements in this area of research. The winner this time was Akira Sekiguchi, a professor of organic chemistry at the University of Tsukuba in Japan.

Chattanooga State Community College was honored with the prestigious 2013 Bellwether prize – awarded for leading community colleges into the future – at the Community College FUTURES Assembly's annual meeting. The college received the award in the "Workforce Development" category for its "WACKER INSTITUTE: Diplomas with Job Offers" project, which set an example for similar institutions. With WACKER POLYSILICON North America, the institute has been training employees for the Group's new polysilicon production facility in Charleston, Tennessee since February 2012. This WACKER production site is scheduled to start operating in the second half of 2015.

In 2013, WACKER Greater China organized a competition for universities. 185 students from three Chinese universities took part in the Chemical University Contest. During the final round of this multistage competition, eight student projects were presented and given distinctions. The contest aimed at promoting knowledge about WACKER products among future construction-industry managers, intensifying cooperation with universities, and attracting the next generation of specialists directly from universities. During the reporting period, WACKER Greater China also awarded grants totaling some RMB 90,000 (€13,000) to students at the Nanjing Forest University and Wuxi Jiangnan University.

WACKER Takes Part in German Scholarship Program

WACKER has participated in the German Scholarship Program sponsored by the Federal Ministry of Education and Research (BMBF) since 2013. The scholarship 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). Jasmin Haberl, a chemistry student at the TUM, was the first student that WACKER supported under the Germany Scholarship Program.

“For us, the Germany Scholarship Program is an excellent opportunity to support highly motivated young people and to advertise our company as a future employer to the best students of their subject areas,” said Markus Huber from WACKER’s Personnel Marketing team – both sides, in other words, profit equally from this partnership.

The national scholarship helps support students whose background presages great academic and career achievements. The performance concept underlying the scholarship has deliberately been given a broad scope, taking account of not only good grades and academic performance, but also willingness to take on responsibility, or success at overcoming hurdles in personal life or academic career.



Presenting the certificate at the TUM: WACKER’s Markus Huber and Ina Korsinek (right) from Personnel Marketing and scholarship student Jasmin Haberl (center).

Politics and Non-Governmental Organizations

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 dialog 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, 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 energy demand, we need globally competitive electricity prices and a secure power supply.
- We oppose all types 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 slow down the worldwide energy transition and climate protection.

Wacker Chemie AG and the Chinese Ministry of Commerce (MOFCOM) reached an amicable agreement on the issue of polysilicon exports to China. An agreement to this end was signed in Beijing in March 2014. WACKER, for its part, undertakes not to sell polysilicon produced at its European plants below a specific minimum price in China. MOFCOM, in turn, will refrain from imposing anti-dumping and anti-subsidy tariffs on this material. This agreement took effect on May 1, 2014, and is valid until the end of April 2016.

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 \(Chemical Industry Association\)](#) – 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 is a founding member of the [ChemDelta Bavaria](#) initiative, which was established in 2007. Companies in this chemistry research and production triangle want to improve and expand the region's economic competitiveness – in harmony with its communities and the environment. Improving the regional infrastructure is a major focus of ChemDelta Bavaria, which counts WACKER and its Burghausen site as one of its cornerstones. In addition to upgrading rail services, the initiative's infrastructure goals include expanding the A94 freeway between Munich and Passau – a stretch that is currently only partially complete. During the period under review, ChemDelta Bavaria gave presentations at parliamentary breakfasts in Munich and Berlin and, for members of the EU parliament in Brussels, as part of the Bavarian Industry Day.

Children

We attach particular importance to projects that help children and young people. In 2007 we began supporting [Die Arche](#) (The Ark; German-language website only), a Munich-based Christian charity for children and adolescents. 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 2013 and 2014 as well, each time donating €100,000 to the charity. 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. The government of Upper Bavaria presented WACKER with its honorary award for outstanding integration work in 2014, recognizing the company's sustained support of the charity.

WACKER's support for children and young people at a regional level is not limited to the company's focus on funding for The Ark. WACKER's own Burghausen Vocational Training Center (BBiW) accepted eight unaccompanied adolescent refugees from West and Central Africa in its youth guest house in 2014. In addition to intensive German lessons to help them in their new life in Germany, these young people are also taking an integration class at the Mühldorf vocational school. Their goal here is to obtain the diploma they need in order to begin vocational training.

