

# POWERING PROGRESS

DEUTZ 2022



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&lt;&lt; HIGHLIGHTS OF 2022

# WE KEEP THE WORLD MOVING


DEUTZ supplies drives that power vehicles and machinery on construction sites, on highways, and in agriculture around the world. That is our core business and our passion.

We are working with our customers to make our product ecosystem climate-neutral by supplying sustainable drive systems, providing intelligent maintenance, and developing innovative solutions.

Our technology-neutral approach ensures the world keeps moving.

# HIGHLIGHTS OF 2022

€ **1.95** BN  
IN REVENUE


**2**   
NEW SERVICE ACQUISITIONS

**4.6%**  
ADJUSTED EBIT MARGIN

  
€ **449.8** M  
REVENUE IN THE SERVICE BUSINESS

**1<sup>ST</sup>**   
HYDROGEN-POWERED MOBILE GENSET BUILT

**3.3%**  
OF CONSOLIDATED REVENUE ATTRIBUTABLE TO THE GREEN SEGMENT

**4<sup>TH</sup>**   
NICOLAUS AUGUST OTTO AWARD

  
**181,268**  
DEUTZ ENGINES SOLD


**4,975**  
EMPLOYEES


**1<sup>ST</sup>**   
SUSTAINABILITY-LINKED LOAN AGREED

**1**   
COOPERATION IN THE SEGMENT DEUTZ CLASSIC WITH DAIMLER TRUCK


€ **112** M  
IN CAPITAL EXPENDITURE (AFTER DEDUCTING GRANTS)

**-2.7%**  
WASTE COMPARED WITH 2021

**1<sup>ST</sup>**   
BATTERY-DRIVEN CONCRETE PUMP UNVEILED

**1<sup>ST</sup>**   
VOLUME PRODUCTION ORDER FOR DEUTZ POWERTREE

**-8.3%**  
CO<sub>2</sub> EMISSIONS (SCOPE 1 & 2) PER ENGINE PRODUCED COMPARED TO 2021

**79%**   
OF ENGINES SOLD CERTIFIED FOR TIER 4 / EU STAGE V

<< HIGHLIGHTS OF 2022

## WE KEEP THE WORLD MOVING

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# MESSAGE FROM THE CEO

*Dear friends of the company,*

DEUTZ engines keep the world moving – and the 2022 financial year illustrated this perfectly. Despite the challenging geopolitical and macroeconomic environment, we reached our targets for 2022, even exceeding some of them slightly. Our unit sales went up by 16.6 percent while our revenue jumped by 20.8 percent to €1.95 billion. Our profitability improved markedly too, with our adjusted EBIT more than doubling year on year to €89.4 million and our adjusted EBIT margin rising from 2.3 percent to 4.6 percent. In the Classic segment, the return on revenue of just under 7 percent was the highest in more than ten years. Our strategic initiatives – including a market-oriented pricing policy, a greater focus on disciplined cost management, and an action plan to boost production efficiency – are already paying off. But our ambitions do not end there.

We have mapped out the route we will take to ensure that our engines keep the world moving in the future too. Under our Dual+ strategy, we are working for and with our customers to tackle the challenges of DEUTZ's transition to more sustainable drive systems. We have clearly laid out our key goals for the Classic and Green segments and for the highly profitable service business. Our firm belief is that internal combustion engines will continue to play a major role in our application areas for quite some time to come, especially if they can run on alternative fuels that have a smaller environmental impact. This is the only way that we can make the transition to climate-neutral drive systems for off-highway applications. Going forward, we aim to manufacture at least 200,000 engines per year in the Classic segment, which will enable us to fund the expansion and further development of an innovative, green product portfolio. Last year showed that we are on the right track. This was also true of our service business, where revenue rose to around €450 million. But our plans are ambitious here too, as we intend to increase revenue in this important business to around €600 million by 2025.

DEUTZ embodies sustainable engines, intelligent maintenance, and innovative solutions. If we are to develop and build drive technologies for the post-fossil age, we have to keep moving. No option should be dismissed out of hand. We are relying on our innovative strength and deliberately embracing new technologies to pursue a number of approaches. The key to our success will be to think and develop with a much stronger focus on connected product ecosystems and to intelligently expand our portfolio and value chains, for example by moving toward new business models beyond drivetrains.



**>>** *We are putting DEUTZ in pole position for profitable growth with Dual+.*«

DR. SEBASTIAN C. SCHULTE

Our plans are ambitious, and our goal is for DEUTZ to be one of the top three independent drive manufacturers by 2030. As the market consolidates, we are forming alliances and acquiring businesses. Our partnership with Daimler Truck is the first major milestone in this regard, not least because it will give us access to technologically advanced engines and save on development costs. It will also enable us to attract new customer groups.

