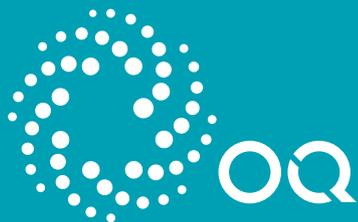


# Join us on our path

Sustainability Report 2021  
OQ Chemicals



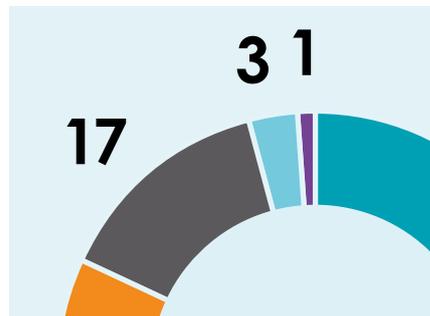




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Company Profile



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# FOREWORD

## Dear Readers,

we can look back on a successful fiscal year 2021 – even though still overshadowed by the coronavirus pandemic and the resulting disruptions affecting global supply chains. Our business model has proven as resilient and robust with sustainability being an integral part of our company strategy and a crucial enabler for our continued business success.

In 2021, we have set ourselves new goals in various areas, but one, in particular, stands out: OQ Chemicals wants to become climate-neutral by mid-century.

The road to this goal has already started in 2019 with our climate protection and greenhouse gas emissions reduction initiatives. In 2021, we bundled these projects and initiatives into a company-wide program called "reduce". You can read more about *reduce* on page 14.

In the next years, upcoming regulations like the EU taxonomy, China 30:60 and the "Biden climate & energy plan" will play a key role, not only for OQ Chemicals, but the whole industry. I am proud that we are taking a proactive approach here and are definitely "walking the talk".

In the area of social matters, occupational health & safety will continue to have highest priority, as well as ethical principles – not only in our company, but throughout the entire value chain. One focus for us will certainly continue to be everything to do with sustainable procurement.

We are delighted to have been granted Gold Status by EcoVadis for the third time in a row to manifest our sustainability performance. We were able to improve our performance compared to the previous year. For more sustainability highlights, please refer to Sustainability at OQ Chemicals.

Taking into account the central role that sustainability plays in our corporate strategy, I am sure that OQ Chemicals is well positioned and able to tackle the upcoming challenges. Now is the time to act and not just talk!

Best wishes,

Oliver Borgmeier



***"To successfully tackle the sustainable transformation and the social, environmental and economic challenges ahead, we need the ideas and commitment of every OQ Chemicals employee."***

**Dr. Oliver Borgmeier**, Chief Operating Officer,  
responsible for Downstream, International Assets at OQ



# COMPANY PROFILE

OQ Chemicals is one of the leading producers of Oxo Intermediates and Oxo Performance Chemicals and has its headquarters in Monheim am Rhein, Germany.

OQ Chemicals belongs to OQ, an integrated energy company with roots in Oman. Operating in 13 countries, OQ covers the entire value chain in the hydrocarbon sector from exploration and production through marketing and distribution of its products. OQ Chemicals represents the chemical sector of OQ with a core competency in the production, marketing and sale of oxo chemicals.

OQ Chemicals' portfolio includes over 70 products supplied to customers globally. These products are used for the production of coating resins, synthetic esters, cosmetics and printing inks. They find application in various industry segments, such as paints & coatings, lubricants & functional fluids, personal care, flexible packaging, and many more.

Around 1,400 people work for OQ Chemicals worldwide.

**1.7** million tons  
of production capacity

Annual  
revenue of  
**1.8** billion €

**70**  
products  
shipped to every continent

**6**  
production sites

**1,400**  
employees globally

# LOCATIONS



## Production Sites

**Bishop**  
approx.  
35 employees

**Bay City**  
approx.  
180 employees

**Amsterdam**  
approx.  
25 employees

**Oberhausen**  
approx.  
850 employees

**Marl**  
approx.  
70 employees

**Nanjing**  
approx.  
50 employees



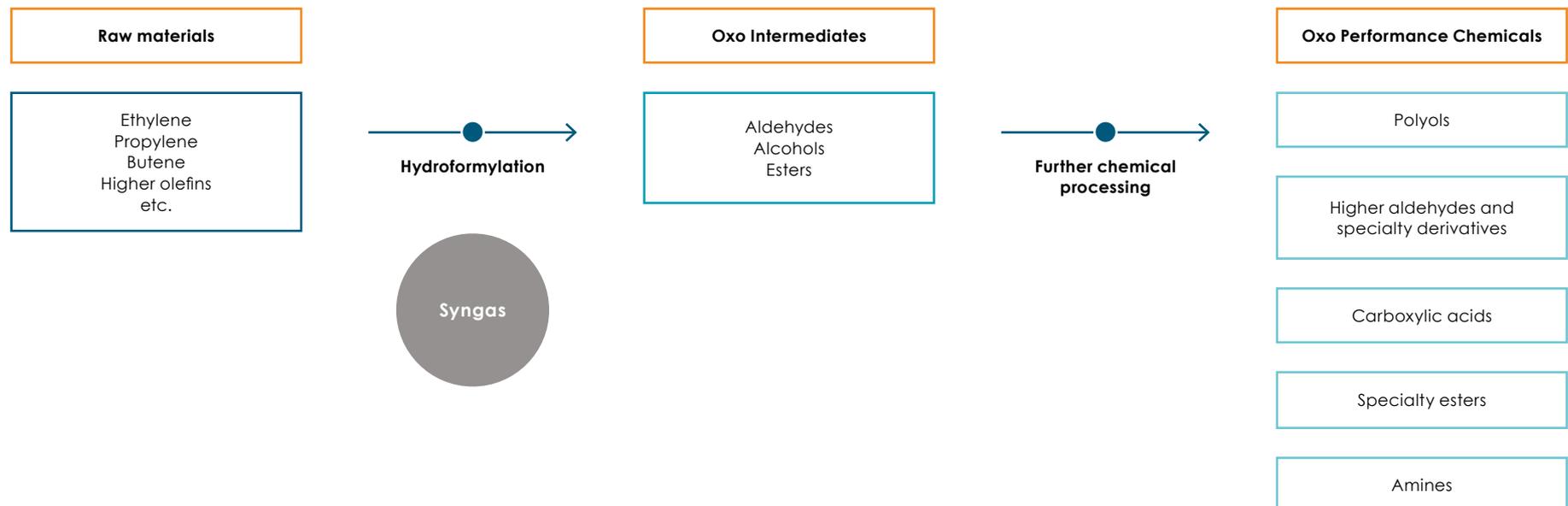
# OQ CHEMICALS' VALUE CHAIN

OQ Chemicals produces and sells more than 70 products worldwide. Our products are used in a wide variety of everyday applications and market segments, such as raw materials for coatings and ingredients for personal care formulations. They are also used as a component of safety glasses in the automotive industry, in lubricant formulations for cooling systems, and for the manufacture of printing inks.

OQ Chemicals' highly integrated production platform is based on the oxo process invented in 1938 by Otto Roelen at our site in Oberhausen. The oxo process, otherwise known as the hydroformylation process, transforms olefins, which are unsaturated hydrocarbons such as propylene and ethylene, to aldehydes by adding syngas.

These aldehydes are either sold externally or are used internally (i.e., captive requirements) as precursors for other Oxo Intermediates and Oxo Performance Chemicals such as carboxylic acids, polyols, amines, and specialty esters (see graphic below).

## Oxo Process





# APPLICATIONS

This overview shows applications and market segments which make use of OQ Chemicals' products.

## Oxo Intermediates

### Aldehydes

**Applications:**  
Lacquers,  
polymer additives,  
flotation reagents,  
flavors & fragrances

### Alcohols

**Applications:**  
Surface coatings,  
lacquers & paints,  
polymer additives,  
lubricants, solvents,  
disinfectants,  
printing inks

### Esters

**Applications:**  
Chemical intermediates,  
cosmetics,  
paints & coatings,  
printing inks,  
pharmaceuticals,  
solvents

## Oxo Performance Chemicals

### Higher aldehydes

**Applications:**  
Chemical intermediates,  
flavors & fragrances

### Polyols

**Applications:**  
High solids coatings,  
powder coatings,  
cosmetics,  
lubricants,  
polymer additives

### Carboxylic acids

**Applications:**  
Lubricants,  
siccatives,  
flavors & fragrances,  
polymer stabilizers,  
feed additives,  
corrosion inhibitors

### Amines

**Applications:**  
Agrochemicals,  
rubber chemicals,  
polymer additives,  
pharmaceuticals,  
surfactants,  
dye intermediates,  
specialty chemicals,  
corrosion inhibitors

### Specialty esters

**Applications:**  
Plasticizers,  
lubricants,  
coalescing agents

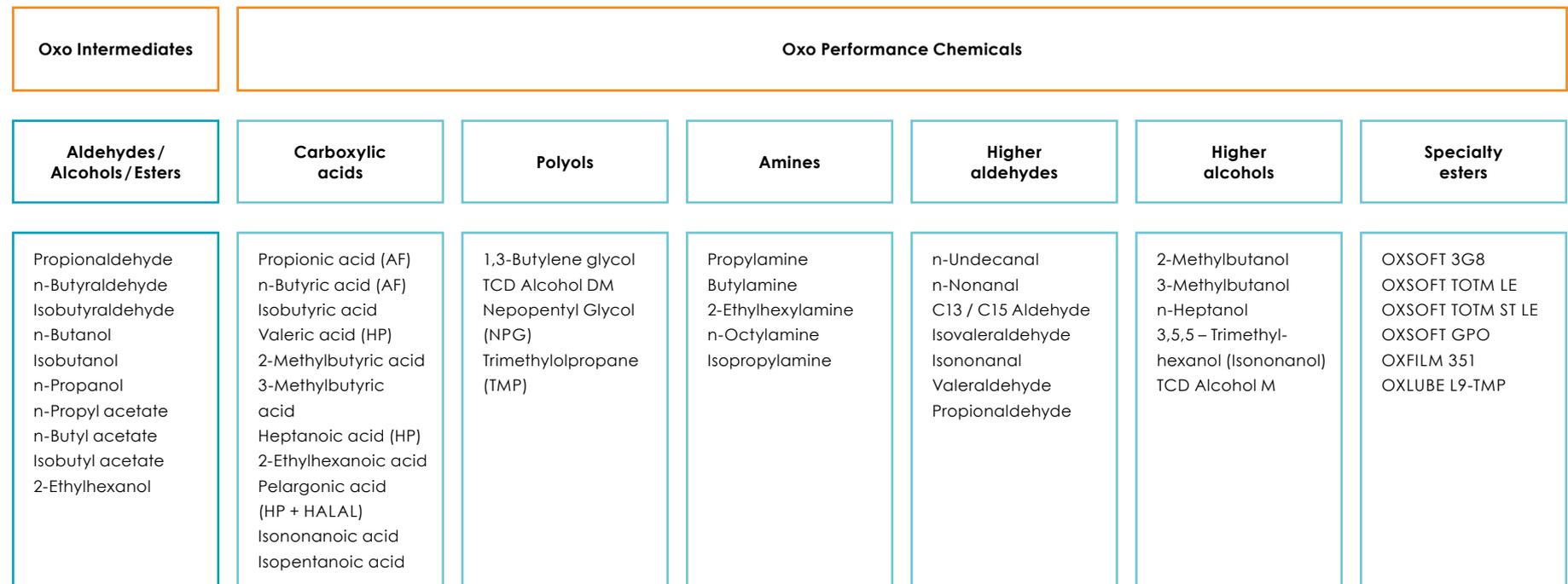
### Higher alcohols

**Applications:**  
Plasticizers,  
lubricants,  
flavors & fragrances,  
surfactants



# PRODUCT OVERVIEW

The product range of OQ Chemicals comprises more than 70 chemicals, which are subsequently processed by the industry. This diagram provides an overview of our general product portfolio (excluding customer-tailored products).





# leadUp! – LEADING TRANSFORMATION & UPLIFTING RESULTS

In 2021, OQ Chemicals initiated the leadUp! transformation program that bundles all strategic initiatives and projects under one roof in the leadUp! house. The holistic approach of the program tackles opportunities, challenges and transformational requirements paving the way for the future success of OQ Chemicals.

We will continue to be the partner of choice for high-quality oxo chemicals and services in the future. True to our vision of becoming a more sustainable and resilient company, we have focused on developing our sustainable transformation strategy.

The program centers around three strategic pillars:

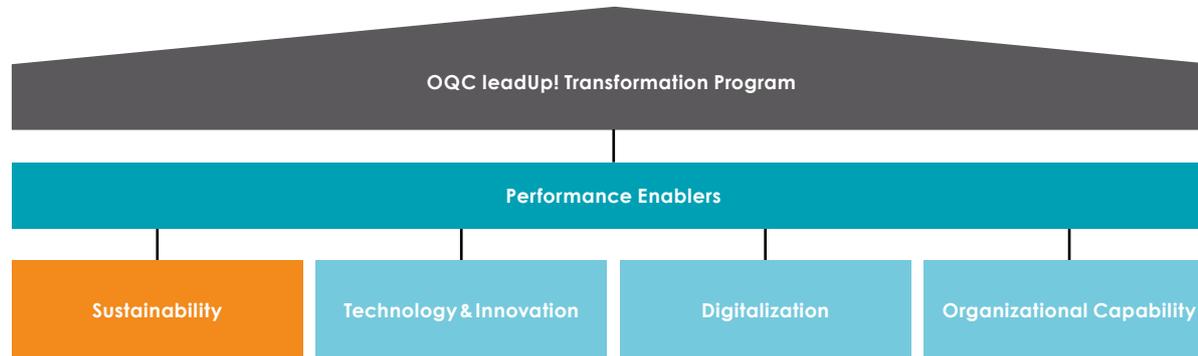
- Strengthen Oxo Intermediates,
- Grow Oxo Performance Chemicals, and
- Drive Functional Excellence.

Oxo Intermediates build the robust backbone of our business, on which selective growth of Oxo Performance Chemicals is realized. Functional Excellence is what makes OQ Chemicals successful; we work efficiently and have the right knowledge and tools in place.

The program also accounts for mega trends, which have a major impact on OQ Chemicals: demand, decarbonization, demography and digitalization. By proactively addressing these mega trends, OQ Chemicals aims to uphold and create competitive advantage, enable sustainable business growth and create value for our customers, employees and all our stakeholders.

We understand sustainability as an integral part of OQ Chemicals' strategy. This is true with regard to sustainable business practices, products, and services, and also to sustainable partnerships connecting us with our customers, partners and employees.





Together with the areas of technology and innovation, digitalization and organizational capabilities, sustainability forms the basis as a performance enabler for a successful transformation.

#### **reduce – Our Path to Climate Neutrality**

OQ Chemicals has set the goal of becoming climate-neutral by mid-century. To reach this goal, additional efforts for our business are essential to transform OQ Chemicals into a sustainable and resilient company. Being part of leadUp! program, the *reduce* initiative is combining our efforts in terms of greenhouse gas reduction along all scopes.

>> please refer to section *reduce*

#### **Highlights and Developments 2021**

In the fourth quarter of 2021, OQ Chemicals gained operational independence. The sole shareholder OQ Group in Oman took the decision due to the inter-

national focus of OQ Chemicals. Operational independence allows for OQ Chemicals to develop its future strategy and fully focus on its core business: the production and sale of oxo chemicals. A new organizational structure was introduced in November 2021 supporting the future growth ambition.

OQ Chemicals demonstrated that the current set-up supported a quick recovery of the business after the high time of the corona pandemic. The company demonstrated a strong economic performance in the year 2021. The success was mainly built on a strong-performing Oxo Intermediates business.

The strategic direction with focus on carboxylic acids and TCD Alcohol DM as primary growth drivers for the Oxo Performance Chemicals business line was supported by the recovery of the general business sentiment.

By the end of the year 2021 mechanical completion of the new TCD Alcohol DM capacity was celebrated. The expansion will enable OQ Chemicals to supply customers with additional volumes for special coating applications like in can and coil coatings replacing other formulations with less favorable characteristics. Continued focus was also given to the expansion of the carboxylic acids platform. One growth driver for the acids business is related to the replacement of high GWP (Global Warming Potential) solutions in synthetic lubricants.

Furthermore, major initiatives were kicked off – like leadUp! and *reduce* – that enable continued and sustainable success of OQ Chemicals in the future.

# SHAREHOLDERS' COMMITTEE

OQ Chemicals is part of the OQ Group. The Shareholders' Committee remains the highest decision-making body for OQ Chemicals and consists of representatives of OQ Group shareholders as well as industry experts.

With one change in 2021, the Shareholders' Committee is now chaired by Hilal al Kharusi (Chief Executive Commercial & Downstream). Ahmed Al Jahdhami stepped down as chairman of the Shareholders' Committee.

The current Shareholders' Committee consists of:

- Sultan Al Burtmani
- Hilal Al Kharusi (Chairman)
- Monika Engel-Bader
- Luis Fernandez
- Martin Lundin
- Patrick Quarles



Sultan Al Burtmani



Hilal Al Kharusi (Chairman)



Monika Engel-Bader



Luis Fernandez



Martin Lundin



Patrick Quarles



# OQ CHEMICALS' MANAGEMENT TEAM



**Dr. Oliver  
Borgmeier**

Managing Director and  
Chief Operating Officer  
OQ Chemicals

Dr. Oliver Borgmeier was appointed as Managing Director, Chief Operating Officer (COO) in December 2018. Dr. Borgmeier has been with the company for more than 15 years and has extensive experience in the fields of operations, strategy and business management.