Disaster Aid

WACKER HILFSFONDS (WACKER's 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 always matched all employee contributions to the fund.

In June 2013, Germany experienced devastating floods that caused economic damage totaling several billion euros. Several WACKER employees were affected by the flooding, as were social institutions in Austria and in the German states of Saxony and Bavaria. WACKER's relief fund appealed to employees to support affected colleagues. Employees responded in large numbers, donating approximately €52,000, which combined with the employer contribution amounted to €152,000 of available funding. The foundation paid the sum out to 20 flood victims.

Introduced in 2012, the company's cent-donation program has allowed WACKER's relief fund to finance an entire 200-student school in Sri Lanka, which welcomed its first senior class in 2014. Relief fund donations also financed a solar installation. The new roof-top technology provides the school in Kosgoda with the means to generate its own electricity, making it independent of shortfalls in the national grid.

The over 4,300 employees who participate in the WACKER relief fund 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, the participating employees donate 50 cents per month. This amount is then matched by the company for a monthly total of over €4,200 and an annual donation of over €50,000.

Thanks a Million!

WACKER's relief fund reached a milestone exactly one decade after a devastating event: a total of precisely €1,000,161 had been donated to the relief fund over the ten-year period to December 31, 2014.

In December 2004, a tsunami laid waste to vast stretches of land in Asia, with thousands losing their lives or livelihoods. WACKER employees spontaneously donated €100,000, a sum that the Group matched and then augmented by an additional €50,000. Together, this made a total of €250,000 available that could be used for aid projects quickly and with no red tape. This was also when the relief fund was established.



WACKER's relief fund has maintained a close partnership with the school in Kosgoda, Sri Lanka, for over ten years.

True to the principle of “helping people help themselves,” WACKER's relief fund has been supporting programs since 2005 that give victims of natural disasters the chance of a better life. WACKER's relief fund is setting a precedent not only in Sri Lanka, but also in China, Haiti and Pakistan, because the foundation focuses on education for children and young people in the aftermath of natural catastrophes.



Further Information

190 GRI Indicators

203 Glossary

Thank you for your interest in our sustainability report. We are always happy to receive your feedback or suggestions. Send us your comments directly using the dialogue functions featured in our online report at www.wacker.com/sustainabilityreport. Accessible in English and German, this report offers easy navigation and interactive functions, such as key-figure comparisons and download options.

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GRI Indicators



1. Strategy and Analysis

		Degree of Compliance	Info
1.1	Introduction by the CEO or Supervisory Board chairman	●	Introduction by the President & CEO
1.2	Key sustainability impacts, risks and opportunities	●	Goals and Future Topics Vision and Goals Environmental Protection Research and Development Demographic Change

2. Organizational Profile

		Degree of Compliance	Info
2.1	Name of the organization	●	About this Report
2.2	Primary brands, products and services	●	Group Structure and Operations Key Products and Services
2.3	Business areas and operational structure	●	Legal Structure
2.4	Location of organization's headquarters	●	Legal Structure
2.5	Countries in which the organization's major operations are located	●	Sales and Production Sites Group Structure and Operations
2.6	Nature of ownership	●	Legal Structure Shareholder Structure
2.7	Markets	●	Group Structure and Operations Key Products and Services  Major Markets and Competitive Positions
2.8	Scale of the reporting organization	●	KPIs Group Structure and Operations External Sales by Customer Headquarters Shareholder Structure Headcount Trend
2.9	Significant changes during the reporting period	●	Key Events 2013 – 2014 New Production Site in Germany  Key Events Affecting Business Performance
2.10	Awards received in the reporting period	●	Dialogue with Stakeholders Environmental Awards Compensation and Social Benefits Children