The focus of Dual+ is on sustained profitable growth: By 2025, we aim to have increased our revenue to more than €2.5 billion and to be achieving an adjusted EBIT margin of between 6 and 7 percent. To reach our goals, we have defined four strategic areas of action as part of our Powering Progress program: priorities, potential, performance, and passion. We implemented, or at least launched, various initiatives in 2022. And as a team, we will continue to work hard to equip DEUTZ for the future. As well as reaching our financial targets, this means taking responsibility for future generations and the environment. Both objectives are very important to us. That is why we at DEUTZ are doing everything we can to become a completely climate-neutral company by no later than 2050 and investing more than €100 million in our green product portfolio over the next three years. I am confident that together we can deliver on this vision.

Cologne, March 2023

Dr. Sebastian C. Schulte  
CHIEF EXECUTIVE OFFICER

# THE BOARD OF MANAGEMENT



**TIMO KRUTOFF**  
CFO and Labor Director

Member of the Board of Management since December 1, 2022, appointed until November 30, 2025



**DR. SEBASTIAN C. SCHULTE**  
CEO

Chairman of the Board of Management, member of the Board of Management since January 1, 2021, appointed until December 31, 2028



**DR. ING. PETRA MAYER**  
COO

Member of the Board of Management since November 1, 2022, appointed until October 31, 2025



**DR. ING. MARKUS MÜLLER**  
CTO & CSO

Member of the Board of Management since March 15, 2021, appointed until March 14, 2029

## CEO INTERVIEW

How does DEUTZ design the innovative drive technologies that are paving the way for a carbon-neutral future? Dr. Sebastian C. Schulte tells us how.

**As we stand on the threshold of the post-fossil-fuel age, how is DEUTZ positioning itself in this new world?**

DEUTZ has been supplying drives that power vehicles and machinery on construction sites, on highways, and in agriculture around the world for almost 160 years. We want our engines to keep the world moving in the future too. To achieve this, we and our customers must embrace change and evolve. The industry sectors that make up our customer base are in the middle of a fundamental shift toward greater carbon neutrality. And our engines are used in sectors that are still generating significant levels of carbon emissions. We see huge potential here, and have set ourselves the goal of making DEUTZ carbon-neutral along the entire process chain by no later than 2050.

**Is transforming mobility not a huge task?**

Yes, it is. But we also see the transformation of mobility as a huge opportunity to join forces with our customers and bring about change. Some sectors have already reached a consensus on how to achieve net zero. In the automotive sector, for example, electrification appears to be the way forward. For engines like ours that move large loads and are in continuous use, a number of different technologies may be possible – or even a combination of them. But it remains uncertain what a carbon-neutral drive for trucks, excavators, and tractors might look like.

**Does that mean we are still some way off from using carbon-neutral drives across the board in construction and agriculture?**

Yes it does, and we should be honest enough to say so. We still need the internal combustion engine, at least for a transitional period. That is why we will continue to grow this area over the coming years and carry on optimizing the technology. Looking ahead, synthetic fuels have the potential to significantly extend the use of internal combustion technology, and this is not an option that should be dismissed out of hand.

**How do you intend to proceed?**

By relying on our innovative strength and embracing new technologies to pursue a number of approaches. We are well positioned when it comes to making the internal combustion engine carbon-neutral, for example, by using hydrogen as a fuel, and are one of the first companies globally to enter full production. The development of alternative drive technologies, such as electric drives and the fuel cell, also has an important role to play.

**Is hydrogen really the silver bullet for the new era of mobility?**

We believe that hydrogen combustion technology will enable a whole host of zero-emission applications, and it has the added advantage that we can draw on existing expertise, technologies, suppliers, and production facilities. All of this is already in place. And if these applications use blue or green hydrogen, they generate very few or even zero carbon emissions.



» *Our engines keep the world moving, and we are evolving with them.«*

construction vehicles, or by providing seamless service and maintenance. To achieve this, we are working closely with our customers and playing an active role in the consolidation of the industry. We are also further expanding our service offering around the world.

**DEUTZ AG is a company with a long tradition and the world's oldest engine manufacturer. How can DEUTZ make a success of this transformation?**

By not standing still and evolving with our engines. We have to embrace change and move forward; that is the only way we can help our customers to reach their transformation goals. And we will only be able to achieve this if our organization grows as well and we promote a culture that puts innovation and entrepreneurial thinking first. Openness to ideas and other points of view are essential to this, as are transparent and non-hierarchical communication, and an approach that tolerates mistakes and allows everyone to learn from them. Key here are mutual trust and respect for everyone across the business.

**Has the DEUTZ hydrogen engine already proven itself in the field?**

Yes, the TCG 7.8 H2 is already in use in several pilot projects, for example, in collaboration with RheinEnergie, a local utility company in Cologne. And we also joined the HyCET project in 2022, which is trialing hydrogen engines in an 18-tonne truck. There are still challenges to overcome in terms of sourcing hydrogen and establishing the refueling infrastructure, but we have agreed new strategic alliances in this area too and will continue to expand in the future. Thinking and developing with connected ecosystems in mind will be key, and we will need to expand our portfolio and our value chain if we want to offer our customers the best solutions.