Oliver Borgmeier holds a Ph.D. in Chemistry from RWTH Aachen University, Germany, and has worked for various multinational companies in the chemical industry.



**Stefan  
Schmidt**

Managing Director and  
Chief Financial Officer  
OQ Chemicals

Stefan Schmidt was appointed as Managing Director and CFO at OQ Chemicals in November 2015.

In 2008, he joined OQ Chemicals/OXEA as a Director of Finance and Administration and became Vice President of Finance and Global Controlling in 2014. Before joining OQ Chemicals/OXEA, Stefan Schmidt had taken various leading positions in Finance in the industry and started his career at Ernst & Young AG in Germany.

Stefan Schmidt holds a Master in Business Administration (Diplom-Kaufmann) from the University of Cologne and is a German public auditor (Wirtschaftsprüfer) and German tax advisor (Steuerberater) by education.

# reduce >>> our path to climate neutrality



SCOPE 1  
direct



SCOPE 2  
indirect



SCOPE 3  
indirect

Climate-neutral by mid-century: OQ Chemicals pursues ambitious climate targets that are to be achieved with new, environmentally friendly products and low-emission production technologies, a circular economy, and renewable energies. In this context, the strategic sustainability program *reduce* ensures efficient internal structures by bundling the generation of ideas throughout the company and driving the implementation of suitable measures.



**reduce: our path  
to climate neutrality**

How does a company eliminate its greenhouse gas emissions? Christoph Balzarek has to take a deep breath before answering this question. "With motivated employees, lots of good ideas, and step by step," he finally says.

The Executive Vice President for Corporate Development, Sustainability & Innovation at OQ Chemicals knows what he is talking about. Since 2021, he has headed the Group-wide sustainability program *reduce* – an internal think tank in which around 100 employees from all divisions in Oberhausen and Bay City regularly put their heads together. Divided into eight work-streams with different thematic focuses, they develop ideas for the short- and long-term reduction of greenhouse gas emissions, which are then evaluated, prioritized, and converted into a roadmap with concrete measures by a core team.

"Considering the steps already made in improving our carbon footprint, we are once again making significant progress within the framework of *reduce* and setting ourselves clearly defined goals," explains Christoph Balzarek. "Based on the 2017 baseline, we will gradually reduce greenhouse gas emissions – by 18% until 2025 and 30% by 2030. We will then tackle the rest, but are aware that we will have remaining greenhouse gas emissions to offset after all the measures to reduce them have been implemented. In concrete terms, this means that we want to be completely climate-neutral by mid-century at the latest."

To achieve the ambitious goals, the teams involved in *reduce* almost literally have to turn over every stone and bring all the pieces of the puzzle together. The planned reductions comply with the standards of the Greenhouse Gas Protocol, which means that in addition to direct emissions from production (Scope 1), indirect emissions from the generation of the purchased energy (Scope 2), and, among other things, emissions arising in connection with the raw materials, the transportation of products or commuting by employees (Scope 3) are included.



**“Based on the 2017 baseline, we will gradually reduce greenhouse gas emissions – by 18% until 2025 and 30% by 2030. By mid-century at the latest, we want to be completely climate-neutral.”**

— Dr. Christoph Balzarek, Executive Vice President for Corporate Development, Sustainability & Innovation





**“With increasing regulatory pressure and rising prices for CO<sub>2</sub> certificates, the demand for sustainable products is also growing. We need them in our portfolio if we want to remain the market leader – the sooner, the better.”**

— Jason Haverland,  
Executive Vice President of Global Sales



#### **Environmental protection ensures competitiveness**

The new climate targets underline OQ Chemicals' determination and are a clear commitment to the goals of the Paris Climate Agreement. “The avoidance of greenhouse gases is one of the greatest challenges of the 21st century,” says Christoph Balzarek. “At the same time, we are also pursuing economic goals with our commitment. We need to reduce greenhouse gas emissions so that we can continue to have a resilient business model in the future.”

Jason Haverland agrees. The Executive Vice President of Global Sales is in constant contact with his customers. He knows that they are enthusiastic about sustainable products. But he also knows that enthusiasm often wanes quickly when the environmental benefit is associated with rising purchase prices. But price increases are not inevitable, because OQ Chemicals benefits from falling climate compensation costs, better raw material utilization, and more efficient production processes with the greenhouse gas reduction, says Jason Haverland.

However, in view of the upcoming investments in new technologies and plants, climate neutrality without increasing costs is a major challenge. “By mid-century, however, the market will change dramatically. With increasing regulatory pressure and rising prices for CO<sub>2</sub> certificates, the demand for sustainable products is also growing. We need them in our portfolio if we want to remain the market leader – the sooner, the better,” says Jason Haverland, who is also the program ambassador of *reduce* at the locations in the USA.

In addition, he says, it should be kept in mind that the products manufactured by OQ Chemicals influence customers' Scope 3 emissions. “For the next generation of purchasers, the product carbon footprint of the purchased raw material will, alongside the price, be a crucial factor in decision making – and an important competitive advantage for OQ Chemicals if we do not waste any time in implementing our roadmap.”

**“Becoming climate-neutral by 2050 is a major challenge for OQ Chemicals, but also an important step to take, because environmental protection is a global task. This makes it even more important that we, as a chemical company, set a good example in achieving these ambitious goals.”**

— Alessa Hinzmann, Business Partner CEO





**reduce: our path  
to climate neutrality**

### First milestone in sight

So far, this has been achieved to perfection. "We are on track, making rapid progress, and have already achieved a lot," says Christoph Balzarek happily. Until now, more than 100 ideas for reducing greenhouse gases have been developed in the workstreams. They range from switching to energy-efficient LED lamps and air conditioners to the installation of photovoltaic systems, and larger projects, such as switching to environmentally friendly energy at all locations. More than 30 of these and other proposals are to be launched or implemented before the end of 2022, with progress continuing at the same pace thereafter. Currently, the focus is on filling this already comprehensive roadmap further to reach our milestone in 2025.

Apart from that, however, there are also measures that have already been implemented. For example, a new company car policy. With the exception of field sales, the vehicle fleet at German locations has been completely converted to electric cars. Alternatively, employees can also opt for an e-bike. The charging infrastructure required for this is being expanded as required. In addition, an analysis at all major sites made it possible to identify all by-product streams. "Thus far, we have burned the by-products to meet our energy needs. Now that we know how much greenhouse gas emissions we are emitting as a result, we are focusing strongly on recycling our by-products and returning them to production," explains Christoph Balzarek.



**"By optimizing our gas flares, we can already do without natural gas for the combustion of exhaust gases this year. This will enable us to reduce our CO<sub>2</sub> emissions significantly."**

— Kevin Hunt, Director of Operations, Maintenance and Technical, Bay City

**"OQ Chemicals' commitment to reduce is necessary in order for us to maintain competitiveness within the market, but we also have a social responsibility to ensure climate neutrality by mid-century. I am proud to work for a company that is prioritizing sustainability from top management throughout the organization."**

— Kristina Zahlman,  
Operations Manager, Bay City

Under the leadership of Kevin Hunt, Director of Operations, Maintenance and Technical, the US team in Bay City has also been busy collecting ideas for *reduce*. "About 27 of them have even made it into the company-wide top list," says Kevin Hunt happily. Bay City is also in a good position in the race for the largest CO<sub>2</sub> savings already achieved. "We have started to shift the transportation of goods from trucks to trains or ships and will continue to exploit the associated savings potential," explains the operations manager. "In addition, by optimizing our gas flares, we can already do without natural gas for the combustion of exhaust gases this year. This will enable us to reduce our CO<sub>2</sub> emissions significantly," says Kevin Hunt.

In any case, Christoph Balzarek is quite optimistic when he considers the planned savings of 18% by 2025. "Even the initial measures, which are relatively easy to implement, reduce OQ Chemicals' greenhouse gas emissions by around 13 to 15%. And we've only just started fishing in the well-filled pool of ideas from *reduce*."



**reduce: our path  
to climate neutrality**

**Emission reduction with circular economy and biogenic raw materials**

This pool of ideas also includes scenarios that have a significantly greater impact on the carbon footprint and are correspondingly more cost-intensive than those mentioned so far. The main role here is played by possible measures to reduce the greenhouse gas contribution of the raw materials used in the medium to long term. In order to meet this challenge, OQ Chemicals must find a suitable answer to the question of how the carbon contained in the raw materials can be completely neutralized in terms of the carbon footprint.

**“With reduce, we have embarked on an exciting journey that is already showing that all areas must do their bit so that OQ Chemicals can become a climate-neutral company and remain fit for the future. The fact that we are setting the course for this today is an enormous motivation for me personally.”**

— Martin Riering, Lead Utilities, Oberhausen

Fundamentally, there are two primary options in this regard. Number one: by intensifying the circular economy – instead of continuing to burn waste and allowing CO<sub>2</sub> to escape into the atmosphere, it is kept in the system as efficiently as possible. The raw materials are therefore not recycled thermally, but materially, for example for the production of synthesis gas. Number two: by exchanging fossil raw materials for biogenic raw materials – depending on the supply situation, OQ Chemicals can, for example, buy or produce some of the necessary raw materials itself, for example from biomass or recycled chemicals.

**Huge demand for green energy**

“Both are interesting and viable options for us, which we will analyze thoroughly on the basis of studies, especially since they involve investments in the multi-digit million range for new plants,” explains Mariola Rötzheimer, Director of Global HSE. “In addition, we have to change the basis for our own steam generation. However, this is exactly what brings us a giant step forward in the reduction of greenhouse gases: because by completely avoiding waste incineration, we would reduce our greenhouse gas emissions by about 80%,” explains Mariola Rötzheimer, who has been working in the company for over 20 years and heads the “Measurements and KPIs” workstream for reduce.

**“By completely avoiding waste incineration, we would reduce our greenhouse gas emissions by about 80%.”**

— Mariola Rötzheimer,  
Director of Global HSE





**reduce: our path  
to climate neutrality**

**“Since my student days I have been working intensively on topics such as the circular economy and the sustainable use of CO<sub>2</sub>. That makes me even more pleased that OQ Chemicals is now taking this huge step and that I can be a part of it.”**

— Benjamin Schieweck,  
Head of R&D – Technology Center Oberhausen

**“I am primarily driven by the concern for our planet, but also by the unique momentum that we are currently experiencing in the market, which is unleashing incredible power, because, in view of the current framework conditions, there is a great deal of acceptance for rethinking the chemical industry and making it sustainable.”**

— Dirk Teufel, Head of Regional Feedstock  
Sourcing Europe



reduce >>>

Theoretically, this step could be taken soon. The necessary technologies and processes are largely available. But there is a catch. So far, OQ Chemicals has been able to cover almost all of its energy requirements itself through steam and electricity generation. If steam and electricity are lacking because no more waste is being incinerated, the energy deficit will have to be compensated by purchasing green electricity or green hydrogen. “However, it is still unclear where this energy is supposed to come from in sufficient quantities at economically reasonable prices,” Mariola Rötzhelm points out.

A study by the German Chemical Industry Association (VCI) shows the scale of the problem. According to the study, the German chemical industry alone will need around 680 terawatt-hours of green electricity by 2050 – 120 terawatt-hours more than Germany currently consumes in total. “This is a major challenge for our entire industry, which depends on a rapid expansion of renewable energies for its climate goals. Whether this will happen, however, is uncertain. In our scenarios, we are therefore also considering measures to generate green electricity at our sites and to further lower energy demand in order to reduce dependence on the energy market,” summarizes Mariola Rötzhelm.

**Climate enabler for other companies**

However, the circular economy and new technologies and processes not only improve OQ Chemicals' carbon footprint – they also foster the climate-neutral transformation of other companies. This is because biogenic synthesis gas or synthesis gas based on recyclable raw materials can be used to develop new, bio-based products. “For example, we can use sunflower oil to produce products for the lubricant industry or make oils from biogenic sources such as orange peel or fir resins usable for the chemical industry,” explains Christoph Balzarek.

In addition, OQ Chemicals cooperates with Tier 1 and Tier 2 companies in the field of battery production and develops immersion cooling solutions for electromobility that can significantly increase the efficiency of batteries. “In other words, as part of *reduce*, we are specifically looking at how we can position ourselves as an enabler in the ecosystem – as a company that offers cross-industry solutions to climate problems with its products and helps others to reduce their greenhouse gas emissions,” says Christoph Balzarek.

In any case, Christoph Balzarek certainly does not have sleepless nights when he thinks about *reduce* and the associated changes. “On the contrary. Since the program started, I have been getting up every morning excited because I can do something for the environment in my workplace,” he says. “And it makes me really happy to see the great dedication of our employees in Europe and the US to developing new ideas and supporting the transformation.”



**Sustainability is an integral part of our company strategy and determines our future business success. It is a commitment to us, not only a program. We believe in sustainability.**

**We want to fulfill stakeholders' needs whilst reducing our environmental footprint to sustain a profitable, competitive business model.**

# SUSTAINABILITY AT OQ CHEMICALS



Sustainability at OQ Chemicals – is about taking responsibility for the social, ecological and economic impact of our business activities. Sustainability as a business concept forms the basis for meeting the expectations of our stakeholder groups and ensuring the long-term success of our company.

OQ Chemicals uses various tools to measure its sustainability performance and identify areas for improvement. These include external assessments by rating agencies (e.g. EcoVadis), as well as conducting on-site audit assessments (Together for Sustainability<sup>1</sup> "TfS"). Internally, we compare our performance against the requirements of multiple frameworks (e.g. ESG<sup>2</sup>, TCFD<sup>3</sup>) by using gap analysis<sup>4</sup> to identify further opportunities for improvement.

## Key Highlights at OQ Chemicals

In 2021, we managed to manifest our sustainability performance and re-confirmed our Gold Status on the EcoVadis platform. We improved our rating achieving a total score of 72 points (compared to 70 points in 2020). OQ Chemicals belongs to the 5% best-performing companies in its industry.

With a score of 96%, the first Together for Sustainability (TfS) audit was completed at the Oberhausen site. With this audit, our sustainability performance has been verified against a defined set of criteria on management, environment, health & safety, labor & human rights, and governance issues.

Climate neutrality by mid-century – this is the goal of the *reduce* program launched by OQ Chemicals in 2021. The first important targets are already in sight: OQ Chemicals plans to reduce its greenhouse gas emissions vis-à-vis the 2017 baseline by 18% by 2025 and 30% by 2030. In 2022, the first projects and initiatives will be implemented. >> [please refer to section Story](#)

In 2021, OQ Chemicals has received International Sustainability and Carbon Certification (ISCC)<sup>5</sup> under the ISCC Plus scheme for its German production sites and administrative office in Monheim. The ISCC Plus certification allows us to offer sustainable alternatives to our fossil-based portfolio based on biomass, biogenic wastes and residues, or renewables to focus on circular economy. This supports our customers in producing their own ISCC Plus COMPLIANT products and marks another milestone on our path towards greater sustainability.

At OQ Chemicals, we have identified four UN Sustainable Development Goals (SDGs) that we specifically have an impact on with our core business activities (please see p. 22). OQ Chemicals is also a listed member of the Responsible Care initiative and adheres to its guiding principles.

<sup>1</sup> Together for Sustainability is an industry initiative focused on advancing sustainability practices in the chemical industry supply chain and currently gathers 30 companies around a single auditing and assessment standard.

<sup>2</sup> ESG refers to the consideration of criteria for sustainable financial investments in the environmental, social and governance areas.

<sup>3</sup> The Task Force on Climate-related Financial Disclosures (TCFD) is a global industry-led initiative on corporate reporting of climate-related financial opportunities and risks.

<sup>4</sup> Gap analysis is a management tool used in business administration to identify strategic and operational gaps.

<sup>5</sup> ISCC is a globally recognized system for mass balance certifications. A certification under the ISCC Plus scheme testifies the sustainable use and traceability of biomass, bio-based or recycled materials throughout the value chain.

### Implementation of the SDGs at OQ Chemicals

At OQ Chemicals, we have identified four SDGs that we actively contribute to:

**SDG 4 – Quality Education:** OQ Chemicals invests in the training and education of its employees throughout the company. In the city of Oberhausen, OQ Chemicals is one of the most important employers in the community and offers vocational training for young people in industry-related occupations.



**SDG 8 – Decent Work and Economic Growth:** The management structure of the company is set for economic success and sustainable growth based on defined procedures and processes. We adhere to a Company Code of Conduct that objects any form of discrimination, child or forced labor.

**SDG 12 – Responsible Consumption and Production:** At OQ Chemicals, we entertain safe and efficient processes. As the founder of the oxo synthesis, we are experts in our processes. Our goal is to maximize output whilst minimizing input. All our products are labeled and supplied with the correct documents to guarantee safe handling by the recipient.



**SDG 13 – Climate Action:** As a manufacturer of chemicals, we acknowledge our responsibility and impact on the environment. We continuously work on the improvement of our energy balance and greenhouse gas emissions worldwide and have set ourselves short-term, mid-term and long-term goals.