3. Report Parameters

		Degree of Compliance	Info
Report Profile			
3.1	Reporting period	●	About this Report
3.2	Date of most recent previous report	●	About this Report
3.3	Reporting cycle	●	About this Report
3.4	Contact for questions regarding the report	●	Contact
Report Scope and Limitations			
3.5	Process for defining report content	●	About this Report Dialogue with Stakeholders
3.6	Boundary of the report	●	About this Report
3.7	Limitations on the scope of the report	●	About this Report
3.8	Joint Ventures. Tochterunternehmen. Outsourcing	●	About this Report
3.9	Data measurement techniques	●	Controlled Documents and Controlling Instruments Environmental Performance Assessment Air Environmental Assessments Prevention
3.10	Effect of any re-statements of information provided in earlier reports	●	Environmental Performance Assessment Air
3.11	Changes in the scope and boundary of the report or in the measurement methods applied	●	Energy Air Prevention Accidents and Incidents
3.12	GRI index in tabular form with page numbers	●	GRI Indicators
3.13	Assurance: external assurance for the report	●	This report has not been assured by external third parties.

4. Governance, Commitments and Engagement

		Degree of Compliance	Info
Governance			
4.1	Governance	●	Management and Supervision  Work in the Committees
4.2	Independence of the Supervisory Board chairman	●	Management and Supervision
4.3	Governance body and/or independent members of management	●	Management and Supervision
4.4	Mechanisms for shareholders and employees to provide recommendations to the Executive Board or Supervisory Board	●	Management and Supervision Idea Management Employee Representation  WACKER Communicates Closely with Capital Markets  Corporate Governance Reporting
4.5	Linkage between Executive Board compensation and the organization's performance	●	Personnel Responsibility  Compensation Report
4.6	Processes in place for the governance bodies to ensure avoidance of conflicts of interest	●	Compliance  Corporate Governance Report and Declaration on Corporate Management
4.7	Expertise of the governance bodies in sustainability issues	●	Management Structures for Sustainability Personnel Responsibility  Targets for Supervisory Board Composition
4.8	Mission statements, corporate values and codes of conduct	●	Vision and Goals Business Principles Controlled Documents and Controlling Instruments
4.9	Procedures of the Executive Board and Supervisory Board for overseeing sustainability performance	●	Management Structures for Sustainability Personnel Responsibility Management Systems Controlled Documents and Controlling Instruments
4.10	Processes for evaluating the performance of the Executive Board	●	 Corporate Governance
Commitments to External Initiatives			
4.11	Implementation of the precautionary principle	●	Voluntary Commitments Environmental Protection Prevention  Risk Management Report

4. Governance, Commitments and Engagement continued

		Degree of Compliance	Info
4.12	Support of external initiatives	●	Voluntary Commitments Air Product Safety Work-Life Balance Politics and NGOs
4.13	Principal memberships in industry and business associations	●	Voluntary Commitments Dialogue and Awards Transport Safety TUIS: Accident Assistance Politics and NGOs
Stakeholder Engagement			
4.14	Stakeholder groups engaged by the organization	●	Dialogue with Stakeholders
4.15	Selection of stakeholders	●	About this Report Dialogue with Stakeholders
4.16	Approaches to stakeholder engagement (type/frequency)	●	Dialogue with Stakeholders Dialogue and Awards
4.17	Statements on key topics and concerns raised by stakeholders	●	Dialogue with Stakeholders

5. Performance Indicators

		Degree of Compliance	Info
Economic			
	Management approach	●	Group Structure and Operations Vision and Goals Neighbors
<i>Aspect: Economic Performance</i>			
EC1	Direct economic value generated and distributed	●	KPIs WACKER's Donations and Sponsorships  Statement of Income of the WACKER Group  03 Income Taxes
EC2	Financial implications of climate change	● ¹	Environmental Protection Costs Environmental Performance Assessment Energy Air  The WACKER Group's Prospects
EC3	Company's defined benefit plan obligations	●	Compensation and Social Benefits  13 Provisions for Pensions
EC4	Financial assistance received from government	●	iC4 Publicly Funded Research Projects
<i>Aspect: Market Presence</i>			
EC6	Spending on locally-based suppliers	●	Customer and Supplier Management Regional Procurement
EC7	Senior management hired from the local community	●	Diversity, Inclusion and Equal Opportunity
<i>Aspect: Indirect Economic Impacts</i>			
EC8	Infrastructure investments and services provided for public benefit	●	Logistics and Transport Neighbors Schools