**Can you give us an example?**

We want to supply the best and cleanest engines, of course, but we also want to keep them up and running. This might be in the shape of battery storage systems for electric drives in smaller

More about the person:  
[www.deutz.com/en/about-us/board-of-management](http://www.deutz.com/en/about-us/board-of-management)



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# PRIORITIES

## POTENTIAL

## PERFORMANCE

## PASSION

We intend to establish DEUTZ among the top three independent drive manufacturers and aim to offer a climate-neutral product and technology portfolio by no later than 2050. And we are gearing our corporate strategy toward this. We are identifying and making the most of opportunities in the market. Working closely as a team and in dialogue with our customers and partners, we will unlock potential for growth in the Classic and Green segments and in the service business, and we will play an active role in the transition to more sustainable drive systems and energy solutions.



# PRIOR POTEN PERFO PASSIO

We intend to establish DEUTZ manufacturers and aim to off portfolio by no later than 205 toward this. We are identifying the market. Working closely and partners, we will unlock segments and in the service transition to more sustainable



Our Dual+ strategy paves the way for further value-driven growth. A clear focus on clean internal combustion engines, new green technologies, and the expansion of our global service business will prepare DEUTZ for the future.



**SINA GAUSS**  
Head of Strategy, DEUTZ AG

*Sina Gauss is Head of Strategy at DEUTZ AG. A business administration graduate, she previously worked for international strategy consultancies in Denmark, the UK, and Germany, where she advised global companies.*





# THE WAY FORWARD

Through its Dual+ strategy, DEUTZ is tackling the challenges of the transition to more sustainable drive systems.



“We want our engines to keep the world moving in the future too,” said CEO Dr. Sebastian C. Schulte. In January 2023, he and his fellow members of the Board of Management presented the new Dual+ strategy, developed by the management team in 2022, to employees and journalists. Its priorities are to prepare the Group for the transition to more sustainable drive systems, to further expand the service business, and to unlock potential for growth in the classic engine business.

## Clear targets for Classic, Green – and the service business

In addition to clear priorities, the Dual+ strategy also sets firm targets for each of its three elements. DEUTZ firmly believes that the internal combustion engine will continue to have a dominant role in mobile machinery applications for some time yet, so as to facilitate a smooth transition to more sustainable drive systems. This is why DEUTZ is working hard to make these engines more environmentally friendly, for example by enabling them to

run on HVO, hydrogen, or synthetic fuels. At the same time, DEUTZ wants to play an active part in the consolidation of the market and thus strengthen its market position. The Company aims to produce at least 200,000 engines a year in the Classic segment and use the income to fund the development of its green initiatives and other activities. For example, DEUTZ will invest over €100 million in its sustainable technology portfolio by 2025. It also plans to open up new value chains for charging infrastructure and the refueling of hydrogen vehicles. As DEUTZ engines last for a long time, the service business – the plus in the Dual+ strategy – offers great potential, which the Company aims to unlock around the world. The target here is to increase service revenue to around €600 million by 2025. To make this possible, DEUTZ is boosting its regional presence (e.g. through acquisitions and alliances), extending its service activities to non-DEUTZ engines, and expanding its service portfolio to include, in particular, more digital solutions.

## ‘Powering Progress’ initiatives established

DEUTZ engines keep the world moving – as they did in the past and will do in the future. The Company believes that the Dual+ strategy will pave the way for profitable growth and aims to increase its adjusted EBIT margin to between 6 and 7 percent by 2025. DEUTZ has implemented several initiatives as part of its Powering Progress program in order to achieve

this. These include a greater focus on disciplined cost management, a market-oriented pricing policy, greater digitalization, and employee development. As DEUTZ aims to achieve its financial targets in harmony with its environmental responsibilities, the drive specialist will offer its customers a completely emission-free product and technology portfolio by no later than 2050.

# SENDING A STRONG SIGNAL

DEUTZ is collaborating with Daimler Truck to develop and market engines.

DEUTZ is aiming to play an active part in the consolidation of the engine market, including through alliances. This one of the key statements formulated by the company in its Dual+ strategy. DEUTZ sent a strong signal to the market by announcing an alliance with Daimler Truck to develop and market engines – an important step for further growth in the Classic segment. The cooperation between the two companies is underpinned by Daimler Truck’s 4.19 percent stake in DEUTZ, which makes the company one of the largest individual shareholders at present.

The alliance covers two areas. First, DEUTZ will acquire the IP rights to Daimler Truck’s medium-duty MDEG engines in the on-highway segment so that it can further develop them itself, including for use in off-highway applications, such as construction equipment, and in

on-highway commercial vehicles. The IP for the MDEG engines also covers a gas variant, which provides a good basis for developing it into a hydrogen engine.

DEUTZ will also acquire license rights from Daimler Truck so that it can further develop the engines in the heavy-duty HDEP series for use in off-highway applications such as large agricultural machinery. It will also market these engines itself. Daimler Truck will continue to build the heavy-duty engines, whereas the medium-duty engines will be assembled at DEUTZ. The engine variants that will be marketed by DEUTZ are scheduled to go into production in 2028.