>> [please refer to section Global Climate Change](#)



**Materiality Analysis**

The basis for our strategic activities is our materiality analysis conducted in mid-2019. It defines the prioritization of projects and campaigns. The results were confirmed by the materiality analysis of the OQ Group conducted in the year 2020. >> please refer to OQ Sustainability Report 2019, page 30

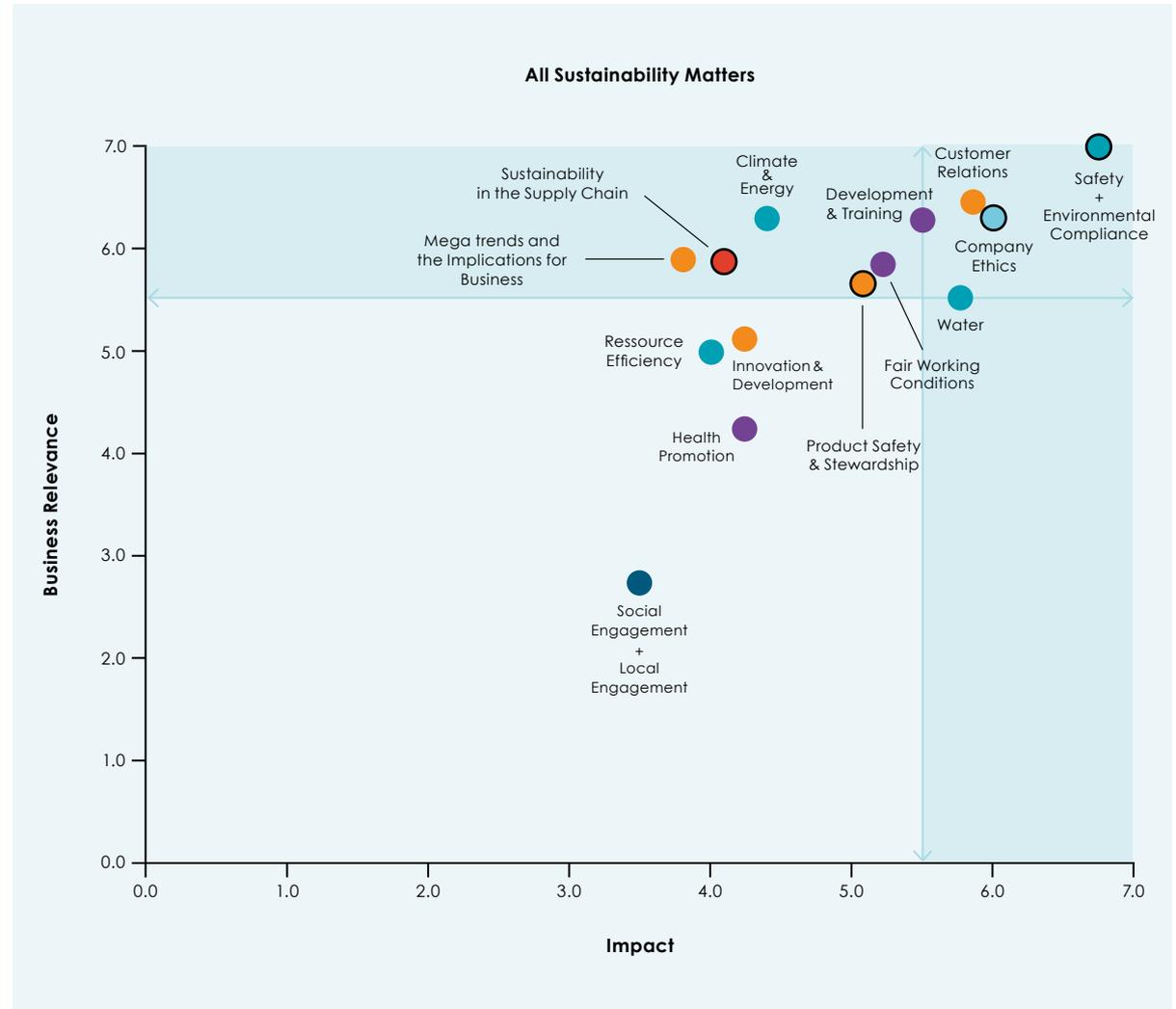
Our targets and activities contributing to our financial, environmental and social performance are described in the various Reporting Sections. They all feed into the achievements of the following objectives, which are aligned with the most material topics for OQ Chemicals.

○ stakeholder relevance  $\geq 5.5$

**Relevant Stakeholders:**

Customers, investors/owners, government/regulators, OQ Chemicals employees, suppliers, media, NGOs, consumers

**Materiality Analysis**





## Most Important Topics for OQ Chemicals

<b>Environment</b>	<ul style="list-style-type: none"> <li>• Environmental Compliance</li> <li>• Safety</li> <li>• Climate &amp; Energy</li> <li>• Water</li> </ul>	<ul style="list-style-type: none"> <li>• <b>We reduce our environmental footprint to become climate-neutral by mid-century.</b> Environmental compliance is ensured at all times and is a key priority for OQ Chemicals.</li> <li>• We want to reduce absolute greenhouse gas emissions (Scope 1, 2) by 18% until 2025 and by 30% until 2030 (base year 2017).</li> <li>• We want to reduce our energy consumption globally by 10% until 2025.</li> <li>• We want to reduce our waste globally, by shifting 5% of the total waste into a higher waste hierarchy level.*</li> <li>• We want to achieve zero HSE incidents within OQ Chemicals.</li> <li>• We source water in a sustainable manner and develop measures within our <i>reduce</i> program to reduce our water consumption.</li> </ul>
<b>Employee Topics</b>	<ul style="list-style-type: none"> <li>• Fair Working Conditions</li> <li>• Development &amp; Training</li> </ul>	<ul style="list-style-type: none"> <li>• <b>We see our employees as our most important resource. We want to attract and retain the talent we need in the future because we believe in the value of our employees, the diversity and experience they bring to OQ Chemicals.</b></li> <li>• We want to ensure high-quality training and development of our employees.</li> </ul>
<b>Value chain</b>	<ul style="list-style-type: none"> <li>• Sustainability in the Supply Chain</li> </ul>	<ul style="list-style-type: none"> <li>• <b>We source in a sustainable manner.</b> We screen and select our suppliers based on environmental, social and economic criteria. We want to reach 100% coverage of all raw materials suppliers and service providers.</li> <li>• We want to increase the amount of renewable feedstock that we are using in our production of oxo chemicals to contribute to a more circular chemical industry.</li> </ul>
<b>Corruption &amp; Bribery</b>	<ul style="list-style-type: none"> <li>• Company Ethics</li> </ul>	<ul style="list-style-type: none"> <li>• <b>We follow high ethical principles.</b> Our ethical principles are documented and trained based on our Code of Conduct, which sets the standard for conducting business in a responsible and fair manner.</li> </ul>
<b>Sector-specific</b>	<ul style="list-style-type: none"> <li>• Product Safety &amp; Stewardship</li> <li>• Customer Relations</li> <li>• Mega trends</li> </ul>	<ul style="list-style-type: none"> <li>• <b>We have our eyes on (mega) trends.</b></li> <li>• We want to secure safe and compliant products and processes and constantly evaluate and improve them to determine risks and opportunities.</li> <li>• We want to entertain trustful relationships with our customers.</li> <li>• We have identified climate change and thus decarbonization as mega trends that have major impact on OQ Chemicals.</li> </ul>

\*Waste hierarchy: 1. Avoidance // Prevention 2. Re-Use 3. Recycling // Recovery (energy) 4. Disposal



# Sustainable Governance





# SUSTAINABLE GOVERNANCE

## Foreword

Since November 2021, OQ Chemicals has been operating independently under the parent company of OQ with a new organizational structure.

## Leadership Team

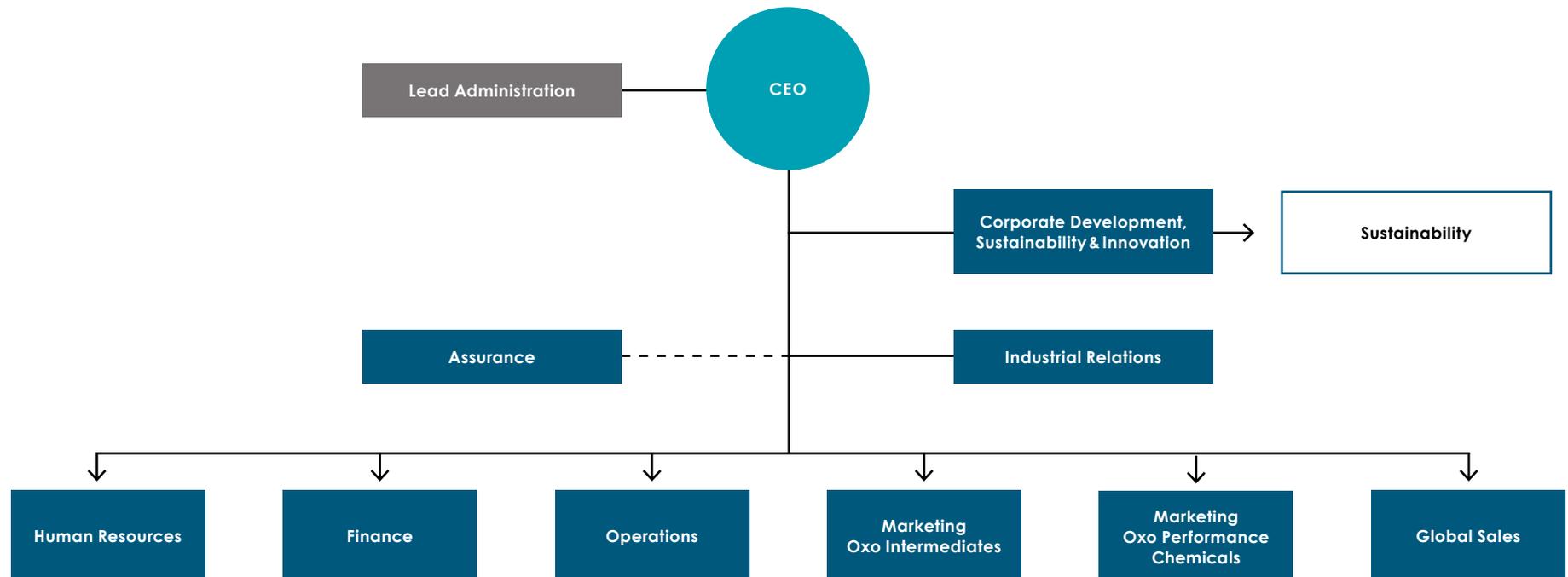
With organizational independence, a new Leadership Team has been established, consisting of eight members heading the different organizations. They form the highest senior management level and report to the CEO.

In 2021, Dr. Oliver Borgmeier has been confirmed in his position as Chief Executive Officer and will act in parallel as Chief Operating Officer (COO) until further notice. He represented the main point of contact to the Shareholders' Committee.

The Leadership Team is responsible for the strategic and operative governance of the company.

OQ Chemicals Leadership Team meetings are held frequently, chaired by the CEO. Various reporting tools and business meetings across all organizations ensure a constant flow of information and allow for global monitoring of activities and strategy. OQ Chemicals also holds regular meetings with its Shareholders' Committee.

The following graph shows the organizational structure of OQ Chemicals.

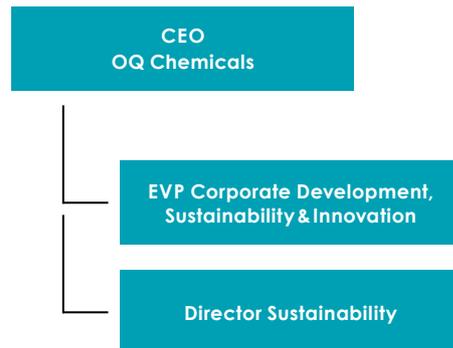




### Sustainability Management

Sustainability management is integrated into the Corporate Development, Sustainability and Innovation organization. The Director of Sustainability is responsible for the operational implementation of OQ Chemicals' sustainability strategy and reports to the Executive Vice President (EVP) of Corporate Development, Sustainability and Innovation.

The EVP of Corporate Development, Sustainability and Innovation is responsible for OQ Chemicals' Corporate Project Management Office, Technology Center and Corporate Development. The role reports directly to the CEO.



### Integrated Management System

OQ Chemicals uses an Integrated Management System (IMS), which serves to put the policy and strategy guidelines in the context of the organization's legal and standards requirements as well as to put the concerns of interested parties into practice.

The target defining process, described in the IMS, is the basis for our long-term targets (including sustainability objectives). The company and the different organizations must derive operational objectives, which take the aspects of safety, environmental protection, quality and energy efficiency into account and make it possible to use the available resources to achieve strategic company objectives and to implement corporate policy.

The IMS is described in the available management manual, which is appended to the process descriptions and working instructions of all organizational units. It ensures a common understanding of processes and responsibilities throughout the organization and documents them.

Key leaders within OQ Chemicals – including the Managing Directors – periodically carry out a review of the efficacy and performance of the Integrated Management System (at least once a year). The preparation and documentation are organized by the appointed Global Management Officer of OQ Chemicals.

### Company Scorecard (CSC)

The Company Scorecard (CSC) of OQ Chemicals serves as an overarching monitoring and steering tool displaying the performance of OQ Chemicals. The CSC is updated monthly and shows the relative performance according to the different key performance indicators (KPIs) for the fiscal year.

The KPIs for 2021 entailed those for the HSE (health, safety and environment), Profitability (EBITDA) and Strategic Priorities (project delivery, financial excellence, improvement of existing business).

The goals for the fiscal year were determined by the Leadership Team of OQ Chemicals together with its board in 2020. >> [please refer to Sustainability Report 2020](#)

For 2022, a comparable process is carried out.

The CSC provides the basis for the individual performance targets.

### Business Ethics – Compliance Management and Ethical Business Practices

Per legal definition, compliance means "the combination of all measures to avoid violations of the law," and therefore builds the basis for every long-term successful business. Adherence to legal requirements is mandatory for all OQ Chemicals' employees.

OQ Chemicals' Compliance Management is designed to ensure adherence with legal requirements, internal company policies and ethical business practices.

In 2021, multiple virtual compliance awareness trainings were conducted by the OQ Ethical Conduct team with a focus on general compliance, bribery, third party due diligence and whistleblowing. OQ and OQ Chemicals employees participated in the trainings. A new whistleblowing system for OQ Chemicals has been procured, which will replace the old system in 2022.

A new Code of Conduct was introduced and is publicly accessible (published on the website). Every new employee receives the Code of Conduct and corresponding training depending on the exposure level of the employee's role. Refresher training on the Code of Conduct is to be conducted every two



years – also depending on the exposure level of the employee. Further awareness training campaigns for specialized topics are planned for 2022 (e.g. competition, anti-bribery).

The members of the legal division are available for all questions related to the Code of Conduct and if a violation of the Code of Conduct needs to be reported. Contact details are accessible on the OQ Chemicals intranet. Third parties can also report violations of the Code of Conduct via an anonymous whistleblowing system (available in English and German language).

The Code of Conduct sets the standards for the conduction of business in a responsible and fair manner. The scope of the Code of Conduct is: fair treatment of employees, social responsibility and prohibition of child labor, business integrity, handling and communication of company information, environmental protection, preventive health, workplace and plant safety, handling of company property, financial integrity / data security, fair competition, anti-bribery, anti-fraud, charitable donations, political contributions, and the trade on international markets.

All OQ Chemicals organizations are subject to regular audits according to the IMS and to processes defined in the related risk and internal audit management processes. Every employee is encouraged to report possible breaches of company policies anonymously via the whistleblowing system of OQ Chemicals.

Failure to comply with the Code of Conduct will most likely include disciplinary/legal measures, which could even lead to a termination of the employment. Illegal

behavior will be prosecuted in a court of law. For 2021, no violations were reported.

### ProMotiv 2.0 – Turn Ideas into Innovation



Technical, productivity and logistics project ideas are managed through the "stage-gate process" called ProMotiv BIP (Business Improvement Plan). The target is to prioritize and accompany projects along their life cycle, manage programs, budget resources and enhance knowledge and information transfer between different organizations. The process enables the organization to understand at any time if the project pipeline functions properly.

By 31 December 2021, a total of 49 BIP initiatives were registered in ProMotiv BIP. 22 have been successfully implemented, 20 are in the process of implementation and seven have been archived without completion.

ProMotiv BIP will be integrated into the central PMO (Program Management Office) of the leadUp! program, in which all projects and initiatives are organized centrally. The leadUp! program bundles all OQ Chemicals projects and initiatives under one roof and was introduced in November 2021.

### Supply Chain Management

The Vice President Global Supply Chain is responsible for procurement, logistics, planning & yield accounting and customer relations. The guidelines and processes for the various functions are described in the IMS.

The purchasing of raw materials is part of an integrated planning approach (S & OP process = Sales & Operations Planning process).

The procurement budget entails the costs of raw and support materials, maintenance and repair operations payments (MRO), as well as logistics costs. Around 55% of the budget is spent at the production sites in Europe. OQ Chemicals has more than 1,900 suppliers globally – the majority providing MRO services.

Major raw materials >> [please refer to section OQ Chemicals' Value Chain](#) for the production of Oxo Intermediates and Oxo Performance Chemicals are olefines (ethylene, propylene, higher olefines), syngas and natural gas. Around 70% of the raw materials are sourced locally, close to our production sites.

In general, the qualification process of a new supplier follows a defined process with a focus on the supplier's capability, quality and safety standards.

OQ Chemicals employs a "supplier evaluation tool" for the rating of its suppliers in the respective procurement organizations. The supplier rating consists of different parameters referring to quality and safety aspects, as well as to environmental parameters.

The supplier evaluation allows for a ranking of suppliers and has an influence on the preference and selection



of suppliers. Over 95% of our suppliers (based on volume and spending) hold ISO certifications.

To ensure sustainable procurement practices throughout the value chain, OQ Chemicals has its own Supplier Code of Conduct in place covering human rights aspects in alignment with the OQ Chemicals Code of Conduct. Related procedures and documentation are set up in the IMS. The scope of the Supplier Code of Conduct currently covers all raw materials suppliers to European production sites. In 2022, the Supplier Code of Conduct will be replaced by a new Third Party Code of Conduct, which conveys the standards of business conduct we expect not only from our suppliers, but also from our distributors, agents, business consultants and all other third parties with whom OQ Chemicals works.