5. Performance Indicators continued

		Degree of Compliance	Info
Environmental			
	Management approach	●	Goals & Outlook [Environmental Protection] Business Principles Management Structures for Sustainability Management Systems Controlled Documents and Controlling Instruments Compliance Environmental Protection Environmental Protection Costs Environmental Protection in Production Integrated Production Energy Air Sustainable Mobility Strategy Water Waste Nature Conservation and Biodiversity Logistics and Transport Product Stewardship
	<i>Aspect: Materials</i>		
EN1	Materials used by weight or volume	● ²	Integrated Production Waste  Procurement and Logistics
EN2	Percentage of materials used that are recycled input materials	●	Integrated Production Waste
	<i>Aspect: Energy</i>		
EN3	Direct energy consumption by primary energy sources	●	Energy Consumption
EN4	Indirect energy consumption by primary source	●	Energy Consumption
EN5	Energy savings	●	Integrated Production Energy
EN6	Energy-efficient products and services	●	Product Stewardship
	<i>Aspect: Water</i>		
EN8	Total water withdrawal by source	●	Water Consumption Tested Using the Global Water Tool [®]
EN9	Water sources significantly affected by withdrawal of water	●	Water Consumption Tested Using the Global Water Tool [®]

5. Performance Indicators continued

		Degree of Compliance	Info
EN10	Percentage and total volume of water recycled and reused		Water Consumption Tested Using the Global Water Tool®
	<i>Aspect: Biodiversity</i>		
EN11	Use of land in protected areas		Nature Conservation and Biodiversity
EN12	Significant impacts of activities in protected areas		Nature Conservation and Biodiversity
EN14	Strategies on protecting biodiversity		Nature Conservation and Biodiversity
	<i>Aspect: Emissions, Effluents, and Waste</i>		
EN16	Direct and indirect greenhouse gas emissions		Air
EN17	Other relevant greenhouse gas emissions (e.g. caused by business trips)		Air
EN18	Initiatives to reduce greenhouse gas emissions		Goals & Outlook [Environmental Protection] Integrated Production Air
EN19	Emissions of ozone-depleting substances by weight		Emissions to Air
EN20	NO _x , SO _x , and other significant air emissions by weight		Emission of Air Pollutants
EN21	Water discharge		Water Consumption / Emissions to Water
EN22	Waste by type and disposal method		Waste
EN23	Releases of hazardous substances by number and volume		Accidents and Incidents
	<i>Aspect: Products and Services</i>		
EN26	Initiatives to mitigate environmental impacts of products and services		iC4 – Electricity on Tap Product Stewardship
EN27	Percentage of products and packaging that are reclaimed	 ³	Waste Reducing Shipment Routes
	<i>Aspect: Compliance</i>		
EN28	Fines/sanctions for non-compliance with environmental laws and regulations		Compliance Cases
	<i>Aspect: Transport</i>		
EN29	Environmental impacts of transporting		Sustainable Mobility Strategy Logistics and Transport
	<i>Aspect: Overall</i>		
EN30	Environmental protection expenditures		Environmental Protection Costs

5. Performance Indicators continued

		Degree of Compliance	Info
Social Performance			
Labor Practices			
	Management approach	●	Goals & Outlook [Management] Goals & Outlook [Safety] Goals & Outlook [Employees] Business Principles Management Structures for Sustainability Personnel Responsibility Management Systems Prevention Headcount Trend Personnel Development Advanced Training Talent Management and Managerial Staff Demographic Change Diversity, Inclusion and Equal Opportunity Employee Representation Health Management
<i>Aspect: Employment</i>			
LA1	Total workforce by employment type and region	●	Headcount Trend Part-Time Employees
LA2	Total employee turnover by age group, gender, and region	●	2014 Employee Turnover Rate – Men and Women
LA3	Benefits provided to full-time employees only	●	Compensation and Social Benefits
<i>Aspect: Labor/Management Relations</i>			
LA4	Percentage of employees covered by collective bargaining agreements	●	Employee Representation
LA5	Minimum notice period(s) regarding significant operational changes	●	Headcount Trend We act according to the German Works Constitution Act (BetrVG). It does not specify a quantified minimum notice period.
<i>Aspect: Occupational Health and Safety</i>			
LA7	Injuries, absenteeism and work-related fatalities	●	Workplace Accidents Involving Permanent Staff and Temporary Workers Health Programs