“The alliance with Daimler Truck will significantly improve our starting position in a consolidating market. We will gain access to technologically advanced engines, keeping development expenditure down, and will be able to attract new customer groups at the same time,” says CEO Dr. Sebastian C. Schulte. The engines have additional technological benefits: they can easily be ready for the next exhaust emissions standard, and already have lower fuel and AdBlue consumption, which reduces carbon emissions.



DAIMLER  
TRUCK

# WINNING COMBINATION

Taking an open-minded approach to new technologies, DEUTZ collaborates with strong partners in order to future-proof its product portfolio.



## BERGMANN CHOOSES DEUTZ

From early 2023, Bergmann Maschinenbau will use DEUTZ's TCD 2.9 and TCD 3.6 engines in its dumper models with payloads of six and nine tonnes respectively. The Meppen-based, family-owned business has signed an agreement to this effect with long-standing DEUTZ partner HENKELHAUSEN, who will also handle the delivery. Bergmann was won over

by the engines and, above all, by the global service network: "As a manufacturer of premium products, we also expect high standards of reliability and quality from our suppliers. DEUTZ AG's extensive service organization was a key factor in our decision," says Dirk Fasthoff, Head of Vehicle Manufacturing at Bergmann.

## E-DEUTZ POWERS PUTZMEISTER

Alongside the electrification of aircraft tugs, excavators, and dumpers, the concrete pump represents an important addition to our range of electric applications. At bauma 2022, DEUTZ presented the first battery-powered concrete pumps made by its partner PUTZMEISTER. The PUTZMEISTER BSA 1005 iONTRON uses a 360-volt drive from E-DEUTZ instead of the usual 2.2 liter DEUTZ diesel engine. The electric

drive system has a continuous power output of 40 kilowatt and peak power of 80 kilowatt, generated by two lithiumion batteries. This allows the pump to work for up to eight hours. The iONTRON concrete pump can also be powered via a charging cable and thus operated for longer. PUTZMEISTER plans to start full production in 2023.



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# PRIORITIES **POTENTIAL** PERFORMANCE PASSION

We invented the gasoline engine more than 150 years ago. Now we are making it cleaner than ever, ensuring that it can also run on alternative fuels to reduce emissions. We have been forging ahead with the development of electric drives since 2017, and our TCG 7.8 H2 hydrogen engine is scheduled to enter full production in 2024. We are embracing new technologies and working in partnership with our customers to create the drive solutions of the future. Our work is driven by pioneering spirit and innovative strength.



PRIORIT  
 POTENTIAL  
 PERFORMANCE  
 PASSION

We invented the gasoline engine, making it cleaner than ever, and we're now working on alternative fuels to reduce emissions. We're also investing in the development of electric drives since 2019. This is scheduled to enter full production in 2023. We're also working on hydrogen technologies and working in the development of the drive solutions of the future. We're committed to innovation and innovative strength.



It is by no means certain which drive solution will prevail. That is why DEUTZ aims to offer the best engines on the market for all customer requirements and fuel types.



**DIPL. ING. ALEXANDER HAAS**  
 Head of the 4–8 liter and H2 program, DEUTZ AG

*Dipl. Ing. Alexander Haas converted his first DEUTZ engine to run on vegetable oil while he was still at school. He has been working at DEUTZ since 2000, following in the footsteps of his father before him. He initially joined the production planning team before becoming more closely involved in development as a technical project manager. In 2021, he became the Head of Technical Project Management on the 4–8 liter and H2 (gas) program.*