In addition to our Supplier Code of Conduct, OQ Chemicals has developed a policy statement on human rights. It is stored in the IMS and will be published on our website in 2022.

All raw materials suppliers to European production sites are screened regarding their CSR / sustainability performance based on publicly available information (risk analysis). The results are documented in the Procurement department and reassessed at least bi-annually. 96% of OQ Chemicals' raw materials suppliers to European production sites (based on total number of suppliers) are based in OECD countries and disclose extensive information on business ethics and practices. Only a minority of 4% are not OECD-based and do not publish information on their business practices.

These non-OECD-based suppliers have to provide sufficient evidence for company ethics (like an appropriate code of conduct) or receive OQ Chemicals' Supplier Code of Conduct for signature.

In case a supplier fails to sign or is suspected of not fulfilling the requirements, an escalation process with the ultimate step of termination of business relationships will be started. Every new raw materials supplier is screened when commencing a supply relationship.

In 2021, we have extended our sustainable procurement process to MRO suppliers to the Oberhausen site and to the US procurement organization for raw materials suppliers. All raw materials suppliers to US sites have been evaluated according to specified criteria within 2021 (without any critical findings). Due to regulatory changes, sustainable procurement processes in Europe and the US will be mapped again by the end of 2022. Where needed, processes will be adapted.

In 2021, a "human rights in the supply chain" training was held for the European raw material and MRO procurement organizations in order to sensitize for this topic.

#### Data Management

As a company that takes responsibility for the protection of its customers, employees, and others, OQ Chemicals works to comply with all data security laws and avoids unauthorized transfers of personal information.

No complaints were issued in 2021 regarding data protection.

#### Risk Management & Internal Audit Approach

In 2021, OQ Chemicals re-instated the Audit and Risk Committee as a sub-committee of the Shareholders' Committee. The committee consists of two members of the Shareholders' Committee and the Chief Executive Assurance of the OQ Group.

The Assurance function including the risk management reports to the Audit and Risk Committee (ARC) of OQ Chemicals. Relevant risks are submitted quarterly to this committee, which will decide upon countermeasures.

The Assurance function supports the OQ Chemicals ARC in two ways: by providing insights and as an independent assurance that the risk management, governance, and internal controls are operating effectively and efficiently.

The goal of risk management is to identify and evaluate risks at the earliest possible stage and to limit such risks through adequate measures, as well as to avoid any risk that might jeopardize our ability to continue our business sustainably.

To ensure the capturing and monitoring of all risks – bottom-up and top-down – OQ Chemicals is using a web-based risk management system (based on R2C = Risk to Chance), into which all departments globally (represented by dedicated risk owners) are invited to enter and update their risks regularly. The process is embedded in OQ Chemicals' Integrated Management System, and all employees are notified about all relevant changes by the change management system.



Areas of risk for OQ Chemicals include (please also refer to the Annual Report 2021 by the Oman Oil Holding Europe B.V.) operating, financial, market, as well as climate change risks (physical risks) and risks derived from mega trends.

In 2022, OQ Chemicals will conduct a climate scenario analysis to identify and assess the potential range of plausible business, strategic and financial impacts from climate change (transition and physical risks). Outcomes will be implemented into the risk management system of OQ Chemicals.

## Stakeholder Engagement

A constant exchange with our stakeholders is a key to OQ Chemicals' sustainable success.

The key stakeholders of OQ Chemicals are customers, investors/owners, employees, government/regulators, and suppliers (as identified in the materiality analysis).

Local communities play an important role as direct neighbors to our production sites, as well as media and NGOs.

A transparent and consistent information flow is key for trusting relationships. At OQ Chemicals, we employ different channels throughout the different organizational levels; the most important one being direct contact. In the following section specific examples are provided.

### Customers

Conferences, tradeshow and fairs, regular customer visits, surveys and special events like roadshows and the webpages of OQ Chemicals are our major channels for close communication with our business partners.

Since 2021 was marked by travel and overall contact restrictions due to the coronavirus pandemic, personal face-to-face contacts were limited to an absolute minimum.

During these challenging times, a strong customer orientation and an excellent communication with our suppliers played an even more essential role for our business.

For the majority of the communication processes, virtual meeting platforms were used, accompanied by emailing and phone calls. In 2021, key conferences in our industry segments were held virtually, and OQ Chemicals again started a series of our own webinar sessions, covering information on products, applications and technical developments.

The customer satisfaction survey planned for 2021 has been postponed due to the organizational changes of OQ Chemicals.

Key topics in general: product safety & quality, process safety, (environmental) compliance, supply reliability, pricing, relationship management.

Customers (end users of products) are important stakeholders for OQ Chemicals – consumers have the

largest impact on product demand in the end market. As a manufacturer of base chemicals, OQ Chemicals' direct involvement with consumers is limited and occurs indirectly through the value chain.

### Investors / Owners

OQ Chemicals is owned by Oman Oil Company S.A.O.C. (OOC), a commercial company wholly owned by the Government of Oman. The dialog with the parent company is guaranteed by regular board meetings.

### Government / Regulators

Legal compliance has the highest priority and is mandatory for the company and its employees. The dialog with government/regulators occurs through different channels and is maintained according to the different requirements. Through the membership in various industry-relevant associations like the CEFIC (Conseil Européen des Fédérations de l'Industrie Chimique), VCI (Verband der Chemischen Industrie), REACH consortia and TCC (Texas Chemical Council), OQ Chemicals is also communicating with regulatory bodies.

Key topics in general: corporate governance and (environmental) compliance, product and process safety.

### Employees

OQ Chemicals maintains close contact with its employees via the intranet, regular newsletters, townhall meetings – which were held virtually throughout 2021 –, surveys and other related tools as performance reviews and formats tailored to the organizations.

The IMPULSE online-tool invites OQ Chemicals employees to submit ideas for improvement in all areas. These suggestions are collected and evaluated by defined and qualified OQ Chemicals employees on a regular basis. In 2021, 193 ideas were collected (five more than 2020). 33 ideas were accepted, of which 14 ideas have already been implemented, 136 are currently being evaluated and 24 have been neglected.

In 2021, a global anonymous survey was conducted to evaluate learning preferences of OQ Chemicals employees with the goal to improve the trainings on offer as well as the overall digital learning experience, considering that a high number of employees continued to work from home.

Key topics in general: fair working conditions, development and training, occupational health and safety, in-house changes, compliance and values, employee satisfaction, business development.

### Suppliers

OQ Chemicals entertains long-term and trusting relationships with its suppliers. The supplier base globally entails raw materials suppliers, as well as maintenance, repair operations (MRO) and logistics suppliers.

>> please also refer to section [Supply Chain Management](#)

A close dialog with suppliers is generally maintained via direct contact, industry-related conferences and meetings, tradeshow and fairs.

In 2021, the contact – as in other areas – was maintained via virtual meeting platforms, emailing and phone calls.

Examples for supplier topics addressed: product safety and quality, supply reliability and timing, pricing, (environmental) compliance, renewable feedstock, product carbon footprint.

### Local Communities

OQ Chemicals' impact on local communities is manifold; OQ Chemicals represents an important employer – especially in Oberhausen and Bay City, where our major production sites are located – and offers job opportunities and apprenticeships. As a manufacturer of chemicals, OQ Chemicals also has a high responsibility for its impact on health, safety and the environment.

We interact with local communities via regional media, social events like Open House Days, allowing our neighbors to get an insight into our current activities. Furthermore, we are active in various local organizations with representatives, e.g. the Texas Chemical Council – Outreach committee or as an active member of the “EmscherGenossenschaft” in Oberhausen, where OQ Chemicals actively contributes to the ecological restoration project of the Emscher river. In the local organizations, OQ Chemicals and stakeholders work together on the respective projects.

In 2021, visitors to our sites were strictly limited and the interactions with organizations shifted to virtual meetings.

Examples for topics addressed: process & product safety, (environmental) compliance, OQ Chemicals as an employer, local contributions.

### Media and NGOs

For OQ Chemicals it is very important to have a transparent and open dialog with media and NGOs to show what is happening behind the scenes of our chemical plants. Especially local media are an important stakeholder. For example, if OQ Chemicals plans to build a new unit or a turnaround is coming up (involving a lot of maintenance work), which will likely have an impact on local residents, many neighbors obtain their information through the local press. The media representatives are therefore regularly informed on important topics via press releases, background discussions or interviews.

In 2021, OQ Chemicals was in close contact with local Media to inform and update on the coronavirus pandemic and the OXOLUTION program.

OQ Chemicals is also in contact with NGOs or associations in the neighborhood of its production sites. Depending on the project, OQ Chemicals organizes its own information events or maintains direct contact to the associations.

Examples for topics addressed: process & product safety, (environmental) compliance, local projects, in-house changes.



# FOCAL TOPICS AHEAD

Based on our materiality analysis and continuous evaluation of our sustainability performance, we have defined our short- to mid-term focus areas.

"Completion" of climate strategy 	Operational eco-efficiency: Water 	People Management 	Human Rights 	Sustainable Procurement 
<p>With <i>reduce</i> we have our program to become climate-neutral by mid-century.</p> <p>We will define and manage physical and transition climate risks according to EU taxonomy regulatory (and CSRD* guidelines) by end of 2023.</p>	<p>We want to reduce our environmental footprint and source our water in a responsible and efficient manner. Since water usage and consumption will become a pressing topic, we will re-evaluate our approach to water management by end of 2023.</p>	<p>We see our employees as our most important resource. We will define a new talent management program concept by end of 2022 (to attract, retain and develop).</p>	<p>We follow high ethical principles. All our employees are trained according to our Code of Conduct, and we follow a strict Human Rights policy. We continuously improve our processes and will revise our Human Rights assessment process until end of 2024.</p>	<p>We source our raw materials and services in a sustainable manner.</p> <p>We will have 100% of raw materials and service providers evaluated on ethical principles according to LkSG** by end of 2023 globally.</p>

\* The Corporate Sustainability Reporting Directive (CSRD) is the new EU legislation requiring all large companies to publish regular reports on their environmental and social impact activities.

\*\* "Lieferkettensorgfaltspflichtengesetz" (LkSG): Act on Corporate Due Diligence Obligations for the Prevention of Human Rights Violations in Supply Chains



# Economic Performance





# ECONOMIC PERFORMANCE

## Global Economic Development<sup>1</sup>

The recovery in global economic activity since mid-2020 has been more vigorous than expected, with output in most OECD countries now close to or above pre-pandemic levels.

The strength of the rebound has not yet permitted a full healing of the global economy from the effects of the pandemic. The world has foregone the growth that would have occurred in 2020 and the first half of 2021: global GDP in mid-2021 was still 3.5% lower than projected before the pandemic.

The rapid recovery in global demand over the past year and the slower recovery of production capacities in some sectors have generated supply shortages. While new COVID-19 infections and the number of deaths have been reduced substantially in many advanced economies, outbreaks are continuing to occur in some parts of the world, including many European economies, extending some supply constraints and creating new ones.

Shutdowns and other sanitary restrictions from the continued spread of the coronavirus around the world have contributed to the persisting supply disruptions that are holding back the recovery, and are putting strong upward pressure on some prices. Consumer price inflation increased rapidly in, for example, the United States, Germany, and many emerging market and developing economies. Overall, risks to economic prospects have increased, and policy trade-offs have become more complex.

Growth of GDP for 2021 raised to 5.9%, compared to a decline of 3.1% in 2020.

The forecast for emerging market and developing economies is marked up slightly, reflecting upgrades across most regions. China achieved the earliest and initially the strongest output recovery from the pandemic, reflecting a strong public health response to the initial outbreak that allowed the economy to reopen before other countries. Growth forecasts in other regions have been revised up slightly for 2021. The EU economy is rebounding from the pandemic recession faster than expected with a GDP growth of 2.9% in 2021 after a decline of 4.6% in 2020.

Despite the coronavirus pandemic and the associated supply constraints, the German chemical-pharmaceutical industry delivered a strong performance in 2021. Production rose by 4.5% compared to the previous year, and turnover increased by 15.5% to approximately 220.0 billion € caused by a solid rise in producer prices (+8.5%), according to the German Chemical Industry Association / Verband der Chemischen Industrie (VCI). Simultaneously, the cost of naphtha alone increased by 70%, and renewable raw materials, metals or minerals were also more expensive than the previous year. These developments can be explained by the fact that the industry's industrial customers continued their recovery course on all continents. Global demand for chemicals, wishing to prevent a scarcity of materials and to further build stocks, developed with a correspondingly positive trend.

## Revenue by Region

Share of sales in %



The US chemical industry has witnessed a strong recovery since the beginning of 2021, with demand increasing from the major end markets such as construction and health & safety. This was driven partly

<sup>1</sup> OQ Chemicals' analysis of the global economy is based on figures and forecasts provided by renowned institutions, such as the Organization for Economic Co-operation and Development (OECD) and the International Monetary Fund (IMF).



by a rebound in US GDP, which increased to 5.6% during 2021 after declining by 3.1% in 2020. During the first half of 2021, the industry experienced supply chain disruptions caused by extreme weather events when significant chemical capacity along the US Gulf Coast went idle. With supply chain challenges easing, commodity chemicals have already achieved pre-pandemic sales levels in the second half of 2021 on a year-over-year basis. After a 7.2% contraction in 2020, US industrial production rose by 5.5% in 2021.

#### Business Development at OQ Chemicals

OQ Chemicals' volumes and financial results were negatively influenced by two unplanned events, winter storm in Bay City (March–April) followed by a Force Majeure, and the limited Syngas availability in Oberhausen (September–October) followed similarly by a Force Majeure announcement. In Bay City, there was a planned major turnaround as well. Despite volume constraining events, overall demand and volume grew by 11% compared to 2020.

The overall variable margin reached 622.5 million €, 59.4% above the prior year. Margins peaked in the second and third quarter driven by the Oxo Intermediates segment, where strong demand was paired with a tight supply situation due to logistic bottlenecks, and so exceptional spot opportunities arose especially in Europe. Major oxo units were running at high rates to maximize the benefit from this attractive market situation. From the peaks reached at the end of the second quarter and beginning of the third quarter, there was a slight gradual decline in average margin due to increasing raw material prices and competition.

#### Results of Operations

€ million	2020	2021
Net Revenues	1,065.6	1,730.1
Cost of Sales	(973.4)	(1,455.9)
Gross Profit	92.2	274.2
SG&A	(42.1)	(58.9)
R&D	(7.7)	(10.0)
Other Operations Income (Expense)	(4.6)	7.1
Operating Result	37.8	212.4
Financial Result	(63.1)	(47.9)
Income Tax	(40.5)	(41.9)
Net Income (Loss)	(65.8)	122.5
<b>EBITDA</b>	<b>132.2</b>	<b>311.7</b>

Consolidated Income Statement as per Special Purpose Report (OQ Chemicals International Holding GmbH)

In the USA, decreasing supply/competition created additional demand and higher margins for OQ Chemicals' Oxo Intermediates. Demand for Propanol was also strong in a tight market. Oxo Performance Chemicals showed a slow but gradual recovery, while its margin remained below pre-pandemic level.

The year 2021 was the strongest year in the company's history with an EBITDA of 311.7 million €. Capital expenditures amounted to 71.3 million €, with growth projects being on track. Despite increasing working capital driven by higher raw material prices, such as Rhodium, cash flow remained strong and closing cash reached 188.6 million €.

In October 2021, S&P revised its outlook on OQ Chemicals to "positive" with affirming a "B-" rating (outlook positive). S&P considers the sovereign rating of Oman and the OQ Group as a cap on OQ Chemicals' rating. Moody's kept OQ Chemicals International Holding GmbH's corporate family rating (CFR) at 83 with a stable outlook.

Further financial details can be found in the Financial Statements 2021.



# Health, Safety and Environment



# HEALTH, SAFETY AND ENVIRONMENT

Health, safety, and environmental protection (HSE) are collectively ranked our first priority at OQ Chemicals.

At OQ Chemicals, we continue to entertain established global HSE and site-specific HSE functions. Historically, OQ Chemicals' HSE organizations comprise the matters of security under the roof of "safety" (e.g., emergency management, site security etc.). The following pages describe our HSE policy, our organizational set-up and give an overview of HSE highlights in 2021.

[>> please refer to Occupational Health and Safety for more detailed information](#)

## OQ Chemicals' HSE Policy

It is OQ Chemicals' policy to design, build, run, and maintain our operational units and processes with a focus on high environmental and safety standards. OQ Chemicals is committed to the protection of the environment, the reduction of adverse environmental impacts and meeting all environmental compliance obligations crucial to our industry. Our products are developed, evaluated and documented in a responsible manner so that our employees, customers, the public, and the environment are protected from avoidable risks. We ensure compliance with every relevant regulation and that all employees receive appropriate training, thereby enabling them to effectively contribute to HSE performance and HSE improvement processes.

Neighbors, customers, and authorities are informed on our activities including possible risks through direct dialog, media, and various communication channels.

OQ Chemicals' HSE management and standards are documented in our IMS. [>> please also refer to Sustainable Governance](#)

Our standards are based on the requirements of national and international regulations, the requirements of ISO 14001, ISO 9001, ISO 45001, and OQ Chemicals' internal policies. Core requirements of ISO 50001 serve as a guideline for our global energy management. The HSE standards and policies cover all OQ Chemicals' activities and employees. Regular internal audits take place in order to evaluate if processes are fit for purpose. [>> please refer to Risk Management & Internal Audit Approach](#)

All our sites are certified according to ISO 9001 and also have an environmental management system in place in accordance with the requirements of ISO 14001. All European sites are certified according to ISO 50001.