5. Performance Indicators continued

		Degree of Compliance	Info
LA8	Risk control and programs with respect to serious diseases	●	Fit for Your Shift Health Management Health Programs Pandemic-Preparedness Plan
	<i>Aspect: Training and Education</i>		
LA10	Hours of training by employee category	●	Advanced Training
LA11	Skills management and lifelong learning	●	Advanced Training Talent Management and Managerial Staff
LA12	Performance and career development reviews	●	Advanced Training Talent Management and Managerial Staff
	<i>Aspect: Diversity and Equal Opportunity</i>		
LA13	Composition of senior management and employee structure (e.g. age/gender/culture)	●	2014 Demographic Analysis of German and International Sites Diversity, Inclusion and Equal Opportunity  Executive Board  Targets for Supervisory Board Composition
LA14	Compensation by gender and employee category	●	Diversity, Inclusion and Equal Opportunity
	Human Rights		
	Management approach	●	Goals & Outlook [Management] Business Principles Voluntary Commitments Compliance Customer and Supplier Management Diversity, Inclusion and Equal Opportunity Employee Representation Neighbors
	<i>Aspect: Investment and Procurement Practices</i>		
HR1	Investment agreements that include human rights clauses or screening	●	Customer and Supplier Management
HR2	Percentage of suppliers that have undergone screening on human rights and actions taken	● ⁴	Customer and Supplier Management

5. Performance Indicators continued

		Degree of Compliance	Info
	<i>Aspect: Non-Discrimination</i>		
HR4	Incidents of discrimination and actions taken	●	Diversity, Inclusion and Equal Opportunity
	<i>Aspect: Freedom of Association and Collective Bargaining</i>		
HR5	Operations that may be at significant risk	● ⁵	Voluntary Commitments Employee Representation
	<i>Aspect: Child Labor</i>		
HR6	Operations with significant risk and measures taken	● ⁶	Business Principles Voluntary Commitments Customer and Supplier Management
	<i>Aspect: Forced and Compulsory Labor</i>		
HR7	Operations with significant risk and measures taken	● ⁷	Business Principles Voluntary Commitments Customer and Supplier Management
	Society		
	Management approach		Business Principles Management Structures for Sustainability Personnel Responsibility Compliance Donations and Sponsorships Politics and NGOs
	<i>Aspect: Community</i>		
SO1	Policy to manage impacts on local communities	●	Dialogue and Awards Donations and Sponsorships Neighbors
	<i>Aspect: Corruption</i>		
SO2	Percentage and number of business units analyzed	●	Compliance Cases
SO3	Percentage of employees trained in anti-corruption procedures	● ⁸	Compliance Cases
SO4	Actions taken in response to incidents of corruption	●	Compliance
	<i>Aspect: Public Policy</i>		
SO5	Public policy positions and participation in public policy development and lobbying	●	Politics and NGOs
SO6	Total value of financial contributions to political parties, politicians, etc.	●	Donations and Sponsorships

5. Performance Indicators continued

		Degree of Compliance	Info
	<i>Aspect: Anti-Competitive Behavior</i>		
SO7	Legal actions for anti-competitive behavior	●	Compliance Cases
	<i>Aspect: Compliance</i>		
SO8	Fines/sanctions for non-compliance with laws and regulations	●	Compliance Cases
	Product Responsibility (Product Stewardship)		
	Management approach	●	Goals & Outlook [Products] Business Principles Management Structures for Sustainability Compliance Product Safety Personnel Responsibility
	<i>Aspect: Customer Health and Safety</i>		
PR1	Product life cycle stages for which health and safety impacts are assessed	●	Product Safety
	<i>Aspect: Product and Service Labeling</i>		
PR3	Principles/procedures related to product and service information	●	Product Safety
PR5	Customer satisfaction	●	Customer and Supplier Management
	<i>Aspect: Marketing Communications</i>		
PR6	Programs for adherence to laws and voluntary codes related to marketing communications	●	Product Information
	<i>Aspect: Compliance</i>		
PR9	Significant fines for non-compliance with laws and regulations concerning the use of products and services	●	Compliance Cases

1 We do not provide information on this aspect, because it is not possible to ascertain data. Apart from being highly complex, the quantification of such data is subject to factors beyond our control (e.g. pricing trends). We will thus still be unable to quantify these data in the future.