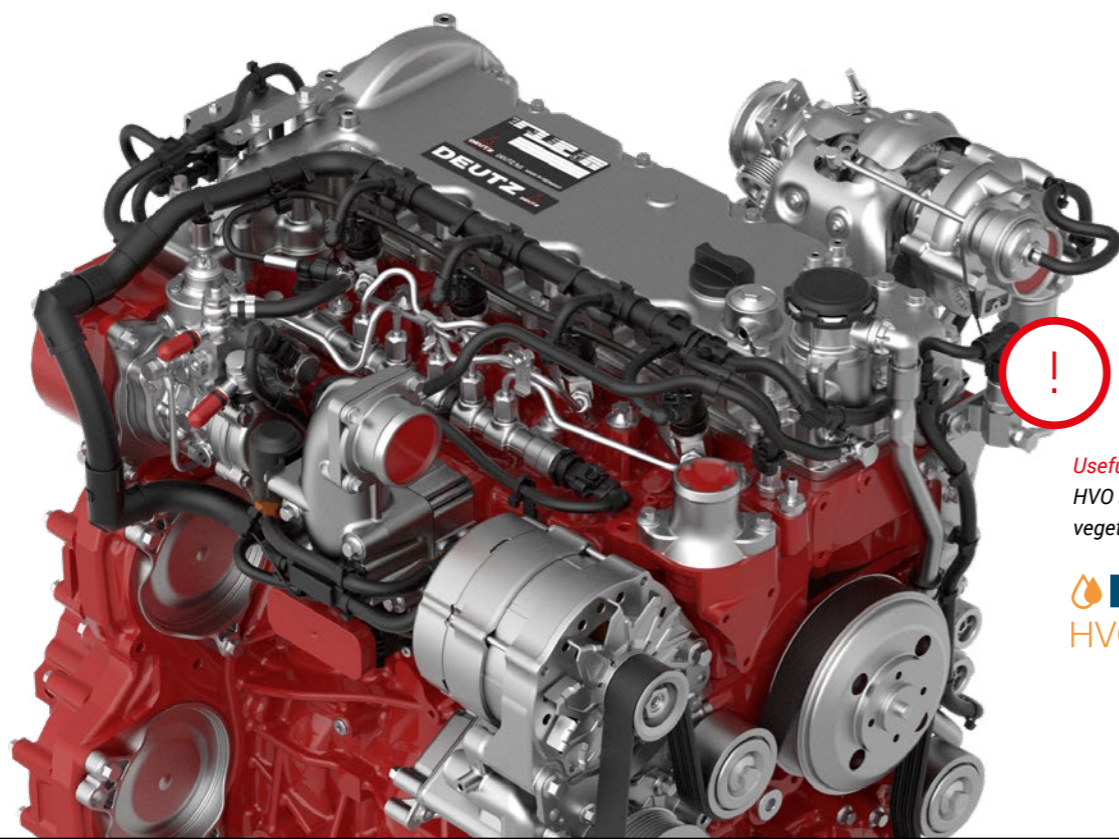
# A MODERN CLASSIC

DEUTZ is making its Classic business more profitable while driving its transformation towards zero-carbon.

DEUTZ firmly believes that off-highway carbon emissions can only be reduced with an intelligent mix of drive solutions. As a consequence, the drive specialist is optimizing its Classic business by making the conventional internal combustion engine ever cleaner. The TCD 3.9, which will go into production in 2025, significantly increases efficiency and reduces fuel consumption in the sub-4 liter category. DEUTZ is responding to strong market demand resulting from the engine's suitability for a wide range of machinery in the power range up to 130 kilowatt. Full electrification at the top end of this power range, for example, in heavy agricultural tractors, will remain a technological and commercial challenge over the next ten years.

The TCD 3.9 will be HVO certified meaning that, in addition to diesel, it will also be able to run on biofuels. DEUTZ also has a hydrogen variant of the drive in the pipeline. There are many sides to sustainability, and in addition to efficiency gains and lower-emission and zero-emission fuels, a further key element is the drive's useful life. After all, internal combustion engines in machinery run for a very long time, and even longer with the DEUTZ Xchange program.

"It is our conventional diesel engines that are generating the capital we need to fund our transformation," CEO Dr. Sebastian C. Schulte said at the DEUTZ AGM in April 2022. As a result, the drive specialist is continually increasing the profitability of its Classic business, for example, through cleaner and more efficient engines, adjusted price structures, and the ongoing optimization of its existing portfolio. This is helping to secure a sustainable future for DEUTZ.



**Useful fact:**  
HVO stands for hydrogenated vegetable oils

**DEUTZ**  
HVO CERTIFIED



Dr. Ing. Markus Müller, CTO & CSO of DEUTZ AG, outlines the opportunities that alternative drives offer DEUTZ customers.

## » THREE QUESTIONS FOR: Dr. Ing. Markus Müller

Further information about the HyCET project can be found on page 19.

- 1 **DEUTZ is driving forward the transformation of mobility. Which technologies are you looking at in particular?** We think it is still uncertain what a carbon-neutral truck, excavator, or tug might look like. DEUTZ is strong on innovation and is pursuing a technology-neutral approach, and as a result we are already well-positioned when it comes to zero-emission drives. Working with our subsidiaries Torqeedo and FUTAVIS, we have significantly expanded our E-DEUTZ product portfolio and, thanks to our shared approach to development, brought products to market very quickly. A prime example is our PowerTree mobile rapid-charging system, and our hydrogen engine is scheduled to enter full production by as early as 2024.
- 2 **What types of application can the DEUTZ TCG 7.8 H2 hydrogen engine be used in?** As it stands, the hydrogen internal combustion engine is the best alternative in the power output range of 100 kilowatt or more. It can be quickly industrialized and is carbon-neutral, as the combustion of hydrogen generates no CO<sub>2</sub> emissions because it does not contain carbon. Our first step was a hydrogen genset for power generation, as it is relatively simple

to put in place the supply infrastructure for hydrogen. The next step will be applications in trains and in logistics trucks, which is why the TCG 7.8 H2 is part of the HyCET project funded by Germany's Federal Ministry for Digital and Transport. In principle, the hydrogen engine can be used in all current DEUTZ applications.

- 3 **How does the new TCD 3.9 fit into DEUTZ's sustainability strategy?** We need the internal combustion engine in order to keep the world moving, and we aim to supply the best and cleanest engines possible. Our new 4 liter engine, for example, increases efficiency and reduces fuel consumption in off-highway applications. Going forward, the TCD 3.9 will be even greener as it can run on hydrotreated vegetable oil or synthetic fuels as well as on diesel. We also plan to further develop the engine so that it can run on hydrogen too.