Our site in Nanjing was certified according to ISO 45001 in 2020. In 2021, preparations were made for the certification of the European sites. The audit will be carried out in the first quarter of 2022.

OQ Chemicals has received International Sustainability and Carbon Certification (ISCC) under the ISCC Plus scheme for its German locations Monheim, Oberhausen and Marl. ISCC is a globally recognized system for mass balance certifications. A certification under the ISCC Plus scheme testifies the sustainable use and traceability of biomass, bio-based or recycled materials throughout the value chain.

Furthermore, OQ Chemicals has obtained a FAMI-QS certification for its German location Monheim for the product Butyric acid as a feed ingredient (FI) in 2021.

FAMI-QS is a worldwide quality and feed safety management system for the sector of specialty feed ingredients and certifies the suitability of substances for animal feed purposes.

## Global HSE Organization

Within the organization of OQ Chemicals, Global HSE provides proposals to Senior Management to revise and update existing HSE principles, policies and strategies, which are coordinated with all OQ Chemicals HSE departments.



Certificates	ISO 9001:2015	ISO 14001:2015	ISO 50001:2018	ISO 45001:2018	SCCP	GMP+ B1	ISCC Plus	FAMI-QS
<b>Europe</b>								
Marl	X	X	X				X	
Monheim	X	X	X			X	X	X
Oberhausen	X	X	X		X		X	
Amsterdam	X	X	X					
<b>North America</b>								
Bay City	X	X						
Bishop	X	X						
Houston	X	X						
<b>Asia</b>								
Nanjing	X	X		X				

Global HSE is involved in setting HSE goals and key performance indicators. In cooperation with different functions, Global HSE develops programs and initiatives and assures that best practices are shared between the sites and organizational units of OQ Chemicals.

The Global HSE organization stands for a continuous improvement of OQ Chemicals' HSE activities.

#### HSE at the OQ Chemicals Sites

Each OQ Chemicals site has one or more assigned HSE responsables. Our two biggest sites in Oberhausen and Bay City have HSE site organizations in place with dedicated personnel. The smaller sites have assigned employees who are responsible for HSE topics (e.g., the site directors). They are supported by experts from Global HSE or site HSE experts.

HSE responsables consult and support – in cooperation with the Global HSE organization – leadership and employees to solve HSE-related problems and to improve HSE performance and culture. By auditing and controlling, they aid to ensure compliance with national regulatory requirements as well as with OQ Chemicals' HSE standards and policies. They also support a global cross-site and cross-functional exchange on HSE topics and best practices. Environmental, health and safety-related risks based on OQ Chemicals' operations and services are evaluated according to defined processes (in the IMS) and are documented in the risk data base. >> [please refer to section Risk Management & Internal Audit Approach](#)

At OQ Chemicals, environmental protection, health and safety are understood to be the responsibility of each employee.

HSE-relevant topics generally cover:

- Environmental protection (water and waste management, energy and emissions (air, noise and light, soil protection), remediation, emission trading)
- Occupational safety, industrial hygiene, healthcare and medical services
- Process safety
- Fire protection
- Permits
- Security



All OQ Chemicals employees receive appropriate training on the above-mentioned topics, thereby enabling them to effectively contribute to HSE performance and HSE improvement processes. In 2021, 22,500 hours of training were recorded and are also reported monthly to the OQ Group.

For all matters of product safety and quality management the organization Product Safety and Quality (PSQ) is responsible. >> [please also refer to Product Safety & Labeling](#)

### HSE Committees & Councils

Each OQ Chemicals site has established HSE committees or councils, consisting of a site leadership team, HSE experts and employee representatives, who jointly work on HSE topics. At the German sites legally required "Arbeitsschutz- und Umwelt-Ausschüsse" (committees for occupational safety and environment) work on HSE programs. At our sites in the USA, China and the Netherlands similar councils are in place, such as the Employee Safety Councils in the USA.

### HSE Performance

OQ Chemicals aims to reduce negative impacts on the environment, health and safety to an absolute minimum. All related policies and processes are described in the IMS following not only regulatory requirements but also standards and norms as described under "OQ Chemicals HSE policy". Safeguarding of products and services provided by OQ Chemicals is described under >> [Product Safety & Labeling](#).

Our ultimate key goal within OQ Chemicals is to achieve zero HSE incidents.

An incident is an "unexpected adverse event that may be associated with a damage".

The incident is categorized as environmental, fire and explosion, or injury incident.\*

All HSE incidents (including near misses) are reported by using the OIS (OQ Chemicals Incident Information System). Incidents are investigated and, if indicated, measures are implemented derived from the identified causes. The OIS database is used for the documentation of incidents worldwide, including categorization and classification. The database also serves as information platform.

\*Environmental incidents include all incidents in all areas of the company (e.g., production facilities, warehouses, workshops, office buildings and infrastructure facilities) that have an impact on air, water, soil, noise, waste, sewage, light or human health.

The category fire and explosion (F&E) covers all incidents where fires, explosion and smouldering fires (smoke) have occurred as a result of unintentional release of flammable substances or unintentional ignition of flammable materials.

The category (personal) injury is assigned to all incidents in which the physical well-being of a person has been compromised or endangered.

Near misses are incidents that fortunately did not happen. Nevertheless, they are also reported and investigated like incidents. The results are incorporated into processes and programs.

The overall HSE performance is measured and reflected in the Company Scorecard (CSC).

OQ Chemicals has been using lagging indicators for environmental, health and safety performance (tracking of incidents) since the late 1990s and leading indicators since 2018.

The following table depicts the HSE performance (lagging indicators) in 2021, 2020 and 2019 within each category:

#### Number of Incidents

	2019	2020	2021
<b>Environmental</b>			
K1 – Major	0	0	0
K2 – Serious	0	0	2
<b>Injuries</b>			
K1 – LTI <sup>1</sup>	3	6	2
K2 – IWLT – MTC <sup>2</sup>	1	4	3
<b>Fire &amp; Explosion</b>			
K1 – Major	0	0	0
K2 – Serious	0	0	0

<sup>1</sup>LTI = Lost time incident

<sup>2</sup>IWLT = Incident without lost time (IWLT = MTC\*)

\*medical treatment case



In 2021, there were no serious or major fire & explosion incidents. Product releases due to leakages at heat exchangers led to the two environmental K II incidents, which could be quickly solved.

The OSHA (Occupational Safety and Health Administration) regulations have served as an internationally applied standard for classifying work-related injuries at OQ Chemicals for more than 20 years and will continue to do so.

OQ Chemicals is not only recording injuries of its own employees; also contractor injuries are recorded and included into key figures and statistics.

OQ Chemicals was able to lower the OSHA Incident rate (OIR) to 0.27 (prior year: 0.42) and the Lost Time Injury rate (LTIR) to 0.18 (prior year: 0.34). For the German sites, the Thousand Man Quota in 2021 was 0.91 (prior year: 3.49) due to less recordable incidents in 2021.

For OQ Chemicals employees and contractor employees a Total Recordable Injury Frequency (TRIF) of 1.54 (prior year: 3.09) was achieved, with a LTIR of 0.62.

The OIR and LTIR are still significantly lower than the industry average (OIR reference values "US Business of Chemistry": 1.7 (2018), 1.9 (2019) and US Responsible Care Companies: 0.74 (2018), 0.73 (2019))\*.

#### Incident Rates

	2019	2020	2021
OIR <sup>1</sup>	0.34	0.42	0.27
LTIR <sup>2</sup>	0.25	0.34	0.18
TMQ <sup>3</sup>	2.6	3.49	0.91
TRIF <sup>4</sup>	–	3.09	1.54
LTIR <sup>5</sup>	–	1.86	0.62

<sup>1</sup> OSHA Incident rate = respective incidents per 200,000 working hours

<sup>2</sup> Lost time incidents per 200,000 working hours

<sup>3</sup> Thousand Man Quota = reportable injuries per thousand employees

<sup>4</sup> Total Recordable Incident Frequency (including contractors)

<sup>5</sup> Lost time incidents per 1 Mio employees and contractor working hours

Our good safety performance continued and improved in 2021. Nevertheless, our goal remains zero incidents.

Typical incidents at OQ Chemicals are "slip, trip and fall" incidents, as well as cuts and bruises. Incidents directly linked to contact with chemicals, which might be thought to be typical for the chemical industry, are in general less common. As in the previous years, there were no deadly accidents on our premises in 2021.

OQ Chemicals continues to use a reporting classification system for process safety based on API 754, a standard typically used in the oil and gas industry. The key figure records incidents characterized by a release of substance or energy (Loss of Primary Containment (LoPC), i.e. leakage from the first containment) and is classified depending on the impact of the incident. For more information, please visit <https://www.api.org/>.

Leading indicators are "before incident measurements" – in contrast to lagging indicators, which evaluate the performance of the past. Safety-related matters are measured to obtain indications on how to improve HSE-related issues in the future. Leading indicators serve to improve the HSE performance, the management system and in the end OQ Chemicals' safety culture.

The related key performance indicators (leading indicator KPIs) are targeted to have an impact on the overall HSE performance (= number and severity of incidents).

OQ Chemicals has implemented Leadership EHS Walkthroughs, EHS Training (number of trainings in operations) and the EHS moments (specified meetings including safety moments) as leading indicators since 2018.

In 2021, a new leading indicator was introduced – dealing with HSE near misses. A near miss is an incident that did not occur. OQ Chemicals identifies, reports and addresses near misses to prevent incidents in the areas of safety, environmental protection and health-care.



Every employee is encouraged to actively participate under the motto Safety = I. >> [please refer to I-Safety Initiative](#)

Leading indicators will be followed for the minimum period of one fiscal year and are decided upon by the leadership of OQ Chemicals.

Though the coronavirus pandemic massively affected and, in some cases, fundamentally impacted our business processes and personal interactions, OQ Chemicals succeeded in working on the further development of our environmental management, health and safety culture.

### Financial Spending on Environmental Protection

As OQ Chemicals we have and will continue to incur substantial on-going capital and operating expenditures for environmental protection measures.

In 2021, we invested 11,968,208 € compared to 9,618,707 € in 2020 and 9,660,056 € in 2019. The sum includes dedicated expenses for HSE activities and projects (e.g., waste management, emission control, ecological restoration of Emscher river) and singular cost positions that can be linked to a direct impact on the environmental footprint.\*

\*The numbers of OQ Chemicals' environmental spending differ from previous years' due to an updated data base with a change in the scope.

Spending in 2021 was on a higher level than in the years before, since OQ Chemicals further pursued its mission to invest into modernization projects and the reduce project. >> [please refer to section reduce](#)

Costs for REACH, energy efficiency program, ISO site (re-)certifications and general product safety as well as other quality-related costs are not included in the environmental spending.

There were no incidents related to non-compliance with regulations or environmental laws in 2021.

## Initiatives and Highlights 2021

### Global HSE Day 2021

The Global HSE Day has been a successful campaign at OQ Chemicals for many years. The events, discussions and presentations taking place on this day help deepen the topics of occupational safety, process safety, health and environmental protection.

In October 2021, OQ Chemicals launched a virtual platform for the Global HSE Day. This platform remained accessible and was supplemented with additional content until mid-November. Focus topics under the motto "see the risk" were process safety (e.g., risk assessments), safety (e.g., hazard communication), environment (e.g., emissions, flooding) and health (e.g., pandemic, nutrition).

Each site created a concept for itself, determining whether the topics were to be treated either as a discussion or as a presentation. Various departments from the US sites presented their functions and tasks and shared their contribution to OQ Chemicals in the area of HSE via the virtual platform.

The colleagues in China were able to hold a physical event covering emergency handling skill exercises among other activities.

At the Amsterdam site, the milestone of being accident-free for 20 years was celebrated virtually, in Mar the pandemic rules and their application were covered, and Monheim focused on remote working and business trip rules during the pandemic.

The new format was very well accepted and emphasized how the present topics of health, safety and environment are anchored in our working environment.





### **I-Safety Initiative (or Safety = I) – Successful through Safety, Environmental Protection and Healthcare**

A well-established initiative is the "I-Safety initiative" that was started at the end of 2014 and has been developed since.

With the I-Safety initiative (also known as "Safety = I" initiative) OQ Chemicals ensures that proposals, observations, concerns and any other HSE-related input of each employee are well received and considered. The I-Safety initiative challenges every single employee to ask him-/herself: What can I contribute to improve safety, environmental protection or healthcare?

This initiative comprises various projects and aspects tailored to the different organizations and has become a solid part of every employee's daily life. The single elements are adapted to the needs of the respective sites.

The I-Safety initiative includes the monthly conduction of SIP meetings (Safety Involvement Program) at the European sites. A monthly SIP agenda for review is being distributed to all departments and consists of statistics, different operational environmental, health and safety topics and can be adapted as needed. The supervisors are expected to provide each of his/her employees with periodic SIP meetings. Participation is documented and kept in the respective department. The I-Safety initiative supports role model behavior both of supervisors and employees.

Various focus areas were worked on and covered by I-Safety in 2021. The coronavirus pandemic management was still a priority, as well as the introduction of a

new safety film for all external employees and visitors to the company at the Oberhausen site in order to ensure compliance with safety regulations.

### **Healthcare – Pandemic Prevention Plan**

As early as in 2019 OQ Chemicals implemented a version of the so-called "Pandemic prevention global policy". This directive describes general rules for prevention and emergency planning in the event of a pandemic, according to the phases described by the WHO (World Health Organization). On the basis of the Pandemic Prevention Plan, measures for pandemic prevention as well as roles and responsibilities were defined.

Based on the preparation for the case of a pandemic, measures to adequately respond to the coronavirus pandemic could be decided upon quickly and were implemented efficiently.

After 2020, the management of the coronavirus pandemic dominated the area of health protection in 2021 as well. OQ Chemicals established hygiene concepts and implemented measures such as working from home so that production and business operated safely. Vaccination was promoted and supported by a global communication campaign. Employees could receive a first and second vaccination in summer 2021 and booster vaccinations in winter 2021.

The site pandemic teams, which were set up globally in 2020, stayed in close contact with corporate emergency and business continuity teams. As in 2020, shift plans of production units were adjusted to operate with a minimum of personnel on-site. Similar models

were developed and implemented for, amongst others, logistics and organizations whose presence is necessary to guarantee a safe and smooth operation.

OQ Chemicals' employees were updated regularly through intranet news, broadcasting events by the leadership, and emailing. Safety and hygiene rules were displayed at sites and offices in the form of posters, presentations and handouts. Measures were present everywhere – virtually and physically. Test kits were also provided that allowed employees to perform two Corona tests per week.

Due to the diligently implemented measures, no infection routes were caused through work at OQ Chemicals. All operations and business processes could be performed without interruptions.

For more information on general healthcare programs >> [please refer to section Social Performance.](#)

## **OXOLUTION – Competitive. Attractive. Safe. Sustainable.**

The OXOLUTION initiative at the Oberhausen site was implemented to shape the future as well as improve the overall performance and competitiveness of the site. The project includes many different facets that are bundled in four different blocks. The project was initiated at the end of 2019 with an investment in the double-digit range, focusing on digitalization, supply capabilities and organizational efficiency. The completion of the project is planned for 2023.



### The Four Blocks:

- Safety Culture
- Maintenance & Turnarounds
- Organization & Work Processes
- Digitalization, Automation & Process Optimization

### Safety Culture

It is our goal to further improve safety culture. Expected results of the safety block are strengthening the HSE culture and to establish a best-in-class process.

In 2021, the roll-out of the "Leadership & Role" model continued. Safety visits were conducted. In this procedure, both the supervisor and the employee review the various working steps together at the respective plant. The review is an opportunity to provide feedback on how individual steps can be improved so that the work can be performed safely.

As OQ Chemicals continues to develop its safety culture through the OXOLUTION program and the I-Safety initiative, a key focus was on how to deal with contractors and implement measures to improve safety when the contractors perform work for OQ Chemicals. Therefore, the safety film was revised. Furthermore, the coordinators responsible for the work of the contractors received training on the implementation of the contractors regulations, which are also described in the IMS. These rules provide the framework for determining how the work of the contractors is to be carried out.

### Maintenance & Turnarounds

In addition, OQ Chemicals' so-called "turnaround excellence program" aims to improve maintenance processes through the transfer of learnings gained during the turnaround in 2018 into improvements of

preparations for the next big turnaround in 2023. In 2021, OQ Chemicals launched a "dashboarding" project to monitor the turnaround and track progress, thereby making it easier to visualize the components of complex processes. Preparatory work continued as part of the "turnaround excellence program". X-ray tests were carried out on the pipelines at the site to check for leaks and ensure safety.

### Digitalization, Automation & Process Optimization

"Digitalization, Automation & Process Optimization" centers around new technologies for Engineering and Operations departments to improve process workflows and centralized data systems. Areas for process efficiency and stability are addressed, including the automation of control systems.

In 2021, preparations began for the relocation of the control rooms to a central control room. Completion of the move is planned for 2022. A digital shift book was also introduced to ensure a more efficient transition between shifts.

### Organization & Work Processes

"Organization & Work Processes" describes changes in working culture and structure. In 2020, a new organizational model was developed for the operational units.

The transformation of the organization is a very challenging change process and has been accompanied by the works council. The target is to keep OQ Chemicals competitive and to secure the long-term business operations at the site in Oberhausen.

In 2021, OQ Chemicals used the "POMME" e-learning platform for training, to facilitate a more efficient introduction into the new roles of the production clusters.

The platform is already being used for vocational training at the site.

## Awards for OQ Chemicals

OQ Chemicals has received the Chemical Transportation Safety Pinnacle Award for 2021.