2 We currently do not report the weight or volume of the materials used, because the data are confidential.

3 We report these data only partially, because the percentage has no bearing on our business and it would be too complex to collate data.

4 We still do not provide information on the percentage. Having joined the "Together for Sustainability" initiative, we will be able to assess our 400 main suppliers on this point, among others, by the end of 2016.

5 We do not provide further information on this aspect, because, in general, we give our employees the opportunity to organize themselves as labor unions.

6 We do not provide further information on this aspect, because our hiring process and the conditions set down in our groupwide Code of Teamwork & Leadership ensure that no child labor is used.

7 We do not provide further information on this aspect, because our employment process and the conditions set down in our groupwide Code of Teamwork & Leadership ensure that no forced or compulsory labor is used.

8 We do not provide information on this aspect, because it is not possible to ascertain data. The information required is not collated when training is held.

GRI Application Level continued

	C	C+	B	B+	A	A+
Self Declared					●	
Third Party Checked						
GRI Approved					●	

● This indicator is fully complied with.

◐ This indicator is partially complied with.

📄 Annual Report 2014

Additional indicators are printed in gray.

Every single core indicator is presented. Gaps in numeration need to be attributed to the fact that only relevant additional indicators are presented in the index.

Glossary

A

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.

B

Bioavailability

Bioavailability is a term that describes the proportion of an active ingredient which has made its way unchanged into the bloodstream. It indicates how fast a substance (e.g. pharmaceutical) is absorbed and how much of it is available at the site of action.

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.

Biotechnology

Biotech processes use living cells or enzymes to transform and produce substances. Depending on the application, a distinction is made between red, green and white biotechnology. Red biotechnology: medicinal-pharmaceutical applications. Green biotechnology: agricultural applications. White biotechnology: biotech-based products and industrial processes, e.g. in the chemical, textile and food industries.

C

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 (circa 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.

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.

D

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.

Dispersion

Binary system in which one component is finely dispersed in another. VINNAPAS® dispersions from WACKER are vinyl-acetate-based binary copolymers and terpolymers in liquid form. They are mainly used as binders in the construction industry, e.g. for grouts, plasters and primers.

E

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.

Ethylene

Ethylene is 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 and automotive sectors, among others. For environmental and safety reasons, ethylene is transported through pipelines.

Exterior Insulation and Finish Systems (EIFS) / External Thermal Insulation Composite Systems (ETICS)

Systems for thermally insulating buildings and thus for increasing energy efficiency. They are made up of a combination of materials: adhesive mortar, insulation board, base coat, glass fiber mesh and finish coat. VINNAPAS® 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.

G

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.

H

Hexachlorobutadiene (HCBd)

A chlorinated organic compound which, at room temperature, is a colorless liquid with a mild odor. It occurs as a byproduct 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 (HCl)

The chemical industry uses HCl to generate valuable intermediates from organic and inorganic raw materials. The colorless gas dissolves in water to form hydrochloric acid.

I**IEA**

The IEA is the International Energy Agency (9, rue de la Fédération, 75739 Paris CEDEX 15, France). The IEA is a major organization that systematically analyzes the world's energy consumption and supply. Every year, it publishes a comprehensive report and several analyses.

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.

P**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.

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 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.

S

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 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, reagents in pharmaceutical synthesis or 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 on 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.

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.

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.

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.

V

VINNAPAS®

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, and so 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.

W

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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www.wacker.com/sustainabilityreport

A hand is visible on the right side of the page, holding a white architectural model. The background is a solid, light blue color. The overall image is a promotional or informational graphic for Wacker Chemie AG.

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