More about the person:  
[www.deutz.com/en/about-us/board-of-management](http://www.deutz.com/en/about-us/board-of-management)



# CLEAN AND GREEN

DEUTZ is a pioneer of carbon-neutral drive solutions. It has the right engine for every customer and every application, and alternative drive solutions are a key part of its strategy.

DEUTZ is a pioneer of innovation in the transition to a carbon-neutral future, developing simple, safe, and cost-efficient solutions for its customers. It is leading the way with the development and manufacture of zero-emission drive technologies for use in areas such as construction and transportation logistics.

## Reducing emissions in the construction sector is a hot topic

“Power supply infrastructure is key when it comes to using alternative drive systems, which is why we have made it our mission to help our customers make the switch. The PowerTree from E-DEUTZ brings electricity to the vehicle – an important step towards climate neutrality,” says Dr. Ing. Markus Müller, CTO & CSO of DEUTZ AG. KTEG clearly has great faith in the PowerTree. In 2022, the manufacturer of specialist construction machinery ordered several PowerTrees from DEUTZ to supply its electric construction vehicles with energy.

“Reducing emissions in the construction sector is a hot topic for our customers, which is why our portfolio includes both electric excavators and the PowerTree mobile rapid charging station. We aim to ensure that our electric machinery is ready for use throughout the day. And it is equally important that it can be recharged in a short space of time. We are setting the benchmark, and that benefits our customers,” says Harald Thum, CEO of KTEG GmbH.



## THE NEW POWERTREE



In October 2022, DEUTZ presented the next generation of the PowerTree, which now offers additional benefits for customers. The optimized design, for example, allows the PowerTree, installed in a robust 10-foot container, to be transported even more easily to where it is needed. This mobile backup battery with a rapid charging point provides a charging capacity of up to 150 kilowatt. The capacity of the battery storage system can now be scaled to provide the optimum amount of charge for the customer's specific requirements.

The PowerTree scored highly at the Diesel Progress Summit of off-highway experts, where it won the Diesel Progress Summit Award in the category 'Electric or Hybrid Application of the Year'.

## HYDROGEN-POWERED EXCAVATORS

DEUTZ and KTEG are deepening their collaboration and have submitted a project proposal to the Jülich Research Centre. The partners are working on a zero-emission excavator in the 30-tonne class based on the DEUTZ TCG 7.8 H2 hydrogen engine. The plan is for preproduction of the engine to commence in 2024.

## Hydrogen engine from DEUTZ provides decentralized energy supply

In partnership with RheinEnergie AG, DEUTZ is trialing on-site electricity generation based on the TCG 7.8 H2 hydrogen engine. The partners' flagship project got under way in summer 2022 when the first H2 genset went into operation at RheinEnergie's cogeneration plant in Cologne. “We are a utility company for a major city and specialize in concepts for individual neighborhoods and districts,” said Dr. Dieter Steinkamp, CEO of RheinEnergie at the time, during a press conference on June 20, 2022. “An engine like this can help to provide electricity and heating locally. When combined with heat accumulators, heat pumps, solar installations, and electricity storage, this technology makes it possible to supply entire neighborhoods on a climate-neutral basis.”

With an output of around 200 kilowatt, the hydrogen engine is suitable for all current DEUTZ applications. DEUTZ is already registering a great deal of interest from its customers in the H2 engine, which it plans to take into full production in 2024.



*The solution we are piloting with RheinEnergie has huge potential for the local, carbon-neutral supply of energy in urban centers. «*

DIPL. ING. CHRISTIAN STEIN  
Head of the H2 GenSet project, DEUTZ AG

## DEUTZ hydrogen engine powers 18 tonne truck

In September 2022, Germany's Federal Ministry for Digital and Transport approved the funding application for the HyCET (Hydrogen Combustion Engine Trucks) research project. DHL Freight, KEYOU, TotalEnergies Marketing Deutschland, and the Volvo Group are the other companies joining DEUTZ on the project, which is led by the BMW Group. HyCET aims to show how trucks powered by hydrogen combustion engines can make transportation logistics more sustainable. Installed in an 18-tonne truck, the DEUTZ hydrogen engine will demonstrate its potential for clean logistics during a series of real-world trials at DEUTZ.

Daniela Kluckert, Parliamentary State Secretary to the Federal Minister for Digital and Transport: “Hydrogen technology provides us with an opportunity to rethink mobility. The wide-ranging requirements of transportation logistics make it especially important to find appropriate solutions. Using hydrogen as a means of storing energy, alongside battery-electric drive technology, is an excellent solution to the challenge of making the transportation sector more climate-friendly.”



# THE FUTURE IS HERE

This year's DEUTZ DAYS gave visitors the chance to experience innovative strategies and solutions for sustainable off-highway drive systems hands on.