This prestigious award recognizes companies that had zero Non-Accident Releases (NARs) for shipments or regulated hazardous material moving in tank cars, confirmed the use of safety best practices and moved at least 100 rail cars in 2021.

This is an outstanding achievement that clearly demonstrates a commitment to the safety of our employees and the communities in which we live and work.

The Texas Chemical Council (TCC) recognizes companies for demonstrating commitment and exemplary results toward safe operations, community awareness, emergency response, security, and pollution prevention.

In 2021, both OQ Chemicals sites in Bay City and Bishop were awarded for their outstanding performance in the area of safety.

Both our sites in Bay City and Bishop were rewarded with the Distinguished Service Award for improvement of the injury & illness incident rate for 2021 compared to the previous three years. Furthermore, both sites were rewarded with the Zero Contractor Incident Award for zero injuries of contractors in 2021.



Additionally, Bay City also was rewarded with the Caring for Texas Award for continuous engagement for their employees and the local community.

For meeting the safety requirements of the American Fuel & Petrochemical Manufacturers Association (AFPM), the Bay City site was rewarded with the Safety Achievement award and attained above-average safety performance in 2021.

### OQ Chemicals and the Energy Efficiency and Climate Protection Network

Since January 2021, the German Federal Government and 21 industry associations and organizations, as well as other cooperation partners, have been continuing the network initiative as the Energy Efficiency and Climate Protection Network Initiative.

OQ Chemicals has been part of the "Energy Efficiency and Climate Protection Network" since 2016 and will continue to do so in the new network's term from 2021 to 2023.

The initiative has set itself ambitious energy reduction targets and is intended to share experience and best practices as well as to support each other in cross-sectoral cooperations in order to drive energy efficiency projects and a reduction in energy consumption. Accordingly, 300 to 350 new networks are to be initiated by the end of 2025, thus saving 9 to 11 tWh of energy and 5 to 6 million t of greenhouse gas emissions. With these objectives, the initiative contributes essentially to achieving the climate and energy policy goals of the German Federal Government.

In these initiatives OQ Chemicals adds its knowledge in energy and process management. As part of our ISO 50001 energy management, various measures are being carried out to increase energy efficiency and reduce overall energy consumption. The measures are also part of the *reduce* project and contribute to our corporate greenhouse gas emission reduction goals.

[>> please refer to section reduce](#)

### Hydrogen-Project HydrOB (Oberhausen)



Together with other companies as well as the Fraunhofer Institute and the city of Oberhausen, OQ Chemicals has joined a network dedicated to the hydrogen mega trend.

Green hydrogen is a key technology on the road to climate neutrality. Hydrogen produced with green energy is capable of many things: it is an energy carrier, a storage medium for electricity, a raw material for the industry and an emission-free fuel.

HydrOB combines competencies from business, science and municipalities and aims to increase the implementation of hydrogen technologies into various applications.

In 2021, regular meetings of all players took place and the first funding applications were submitted in order to be able to sustainably establish a hydrogen research hub in Oberhausen.

## Global Climate Change

Global climate change and its consequences represent one of the greatest challenges of our time.

[>> please refer to our Materiality Analysis](#)

Climate action demands genuine commitment, clear goals and pragmatic solutions. With our strategic company-wide program called *reduce* to lower our greenhouse gas emissions, OQ Chemicals has set itself the goal of becoming climate-neutral by mid-century.

[>> please refer to section reduce](#)

OQ Chemicals has defined global targets for the areas of energy, emissions and waste reduction, which outline the necessary steps towards climate neutrality. All three matters are strongly interlinked in our set-up.

### What does climate neutrality entail for OQ Chemicals?

With the goal of climate neutrality by mid-century, OQ Chemicals is committed to eliminating greenhouse gas emissions throughout the organization. As the main framework to guide this transition, *reduce* relies on the standards of the Greenhouse Gas Protocol and encompasses the direct emissions from production activities (Scope 1), the indirect emissions from purchased energy (Scope 2) as well as those indirect emissions associated with, amongst others, raw materials, transportation of products or the commuting of employees (Scope 3). Any emissions that cannot be avoided will be offset via contributions to climate protection projects and nature-based solutions.



OQ Chemicals rolled out a special workforce to analyze the Scope 3 categories according to the GHG protocol. As a first step, the workforce identified the categories which are most relevant for OQ Chemicals (e.g., purchased goods and services, transportation and distribution) and defined the data necessary to calculate Scope 3 emissions. In 2022, the data collection for the relevant Scope 3 categories starts.

The global OQ Chemicals goals are following the reduction targets of the UN Climate Change Conference in 2015 and the emission reduction targets set by the European Commission as part of the "European Green Deal" with the goal of reaching climate neutrality in 2050.

Eight different workstreams are part of the *reduce* program, focusing on separate areas, such as operational process optimization, "break-through technologies" (e.g., alternative feedstocks), the alternative use and reduction of waste streams, and the impact of emission reductions on market segments served by OQ Chemicals.

### Energy

In an energy-intensive industry, the efficient usage of energy is essential to reduce the CO<sub>2</sub> footprint. In 2019, we have set ourselves the following mid- to long-term reduction goals:

**OQ Chemicals targets to reduce its energy consumption globally by 10% until 2025 by increasing its energy efficiency and/or reducing its absolute consumption where applicable (base year 2017).**

### Energy Consumption [GWh]

	2017	2019	2020	2021
<b>Total energy consumption</b>	<b>2,280</b>	<b>2,362</b>	<b>2,318</b>	<b>2,344</b>
Energy consumption from fuel	2,613	2,797	2,749	2,663
Electricity consumption from external sources	317	324	323	320
Heating consumption from external sources	0	0	0	0
Cooling consumption from external sources	0	0	0	0
Steam consumption from external sources	733	670	595	669
Electricity sold	-238	-211	-201	-202
Heating sold	-162	-210	-196	-200
Cooling sold	0	0	0	0
Steam sold	-982	-1,006	-951	-906

Energy consumption: All energy consumption related to the production units. It does not include energy for transportation between facilities, nor electricity usage in pure administrative offices.

Scope for the implementation of appropriate measures are the production sites globally, with a primary focus first on Europe, specifically Oberhausen. At our largest site, we operate our own power plant – a key opportunity for the realization of OQ Chemicals' sustainability-driven changes and improvements with a significant impact. The most important sources for the generation of energy at OQ Chemicals in Oberhausen are liquid wastes, exhaust gas, distillation residues, and, to a minor extent, natural gas – therefore the reuse of waste (residues from the production units) in a closed cycle represents by far the largest share for energy generation.

Key areas for the optimization of OQ Chemicals' energy profile in Oberhausen – and subsequently the greenhouse gas emission profile – lie in an increased energy efficiency and lower energy consumption based on operational process optimization, a reduction of waste and a related change of fuel mixture for the power plant (leading to lower emissions).

OQ Chemicals' power plant is the main provider of energy for the complete Oberhausen site. The power plant is also an important provider of district heating to the "Energieversorgung Oberhausen AG" (evo), contributing to an overall reduction of direct CO<sub>2</sub> emissions in the municipal area.



In 2021, the company-wide *reduce* project rolled out two working streams, one for the European sites and one for the US sites, addressing the topics of greenhouse gas emissions reduction and energy.

The short-term goal for the European sites of an increase of OQ Chemicals' energy efficiency by 3.4% until the end of 2021 (base year 2017) has been achieved with 4.62%. A major contributor to the success was the replacement of a compressed air supply unit within 2021 with an estimated saving of 2 million kWh of electricity and 1,450 t of CO<sub>2</sub> per year.

Optimization of boilers and flaring in Bay City was completed in 2021. Together with the replacement of a compressed air supply unit, OQ Chemicals could save 6% of the total energy consumption of Oberhausen and Bay City (compared with 2020), which stands for savings of 5% of the global energy consumption of OQ Chemicals.

The contribution of our administrative sites to the overall energy consumption is minor, but our aim is still to select the most sustainable energy supply where feasible. Our office in Monheim is powered by 100% certified "Ökostrom" electricity (electricity from renewables), taking into account a higher electricity price than for the "normal" residual mix. The parking lots in front of the building have been equipped with charging stations for e-cars, which can be used free of charge by OQ Chemicals' employees and visitors.

With the exception of field sales, the vehicle fleet at German locations has been completely converted to electric cars.

In 2022, OQ Chemicals will switch its external electricity purchases for all European sites to 100% certified "green electricity". For this purpose, the required electricity quantities for 2022 were already calculated in 2021.

In 2021, the global energy consumption was slightly higher compared to the previous year, but still on a comparable level.

Due to a strong increase in demand in 2021, run rates at our largest site in Oberhausen were higher, resulting in higher energy consumption compared to the previous year. However, the increase was evened by the Bay City site, which used less energy in 2021 due to a turnaround.

As part of the *reduce* program, the first projects of the CO<sub>2</sub> & Energy workstream of the Bay City and the Oberhausen site will start in 2022 to reduce OQ Chemicals' overall energy consumption.

#### Emissions to Air – Focus on CO<sub>2</sub> Emissions

Main contributors to direct CO<sub>2</sub> emissions generated by OQ Chemicals' activities are the production of energy (steam and electricity) at Oberhausen and the Bay City site based on distillation residues, off-gas and natural gas. >> [please also refer to section Energy](#)

At the Bay City site, the generation of synthesis gas (CO/H<sub>2</sub>) for the hydroformylation process also contributes to direct CO<sub>2</sub> emissions.

In order to contribute to the efforts to reduce greenhouse gas emissions, OQ Chemicals has established short-, mid-, and long-term targets at our production sites globally:

**OQ Chemicals aims to reduce its absolute greenhouse gas emissions globally by 6% until end of 2020, by 18% until end of 2025 and by 30% until end of 2030 (base year 2017).**

**OQ Chemicals also aims to reduce its product-specific emissions (kg CO<sub>2</sub>/produced t of product) by 10% until end of 2020, by 25% until end of 2025 and by 40% until end of 2030 (base year 2017).**

The initial scope of the *reduce* project focuses on the lowering of greenhouse gas emissions at our biggest sites in Oberhausen and Bay City. In the future, we will use the experience and synergy effects already gained from the *reduce* program to integrate the other sites into the scope as well.

Direct emissions decreased slightly compared to the previous year due to a turnaround and therefore lower energy consumption from fuel at our second largest site in Bay City.

Indirect emissions increased by 6% year-on-year due to increased steam purchases at the Oberhausen site in 2021 driven by a high market demand.

OQ Chemicals set a target to reduce its absolute greenhouse gas emissions by 6% globally by 2020. Although we did not achieve this target, absolute greenhouse gas emissions are still at a comparable level versus the 2017 baseline.



Direct emissions remained higher in 2021 compared to the 2017 baseline, primarily due to production facility expansions during this period. Due to lower steam consumption in 2021 compared to 2017, indirect GHG emissions could be reduced by 10%.

The *reduce* program is set to make a significant contribution to achieving the long-term reduction goals of OQ Chemicals. This includes the project to optimize flaring at the Bay City site, which will come into full effect in 2022 and will contribute to reduce overall greenhouse gas emissions.

The first significant results of the project are expected for 2022. The next step will be the integration of Scope 3 emissions into the project and target setting.

The generation of NOx in 2021 dropped compared to 2020 due to lower run rates at the Bay City site, caused by the turnaround.

### Water Consumption

OQ Chemicals' approach is to use water in a responsible and efficient manner. OQ Chemicals ensures that water is recirculated, recycled and not contaminated with other substances whenever possible. OQ Chemicals sees water usage as a topic of high relevance, becoming even more material in the future due to changing climate conditions around the globe.

A major use of water is the cooling in the production units. Wherever the heat of the production process cannot be used for energy recovery, it is cooled by recycling cooling water systems, mostly with cooling towers.

### CO<sub>2</sub> Emissions [metric tons]

	2017	2019	2020	2021
Direct CO <sub>2</sub> emissions (Scope 1 <sup>1,2</sup> )	548,480	563,600	570,239	562,758
Indirect CO <sub>2</sub> emissions (Scope 2 <sup>1,3</sup> )	186,835	172,018	158,342	168,081

### Other Emissions to Air [metric tons]

	2017	2019	2020	2021
NOx	502	614	642	618
SOx	5	3	5	5
VOCs	–	393	404	238
Particulate matter	–	63	117	113

<sup>1</sup> Main reference for the determination of GHG emission factors are the TEHG (Treibhausgas-Emissionshandelsgesetz) and Bundes-Umweltamt, United States Environmental Protection Agency (EPA) and Defra conversion factors 2019 (Department for Business, Energy & Industrial Strategy).

<sup>2</sup> includes OQ Chemicals' business-relevant emissions, as well as third-party energy supplies

<sup>3</sup> Scope 2 emissions are determined using the market-based approach for the European sites and the location-based approach for Bay City, Bishop and Nanjing.

The water is re-used and recycled multiple times in cooling cycles within our production processes.

Another major use is the generation of steam. Only a minimum of OQ Chemicals' water consumption is used as production process water or cleaning water.

The main source for water is surface water. OQ Chemicals cooperates with local or regional providers for the supply of water.

OQ Chemicals' production sites in Europe and China are located in areas rated as low risk water stress\* locations, whereas the Bay City and Bishop sites are located in low-medium risk water stress locations. OQ Chemicals is in close exchange with the LCRA

\* Tool applied: Aqueduct Water Risk Atlas, Subcategory: Water Stress 2019: Baseline water stress measures the ratio of total water withdrawals to available renewable surface and groundwater supplies. Water withdrawals include domestic, industrial, irrigation, and livestock consumptive and non-consumptive uses.



(Lower Colorado River Association) as water supplier and has a documented water conservation plan in place.

Therefore, OQ Chemicals does not source any water from high risk water stress areas.

Wastewater is conditioned or purified and discharged according to regulatory requirements. All processes and policies are documented in the IMS.

OQ Chemicals' water consumption has decreased compared to the previous year. One driver for the reduction was the optimization of the water supply system in Bay City. The turnaround also contributed to a reduction in water consumption.

At the Nanjing site, we optimized the cleaning process between product changes and were thus able to reduce water consumption by 40%.

### Effluents & Waste

Wastewater treatment and waste handling are performed differently at each of our sites according to the applicable requirements and general conditions. At all our sites, contaminated water is treated in wastewater treatment units before its discharge.

In Nanjing, the wastewater pre-treatment facility is operated by a contractor company. After pre-treatment, the low concentration wastewater will be drained to the contractor's wastewater pipe network for further treatment. Our facilities at Bishop and Marl are connected with the wastewater treatment units of Celanese and Evonik. Our facility in Amsterdam is also serviced by a wastewater treatment unit operated by a third party.

### Global Water Withdrawal [m<sup>3</sup>]

	2017	2019	2020	2021
<b>Total water withdrawal</b>	<b>8,646,296</b>	<b>10,813,996</b>	<b>11,641,589</b>	<b>8,668,835</b>
Surface water		6,972,179	7,929,523	4,888,835
Ground water		25,399	20,932	25,195
Rain water stored by the organization		53,467	53,219	53,139
Waste water from other organizations		386,286	345,886	395,682
Municipal water supplies or other water utilities		3,376,704	3,292,028	3,306,569

Entails water withdrawal for Bay City and Oberhausen sites including site partners.

In Bay City, OQ Chemicals runs wastewater treatment units, which comprise a physical and biological cleaning step. Clean water is then released back into the Colorado river.

At the Oberhausen site, OQ Chemicals currently operates a physical wastewater treatment for a part of the effluents. Furthermore, the wastewater is treated biologically at the wastewater treatment plant of the "Emschergenossenschaft (EG)".

OQ Chemicals is actively involved in the ecological restoration project of the Emscher river as a member of the "Emschergenossenschaft (EG)". Driven by the formation of the coal industry in the Rhine-Ruhr area over 100 years ago, the former unrestrained Emscher

river was transformed into an open sewage channel system. The EG wastewater treatment plant, located 2 km downstream of the OQ Chemicals Oberhausen site, cleans the whole Emscher river before it flows into the Rhine. With the introduction of the "EU Water Framework Directive" (2000/60/EC) in the 1990's and the goal to achieve "good ecological and chemical status" of all community waters, the target was set to channel wastewater in closed conduits through the Emscher region and to transform the Emscher river and its tributaries into natural waterways again.



After almost 20 years the Emscher conversion project is now finalized. The last major acceptance meeting between the EmscherGenossenschaft, the planning and construction companies involved and OQ Chemicals took place on November 30, 2021.

The Emscher will now be wastewater-free and the re-naturalization in the areas of the former channel will be started in 2022.

With our extensive experience in the production of oxo chemicals of more than 80 years, OQ Chemicals runs its production units most efficiently. Our value chain of Oxo Intermediates and Oxo Performance Chemicals is highly integrated, and the side product of one reaction builds the starting material for another production chain. Therefore, the generation of "waste" as materials for disposal is kept to a minimum. OQ Chemicals is dedicated to work on further improvements in projects across the value chain in material efficiency to minimize the input of raw materials and maximize the output of product. We plan, construct and operate processes to generate either no waste or as little waste as possible. Where possible, OQ Chemicals recycles generated waste.

With the set-up of the *reduce* project to tackle global climate change, OQ Chemicals has established a working stream called "Waste avoidance" explicitly looking into the alternative use of waste streams generated in our production units, as well as a possible reduction of the latter.