»» *The DEUTZ DAYS provide a platform for fresh ideas and an opportunity for visitors to experience our drive solutions in action. Everything is tailored to our customers' requirements.«*

MATTHIAS BURMEISTER  
Head of Marketing, DEUTZ AG

The idea behind the DEUTZ DAYS, namely to offer a customer experience rather than just a product show, is simple and compelling. Under the banner 'We ensure the world keeps moving', DEUTZ invited international customers and media representatives to learn more about innovative drive technologies. DEUTZ showcased many of its drives in machinery that visitors could experience and test for themselves at the COREUM in Stockstadt on October 21 and 22, 2022. Experts from DEUTZ were on hand to answer questions about its extensive portfolio of hardware, software, and digital service solutions, such as telematics.



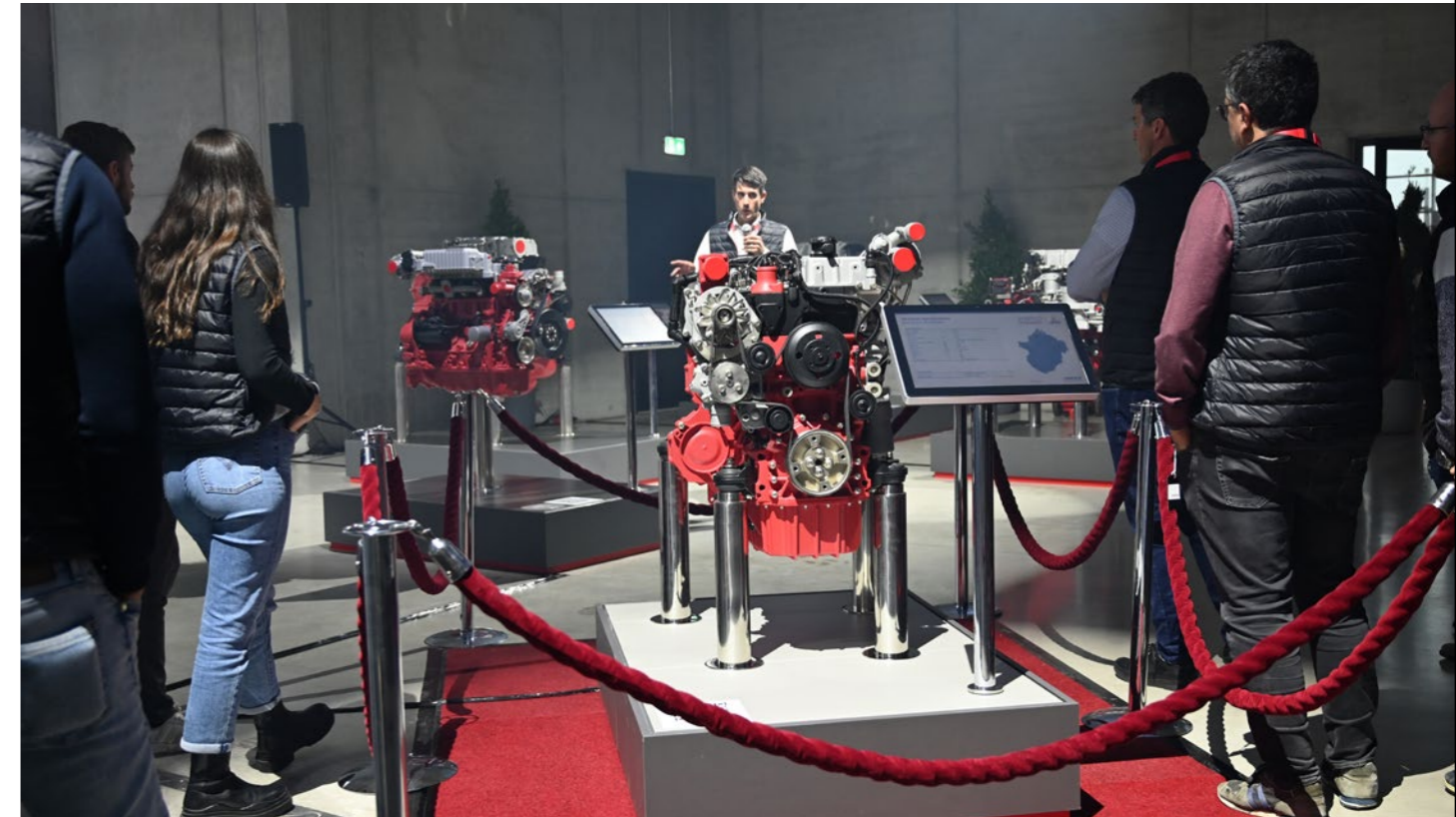
*The H2 GenSet produces green electricity.*

The manufacturer offers its customers tailored strategies and solutions – powered by electricity, hydrogen, or conventional fuel – for a carbon-neutral future.