#### Waste Numbers [metric tons]

	2017	2019	2020	2021
<b>Total hazardous wastes</b>	<b>60,192</b>	<b>67,680</b>	<b>59,164</b>	<b>69,753</b>
Hazardous waste recycling		732	717	81
Hazardous waste energy recovery		61,468	54,077	64,490
Hazardous waste incineration		4,662	3,664	3,887
Hazardous waste other disposal		850	725	1,295
<b>Total non-hazardous wastes</b>	<b>5,594</b>	<b>6,236</b>	<b>3,982</b>	<b>6,178</b>
Non-hazardous waste recycling		29	21	331
Non-hazardous waste energy recovery		2,556	1,583	2,063
Non-hazardous waste incineration		7	26	34
Non-hazardous waste other disposal		3,644	2,355	3,750

OQ Chemicals has established the following long-term waste reduction goals:

**OQ Chemicals aims to reduce its waste globally, by shifting 5% of the total waste (in metric tons) into a "higher-category" waste section\* by 2025 (base year 2017).**

For the disposal of waste (solid and liquid waste), OQ Chemicals globally cooperates with qualified and specialized waste disposal companies. Each OQ Chemicals site has a waste management system in place. Our sites in Marl and Bishop are connected with the waste management systems of Evonik and Celanese. Waste numbers were on a higher level than

in 2020, corresponding to the increased production levels and activities at the sites.

Overall waste numbers were on a higher level than in 2020, corresponding to the increasing production levels and activities at the site.

\* The European waste hierarchy refers to the five steps included in the article 4 of the Waste Framework Directive; Prevention, Re-use and preparation for re-use, Recycle, Recovery, Disposal.



### Product Safety & Labeling

As a manufacturer of OQ Intermediates and Oxo Performance Chemicals, OQ Chemicals is responsible for the safe handling and usage of its sales products. All our sales products are therefore tested accordingly and accompanied by appropriate documentation and labeling that allows all people in contact with our products to safely handle them. The responsibility for accurate documentation and labeling lies within the PSQ department as part of International Assets.

OQ Chemicals' safety data sheets (SDS) entail all safety-relevant information necessary for the identified usage of the product. Among other things, information on the composition and ingredients of the product are included here. All SDS are published on the company's webpage: [www.chemicals.oq.com](http://www.chemicals.oq.com)

Safety data sheets are available for all OQ Chemicals' sales products; for each sales product either the national or a standard SDS is provided for the countries in which the product is marketed. For national SDS more than 30 languages are supported. Electronic distribution ensures that customers receive the latest SDS before the first delivery of a product or once an SDS has been updated. In addition, SDS are available on OQ Chemicals' website. OQ Chemicals' target is to keep all SDS up to date. SDS are therefore re-evaluated at regular intervals.

In 2021, no incidents were reported related to documentation and labeling of OQ Chemicals products.

### REACH

Being an importer and exporter of chemicals in the European Union, OQ Chemicals is responsible for the REACH registration of OQ Chemicals' end products and intermediates as well as the provision of data regarding product safety and impact on the environment.

>> please also refer to [Product Safety & Labeling](#)

Responsibility for this activity lies within the PSQ (Product Safety & Quality) organization.

"REACH (EC 1907/2006) aims to improve the protection of human health and the environment through the better and earlier identification of the intrinsic properties of chemical substances. This is done by the four processes of REACH, namely the registration, evaluation, authorisation and restriction of chemicals".\*

In 2021, several dossier updates and three new registrations have been submitted by OQ Chemicals.

Internationally, OQ Chemicals has registered three substances in 2021 under the South Korean REACH-equivalent legislation. Under the Turkish equivalent KKDİK as well as UK REACH, the appropriate pre-registrations have been submitted.

In Europe, 100% of its sales products are REACH registered, as well as all interim products/precursors relevant for import and export into and out of Europe. OQ Chemicals is the lead registrant for 40% of its sales products.

As a member of CEFIC, OQ Chemicals has taken part in the activities of the "Evaluation Network of Experts," a working group dedicated to the process of improving the quality of the dossiers.

OQ Chemicals acts as an active member of the VCI (Verband der Chemischen Industrie, German Chemical Industries Association) and is represented in the "Arbeitskreis REACH Umsetzung" (Working Circle REACH Implementation) dealing with the implementation of REACH regulatory.

Beyond the requirements of the ECHA (European Chemical Agency), OQ Chemicals is proactively checking all relevant product data on a regular basis and is evaluating the correctness of the dossiers handed in to ensure best data quality. OQ Chemicals' self-set target is to evaluate 25% of the REACH dossiers per year.

OQ Chemicals does not have any sales products in its portfolio that are considered SVHCs (substances of very high concern) or PBTs (persistent, bioaccumulative and toxic).

\* Citation from the ECHA website



# Social Performance





# SOCIAL PERFORMANCE

## leadUp! Functional Excellence – Working at OQ Chemicals

Our employees form our most important resource. OQ Chemicals believes in the value of its employees, the diversity and experience they bring to the company. Our company core values of Care, Share and Dare build the basis for all our decisions and activities.

With an aging society in the Western hemisphere, OQ Chemicals is also confronted with the challenges of demographic change and rapidly developing world markets. Topics such as age-differentiated employment conditions, employee retention, health management, and the qualification of our employees within the framework of further training and knowledge transfer are material for OQ Chemicals in order to further expand our competitiveness. "Demography" has been identified as one of the four key drivers for OQ Chemicals (please also refer to "leadUp!").

With operational independence in November 2021, the OQ Chemicals HR department regained full responsibility for all human resource activities of OQ Chemicals and was reorganized to meet the challenges of the future.

The following functions are subsumed under the new HR organization, with the goal of clear differentiation between global and local roles and their responsibilities:

**"HR PMO (Project Management Office) & Policies"** is centrally responsible for the planning and execution

of all projects on a global level. In addition, this function is also responsible for all HR-related policies and procedures stored in our IMS.

**Talent management** is responsible for developing and implementing the fit-for-purpose talent acquisition strategy globally. They are also responsible for identifying talents already working for OQ Chemicals in order to develop and promote them for critical management positions. This process is closely linked to OQ Chemicals' succession planning.

Local responsibilities are shared between **HR Services** and our **HR Business Partners**. The HR Services team is the point of contact for day-to-day administrative matters including, amongst others, taking care of payroll and time recording.

**HR Business Partners** work closely together with the management level to help the various OQ Chemicals organizations implement the HR strategy within their organization (e.g., future staffing needs, training needs, organizational structure).

The **Apprenticeship Function** is responsible for the development, organization and implementation of the vocational training required for OQ Chemicals and site partners. This function is also crucial in order to mitigate the risk of talent shortage in the market.

The purpose of the new organizational structure is to enable OQ Chemicals to bring out the best of their workforce capabilities in order to achieve the overall strategic targets as set by the leadUp! program.

### Definition of Strategic Goals and Concepts

In 2021, OQ and OQ Chemicals had been following a multi-step approach for the development of a "People's" strategy until November 2021. With the newly gained independence, the HR Management was focused on designing a new organizational set-up and a new HR strategy for OQ Chemicals.

OQ Chemicals' new HR strategy will continue to be founded on the values of Care, Share and Dare. These values form the basis for the set-up of strategic targets and build the reference for performance targets for our employees.

The new HR operating model is designed to face major strategic challenges within OQ Chemicals:

- Digitalization (process optimization, efficiency)
- Talents of tomorrow (attraction, acquisition, retention)
- Development of corporate culture (performance measurement, transformation)

The HR strategy is closely linked to the overall strategic direction of OQ Chemicals which is summed up under our leadUp! program. Within leadUp!, HR is responsible for the "organizational capability" brick. HR ensures organizational capability through activities in the areas of talent management, learning and development, and compensation and benefits, amongst others.

As a follow-up, strategic targets and their core corresponding key performance indicators will be defined in the course of 2022.



### Employee Involvement

In 2021, closely tied to previous year's activities regarding the improvement of the work situation in a remote environment, a global anonymous survey was conducted for all OQ Chemicals employees on their learning preferences. This measure was taken to improve the trainings on offer as well as the overall digital learning experience, considering that a high number of employees continued to work from home.

### Diversity and Inclusion

Fair treatment of all employees in areas like equal opportunities, ethics and harassment in the workplace is of highest importance. OQ Chemicals is aware that its success depends on the competency and involvement of each and every employee. For this reason, we will treat every employee with fairness and respect, as well as advance and challenge his or her responsibilities and abilities in accordance with the highest of professional standards. Furthermore, OQ Chemicals respects the rights of our employees and is obligated to comply with all laws that prohibit discrimination or harassment in the workplace on the grounds of race, skin color, religion, gender, nationality, sexual orientation, age, physical or mental condition or family status.

During the hiring process, the qualification of potential employees is determined based on objective, justifiable criteria. The rules prohibiting discrimination apply equally to company decisions with the respect to internal promotions, furthering education, compensation, and termination of the employment relationship (principles are stated in the Code of Conduct on the OQ Chemicals website).

OQ Chemicals has identified diversity as an important success factor for the future success of the company. Therefore, a working group has been established in 2021 to develop adequate and measurable targets and concepts in the field of diversity. The goal for 2022 is to increase awareness among all employees and to generate attention for important diversity issues. In order to enable all employees to communicate ideas or problems concerning diversity, we have set up a separate e-mail address.

OQ Chemicals is responsible for preserving the principles of equal opportunities and for creating a culturally diverse working environment. Germany's General Equal Treatment Act (or AGG) has a high priority and similar rules apply under US law.

Any kind of discrimination may be reported anonymously via the whistleblowing hotline (available languages English and German), to the Compliance Management, the supervisor or directly to the HR contact. >> [please refer to Sustainable Governance](#)  
For 2021, no recordings were listed.

The percentage of female employees of 18% lies within the typical range in the chemical industry. The number remained unchanged compared to 2020.

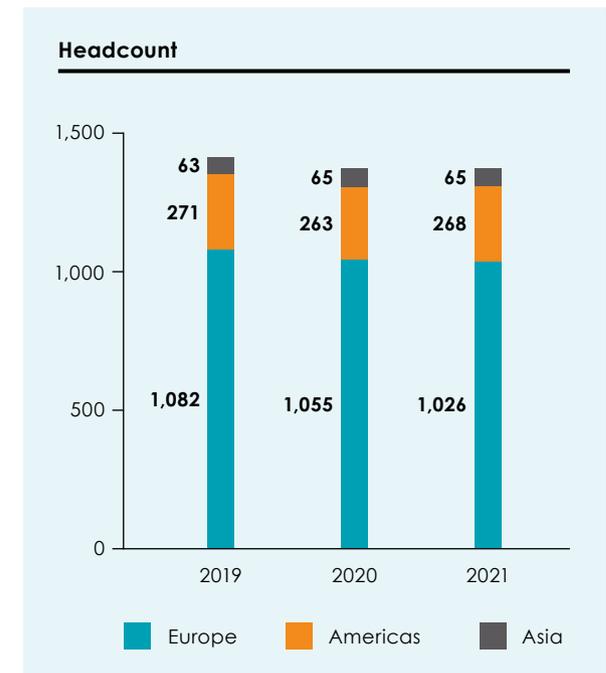
18% of leadership roles at OQ Chemicals are performed by female employees.

OQ Chemicals offers individualized solutions to employees returning from parental leave. The return rate after parental leave was at 100% in 2021, with a retention rate of 93% after twelve months.

After the annual, nationwide "Girls' Day" had been canceled in 2020 due to the coronavirus pandemic, a virtual Girls' Day was conducted in April 2021. For 2022, the Girls' Day is planned again on site in Oberhausen. For more than 20 years, the Girls' Day is specifically aimed at informing young women on apprenticeship and job opportunities in male-dominated technical areas.

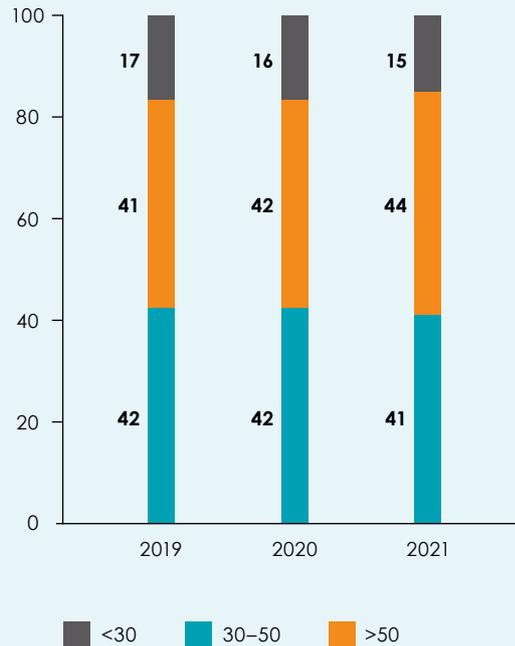
### Headcount and relevant KPIs

The number of people employed by OQ Chemicals in the 2021 financial year was 1,359 (recording date: 31 December, 2021, excluding apprentices). At OQ Chemicals, we hired 70 new qualified staff members worldwide. Approximately 76% of our workforce operates in operations and engineering (77% in 2020).





Employees by Age in%

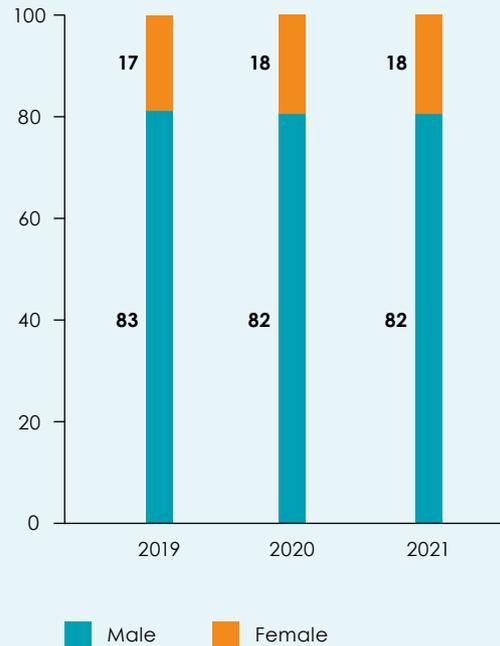


**Employer Branding – Talent Management**

OQ Chemicals has implemented a dedicated "talent management" team to deal with employee satisfaction, employer branding and the development of important cooperations to attract the best talent.

Through our employer branding, we want to retain our employees and strengthen their loyalty to our company in the long term. This will lead to more em-

Employees by Gender in%



ployee referrals and a higher employee satisfaction rate for OQ Chemicals.

In order to increase our visibility as an attractive employer, we took part in the annual career fair "bonding" in Aachen in 2021. Furthermore, OQ Chemicals has increasingly used social platforms such as LinkedIn and Xing for its employer branding and will continue to do so even more in the future.

In Oberhausen, OQ Chemicals plays an important role as an employer. By offering apprenticeships in technical and commercial areas, OQ Chemicals is the most important provider of industrial apprenticeships in the city. The apprenticeship model is run as "dual education," offering apprentices the opportunity to work and study at the same time.

Nearly 100% of the apprentices are offered a permanent job within OQ Chemicals once they finish the program successfully. The apprenticeship program is an important pillar to balance out demographic changes. In 2021, 21 apprentices finished their education, and 14 started a permanent job at OQ Chemicals.

With 22 new apprentices, a current total of 91 young people worked and studied at OQ Chemicals' own center for vocational education and on the job in 2021. Compared to 2020 (number of apprentices 102), this number has decreased by 11 due to workforce planning.

In 2021, the talent management team continued to cooperate with universities in different areas. OQ Chemicals offers opportunities for graduate students to conduct part of their thesis at or with OQ Chemicals. The objective of the collaborations is also to identify talent at an early stage and attract it to OQ Chemicals.

The exchange programs in cooperation with the Oman Oil Group (e.g., the Oman Oil Graduate Program) were stopped in 2021 and will no longer be continued.



### TOP Employer 2021

In 2021, the German locations of OQ Chemicals were evaluated and subsequently certified as "Top Employer" by the Top Employers Institute, which is an independent, globally recognized institute for the certification of companies and their people practices.



The institute was established 30 years ago and assesses and certifies companies in key industries worldwide. For more information, please visit [www.top-employers.com](http://www.top-employers.com).

To become a recognized Top Employer, an organization is evaluated according to specific entry criteria to be eligible for participation (formalized HR and communications practices build the basis).

Once approved, the organization will participate in the so-called HR Best Practices Survey based on six domains, comprising the following key topics: "Steer" (strategy and leadership), "Shape" (governance and structure), "Attract" (talent acquisition, branding etc.), "Develop" (performance reviews, trainings, career), "Engage" (well-being, off-boarding), "Unite" (company values, sustainability, diversity and inclusion, etc.). The scoring model and weighting of questions and options is reviewed and updated annually, as well as the survey itself.

Based on data, documents and relevant proof provided, the performance will be rated in comparison to other companies. A certification is provided if the company ranks in the top 40% of the program.

OQ Chemicals was rated as strong in domains like the establishment of a business strategy and development of people strategy, clear company values, and the implementation of a sustainability program. Fields of improvement are the digitization, diversity and inclusion, and talent acquisition. The certification is valid for one year.

### Learning and Development

To insure the best development of OQ Chemicals' employees, training, coaching and personal development are key components of our personnel policy. Through internal training programs, we provide our employees with state-of-the-art individual development and qualification opportunities.

Trainings cover a wide variety of topics and range from software trainings, intercultural trainings and job-specific trainings to OQ Chemicals-specific topics and can be conducted internally or externally.

In 2021, OQ Chemicals introduced new e-learning software to expand learning opportunities for all employees, regardless of time or location. The software will also be used as a tool to retain the knowledge of employees retiring in the near future.

OQ Chemicals' talent management function is responsible for the definition of trainings. For certain job areas, regular training is mandatory.

Training needs are usually identified and agreed upon together with the direct supervisor and documented in the performance review. Training records are generally kept and tracked in the individual departments.

Key goals are to promote leadership capabilities of individual employees and to define development goals for each person in the best possible way. Overall, an inspiring atmosphere with possibilities for development, extension of the professional network and more personal responsibility are the main objectives. The consensus at OQ Chemicals is that demonstrating leadership is not the same as carrying out a supervisor role. Instead, leadership is something an individual takes on to inspire others and have a positive impact on them.

### Annual Performance Review 2021

All employees receive a yearly feedback, which is usually conducted by the employee's direct supervisor and should be accompanied by one mid-year review.

One of the feedback tools of the performance management system is the employee performance review for managers and exempt staff. Respective employees are assessed using predefined categories. An assessment scale is used to grade the achievement of each category's requirements. The results are officially recorded and evaluated by the "talent management" team to define individual training needs, which will be scheduled and implemented together with the organizational units. All non-managerial staff is covered by feedback sessions with their supervisors.

100% of OQ Chemicals' employees are covered by the annual performance review and/or feedback sessions.



### Compensation & Benefits

Employee compensation is linked to both company and individual performance goals. OQ Chemicals' benefit system reflects national practices and can vary depending on factors such as hierarchy and remuneration levels, duration of employment, etc.

OQ Chemicals offers supplementary health insurance to all employees. Furthermore, OQ Chemicals' employees in Europe can benefit from the programs presented in the following paragraphs.

OQ Chemicals provides a defined benefit that will be paid upon retirement. Employees who are employed for more than six months are included in the collective agreement for single payments and retirement provision.

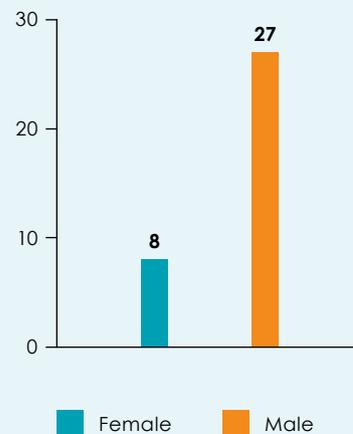
OQ Chemicals also offers flexible working hours (respecting core requirements) and long-term accounts for European employees. This model offers to save up parts of the salary or extra working hours in order to retire prematurely or schedule a personal break while still receiving salary payments. In addition, private accident insurance is provided. The above mentioned benefits represent only a selection of the range and are offered to permanent full- and part-time employees.

At the US sites, OQ Chemicals offers flexible working hours with certain core requirements. Each employee must work 30 hours a week to be considered a full-time employee and eligible for benefits. Employees are able to receive all provided benefits on date of hire, which include medical, dental, life, accidental

death & dismemberment insurances as well as short- and long-term disability insurances. Employees must be employed for one year to be eligible for long-term disability. OQ Chemicals participates in the 401(k) retirement plan where we match up to 5% of employee contributions and contribute an additional 5% of the employee's bi-weekly salary every pay period to the account.

OQ Chemicals encourages both paternity and maternity leave models and provides for the employees according to the national regulations of the countries in which OQ Chemicals is operating.

**Number of Employees  
Returning from Parental Leave 2021**



### Collective Bargaining Agreements

OQ Chemicals adheres to and supports the right of freedom of association.

All European employees of OQ Chemicals are covered by collective agreements and have elected works councils in place. In Amsterdam, employees have elected representatives instead due to the size of the site. These representatives operate like a works council. In the event of a violation of employee rights, all employees can turn to the respective works council. In 2021, 72% of all OQ Chemicals employees globally were covered by collective bargaining agreements.

In the case of company measures with a direct impact on OQ Chemicals employees, a reconciliation of interests is defined with the works council and the Management Team. In addition, a social compensation plan is negotiated between the employer and the works council.

### Occupational Health and Safety

Occupational health and safety has highest priority at OQ Chemicals as integral part of our HSE management. >> please also refer to section **Health, Safety and Environment for relevant KPIs and targets** Our target is to enhance the health and well-being of our employees and to protect them from any avoidable risk at their workplace.

Compliance with all regulatory requirements to safeguard health and safety of our employees worldwide is mandatory, and ISO 45001 serves as a guideline for OQ Chemicals' global Occupational Health and Safety system. All related standards, policies and processes



are documented in our IMS and cover all OQ Chemicals' employees. Our site in Nanjing was successfully certified according to ISO 45001 in 2020, and the certification of the European OQ Chemicals sites is planned for the first quarter of 2022.

All workplaces are regularly audited and results are documented with regard to potential health and safety impacts to guarantee the initiation of adequate measures when needed. Our activities, such as our Global HSE day or HSE walkthroughs (as part of our leading indicators) are geared toward making OQ Chemicals a safe and healthy place to work. To foster health and safety of our employees, we offer different services and programs beyond their work life as described in the following sections.

### Medical Services

At our OQ Chemicals sites in Oberhausen and Monheim, we offer medical services to employees including medical check-ups, vaccinations, as well as services of an optician and orthopedist through our own medical team. In Marl, those services are provided by the "Chemical Park".

In 2021, OQ Chemicals built its own vaccination center for its employees at the Oberhausen site. The first vaccinations were carried out in the middle of the year. The offer led to a further increase in vaccinations compared to previous years. As a supporting measure, a global information campaign about the corona vaccination was carried out at the same time. The benefits of a vaccination were explained to encourage employees to get vaccinated in order to protect their own health and the health of their colleagues.

At our US locations in Bay City, Bishop and Houston, OQ Chemicals also offers medical services including vaccinations. Records are kept at the sites with the third-party medical service or the site nurse.

OQ Chemicals conducts trainings for first responders at all sites.

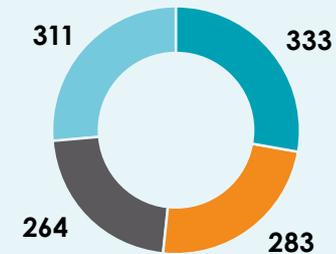
### Corporate Health Promotion Program

Our employees' health and well-being is a priority at OQ Chemicals, and the Corporate Health Promotion program is aimed at promoting physical and mental capabilities both at work and in their personal lives. The Corporate Health Promotion program comprises four pillars and covers the areas of mobility, nutrition, prevention and relaxation. It offers a wide range of services, activities and courses, from which OQ Chemicals employees can benefit – either for zero costs or a minor financial contribution –, and addresses the whole workforce from manager to operator.

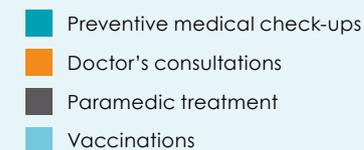
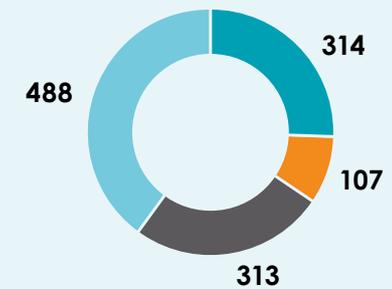
These include amongst others: physical training & prevention courses (physical fitness, relaxation, smoking cessation trainings, nutritional coaching), participation in public sports events and sponsored online courses. Program components vary at different OQ Chemicals sites according to the needs and topics of the particular site. Remotely located employees can benefit from individualized offerings and online courses.

### Total Number of Medical Appointments at Oberhausen and Monheim 2020 & 2021

2020



2021





Activities are being promoted through the intranet, informational flyers and posters, in meetings (like the SIP meeting), e-mail communication or direct promotion by the supervisors including the necessary registration information. Furthermore, OQ Chemicals uses the on-line platform "machtfit.de" (see section below).

The Corporate Health Promotion program is currently established at the German OQ Chemicals and US sites. Administrative offices and smaller sites globally offer tailored activities for employees.

In total, over 80% of OQ Chemicals' workforce are currently covered by the program.

**"OQ Chemicals macht fit":  
Digitally, Locally and Individually**

In Germany, OQ Chemicals uses the platform machtfit.de. Each employee can choose from a wide variety of activities according to their interests and preferred location. All courses are supported by a yearly subsidy.

The platform offers sports activities (e.g., boot camps, pilates and spinal exercises), stress management courses (e.g., relaxation training) and areas of nutrition and addiction cessation (e.g., smoking). Furthermore, all company-internal and additional external offers, such as company runs, can be viewed and booked in the portal.

The total number of offers booked increased significantly compared to 2020, since the restrictions of the coronavirus pandemic were partly softened and more activities were possible again in 2021.

Climbing and bouldering (representing the largest share) was booked about four times more often compared to the previous year. Bookings for fitness trainings with physical presence increased to 103 compared to 15 in 2020 since gym visits were allowed again.

**VIACTIV company race 2.1**

As in 2020, in 2021 a virtual alternative called "Gemeinsam Kilometer sammeln" replaced the "VIACTIV-Firmenlauf" in Oberhausen. In total, 75 employees of OQ Chemicals participated in the event and collected over 30,000 km. For each kilometer, 0.02 € were donated to charity.

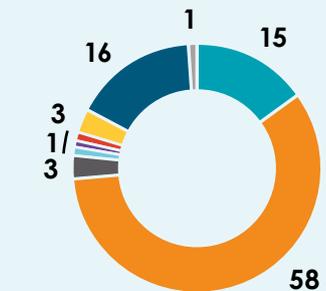
After the Corona restrictions were lifted in 2021, it was possible to hold the VIACTIV company run in Oberhausen on site after all. Participants could register for the digital company run via machtfit.de and transfer their collected kilometers with any available tracking app. Over 900 people participated and collected 394,128.01 km. For the first time, cyclists were also allowed to participate.



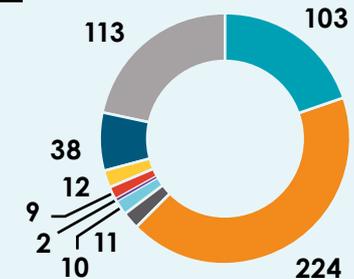
**Booked Tickets (Category) in %**

*Offers that were booked via machtfit.de*

**2020**



**2021**



- Fitness training
- Climbing/Bouldering
- Yoga
- Spinal exercises
- "Aqua Fit"/Pilates
- Stress management
- Memberships<sup>1</sup>
- Nutritional advice
- Others/Body analyses

<sup>1</sup> e.g., gym



### Wellness Committee in Bay City

The Wellness Committee in Bay City has established different programs and activities for the Bay City employees in order to support a healthy and satisfying lifestyle (work-life balance). The program also comprises the Bishop site and Houston office, with volunteers who champion the activities at the respective location.

As was already the situation in 2020, in 2021 physical activities at the sites and offices could not take place due to the pandemic. With employees still working from home and adapting to a new work and life situation, employees were offered mental health and well-being tools, including counseling sessions and referrals. Additionally, the coronavirus pandemic also brought new economic challenges. In response, employees were also offered so-called financial wellness online training to better understand how to leverage their retirement accounts. OQ Chemicals also began a "Wellness Initiative" for Covid vaccinations providing a 500 US\$ incentive award. In addition, if an employee had received his or her vaccination and a preventative care exam (dental cleaning, vision exam, physical well-being, etc.), 50 US\$ per pay period were reduced from his or her health insurance premium for a cost savings of up to 1,300 US\$.

Furthermore, the Wellness Committee supported the preparation and conduction of the virtual "Global HSE Day" in 2021 >> [please refer to Global HSE Day 2021](#)



### Local Community Involvement

Growth and success require a solid foundation. At OQ Chemicals, this means trust and responsibility. We appreciate and nurture the trust that our customers and our neighbors have placed in us. We intend to be recognized as a valuable corporate citizen and make every effort to operate responsibly in our local communities.

We take responsibility for the people who work for OQ Chemicals and those who live in the surrounding areas of our sites.

We support projects in cooperation with partners such as communities, associations, local governments, and nearby institutions, and extend financial support to programs covering environmental and social aspects.

Our aim is to be a responsible community partner and corporate citizen by positively impacting social development. OQ Chemicals specifically supports projects and facilities in the surroundings of its sites/offices and concentrates on:

- Social engagement in the field of youth work and support of children
- Scientific projects of general interest
- Environmental protection
- Community projects

We strive to develop a volunteering work culture and encourage our employees to get involved in activities with a positive impact on society. OQ Chemicals fosters "matching gifts," such as doubling of employees' donations for projects being initiated or supported by OQ Chemicals' employees, for example.

Usually, initiatives are being posted on the intranet and in paper form at the different sites and offices. Our general concept is covering various facilities in the direct neighborhood with smaller support sums, rather than concentrating on one big project.

OQ Chemicals has a guideline in place covering the criteria for donations and sponsoring. Recommendations and ideas can be communicated and handed in by all employees via various communication channels like the Impulse Tool, the supervisor or directly to the colleagues at the European and US sites. At the end of each fiscal year, donations and supported projects will be communicated to the Management Team of OQ Chemicals and a proposal for next year's activities will be handed in.

OQ Chemicals opts for a mix of support worldwide.

In Europe, two major initiatives are supported: the MULTI project and the Friedensdorf International.

Every two years, OQ Chemicals supports the MULTI project in Oberhausen. The basic idea of this project is a peaceful meeting of young people from different cultural backgrounds. In common activities young people recognize similarities, but also differences. The MULTI project aims to build bridges between the young people and to foster a tolerant diverse culture.

Another important partner is Friedensdorf International, an institution OQ Chemicals supports annually. Friedensdorf International is an NGO in Oberhausen that brings ill and injured children from war zones and crisis areas to Germany for medical care. After receiving medical treatment, the children return to their families.

In the USA, OQ Chemicals' employees are active in reoccurring events together with the non-profit organization "United Way". United Way is the world's largest privately funded non-profit organization and works together with companies, governments and other organizations to support local communities – not only financially, but also with volunteering, ideas and in-kind support. The projects are very diverse and include mentoring programs at schools, multi-generation projects and collective impact initiatives. United Way is dedicated to serving the local communities by bringing systemic change through developing and strengthening the lives of families, young people, and seniors.

In addition, we support schools, kindergartens, sports clubs etc. next to our production sites with various donations.



OQ Chemicals' Communications department distributes sanitizers to local schools in Oberhausen and Duisburg

In 2021, OQ Chemicals donated 22,200 € to facilities in and around Oberhausen and Monheim. In the USA, OQ Chemicals supported initiatives with a total amount of 17,510 US\$ (please see below).

OQ Chemicals' support for activities in 2021 covered amongst others:

- Initiatives related to the coronavirus pandemic (Help the Helpers)
- Educational programs (schools and kindergartens)
- Donations to medical and social institutions, as well as charities
- Cooperation with schools and universities
- Hazardous Materials Day (disposal of hazardous materials for Matagorda county)
- Matagorda County Beach Clean Up
- Donations for flood victims (Aktion Deutschland hilft)

### Support in times of the coronavirus pandemic

The year 2021 continued to be characterized by challenges caused by the coronavirus pandemic. Therefore, OQ Chemicals has remained committed to being a supporter during this time. In 2021, OQ Chemicals supported ten schools in Oberhausen and Duisburg with sanitizers.

In the USA, OQ Chemicals continued the tradition of supporting local communities, despite the challenging economic times, by continuing to sponsor United Way through employee donations, pledges and company sponsorship. In 2021, OQ Chemicals donated 20,086 US\$ to United Way.



# GRI CONTENT INDEX

This report has been prepared in accordance with the GRI Standards: Core option. The Global Reporting Initiative (GRI) is the most established framework for sustainability reporting worldwide. The report covers OQ Chemicals as part of the integrated energy company OQ.

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<b>GRI 101: Foundation 2016</b>			
<b>GRI 102: General Disclosures 2016</b>			
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GRI 102-42	Identifying and selecting stakeholders	30, 31	
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Reporting Practice		
GRI 102-46	Defining report content and topic Boundaries	20–22
GRI 102-47	List of material topics	23, 24
GRI 102-48	Restatements of information	A few figures were updated with explanatory footnotes under respective disclosures.
GRI 102-49	Changes in reporting	No changes were made.
GRI 102-50	Reporting period	1.1.2021 – 31.12.2021
GRI 102-51	Date of most recent report	July 2021
GRI 102-52	Reporting cycle	Annually
GRI 102-53	Contact point for questions regarding the report	65
GRI 102-54	Claims of reporting in accordance with the GRI Standards	61
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GRI 102-56	External assurance	Apart from Annual Report related business figures, information of this report was not reviewed for external assurance.
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GRI 205 Anti-corruption 2016		
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GRI 303-2	Management of water discharge-related impacts	48, 49
GRI 303-3	Water withdrawal	48 Figures for water withdrawal from areas with water stress are not being published since OQ Chemical sites are located in low to low-medium stress areas.



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GRI 103	Management Approach (including 103-1, 103-2, 103-3)	37–39, 49
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		Market-based or location-based figures are not yet reasonably available.
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<b>GRI 404</b>	<b>Training and Education 2016</b>	
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<b>GRI 414</b>	<b>Supplier Social Assessment 2016</b>	
GRI 103	Management Approach (including 103-1, 103-2, 103-3)	28, 29
GRI 414	Negative social impacts in the supply chain and actions taken	In 2021, no incidents were reported related to negative social impacts in the supply chain and actions taken.
<b>GRI 416</b>	<b>Customer Health and Safety 2016</b>	
GRI 103	Management Approach (including 103-1, 103-2, 103-3)	50
GRI 416-2	Incidents of non-compliance concerning the health and safety impacts of products and services	In 2021, no incidents were reported related to non-compliance concerning the health and safety impacts of products and services.
<b>GRI 417</b>	<b>Marketing and Labeling 2016</b>	
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