The newest additions to the DEUTZ portfolio took center stage, with the drive manufacturer dedicating over 2,000 square meters of indoor space to them at the COREUM. There was plenty to discover at the DEUTZ DAYS and visitors were impressed by what they saw. Here are some of the highlights:



*A quiet worker: the JLG telehandler powered by an electric drive from DEUTZ.*



*World premiere of the TCD 3.9*

"I can't hear it!" was the stunned reaction of many visitors. The G5-18 A telehandler, JLG's first all-electric telehandler powered by a DEUTZ e-drive, was on show. The telehandler is fitted with a 400-volt DEUTZ electric drive powered by a lithium-ion battery. With an output of two times 40 kilowatt, this zero-emission vehicle has a load capacity of up to 3.5 tonnes and is ideally suited to construction and agricultural applications. The G5-18 A telehandler prototype is already fully functional. The zero-carbon vehicle powered by an E-DEUTZ drive can work for up to five hours on a full charge and can be recharged during the operator's lunch break.

### **New ways of generating electricity locally with gensets**

As part of its hydrogen strategy, DEUTZ joined forces with AVS and the Voith Group to build a mobile hydrogen-powered generator, which it unveiled at the event. Built by AVS, the genset combines a TCG 7.8 H2 hydrogen engine from DEUTZ with a generator to produce electricity. The internal hydrogen gas tank from Voith is rated for pressures up to 700 bar and meets the highest safety standards. The hydrogen

genset is a mobile electricity generator that is ideal for locations without access to mains power, such as construction sites. It quietly and efficiently generates power for electrical applications, and if green hydrogen is used, it is carbon-neutral.

The engine in the sub-4 liter category, a joint development with John Deere Power Systems, also had its world premiere at the DEUTZ DAYS. Customers and media representatives were able to see the TCD 3.9's reliability, versatility, and power. It is suitable for all industrial applications and is available with an output of up to 130 kilowatt. Thanks to its modular design, it can be made available in variants using lower-emission fuels such as gas and hydrogen.

*Further information about the highlights at the DEUTZ DAYS:*  
[www.deutzdays.com/en/dd22/](http://www.deutzdays.com/en/dd22/)



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PRIORITIES  
POTENTIAL  
**PERFORMANCE**  
PASSION

Quality and reliability are important to us, even when times are challenging. We offer our customers the best engines and outstanding service around the world. We are future-proofing our company by optimizing procurement and production, safeguarding supply chains and making our service business even more digital. Customer satisfaction is our goal, and we work toward it every day. As a team and around the world.





# PRIORITIZING POTENTIAL PERFORMANCE PASSION

Quality and reliability are improving. We offer our customers solutions around the world. We are future-proofing procurement and production, growing our service business even more. Our goal, and we work toward it every day.



The logistics center in Cologne-Kalk is at the heart of the global flow of spare parts. We are investing heavily along the entire supply chain to ensure that we can continue to offer our customers exceptional parts availability.



#### CHRISTIAN DAMM

Head of Service Supply Chain, DEUTZ AG

*Christian Damm, who holds a postgraduate degree in business administration, was captivated by the company during an internship at DEUTZ Australia. After joining DEUTZ AG in 2008 in series production logistics, he was made Head of Spare Part Procurement in 2011, before becoming Head of Supply Chain Management in 2018. Since being appointed Head of Service Supply Chain in 2020, his remit has included global spare part logistics.*



# CHARTING A RELIABLE COURSE

In economically challenging times, DEUTZ remains on course for profitability – thanks in part to an anticipatory pricing policy.



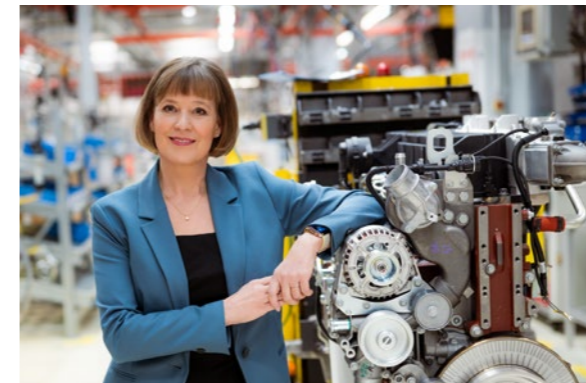
Economic and geopolitical uncertainties cast a shadow over much of 2022: The coronavirus pandemic disrupted key supply chains and the energy crisis was deepened by Russia's invasion of Ukraine. In an increasingly volatile and inflationary environment, the prices of energy, raw materials and logistics skyrocketed. Although the war in Ukraine did not have a direct material impact on DEUTZ's business

performance, the consequences in terms of the effect on the energy and commodity markets and on the global flow of goods have been very real for DEUTZ.

## Strengthening the competitive position

In 2022, in order to improve the Company's commercial performance, DEUTZ launched a package of measures as part of its Powering Progress performance initiatives. The new anticipatory pricing policy, which features alongside measures aimed at the ongoing optimization of production processes and purchasing, strengthens DEUTZ's competitive position. By making pricing for new engines and aftersales services more dynamic, DEUTZ has succeeded in maintaining its margins despite the inflationary environment. It adjusted its prices in two rounds in 2022.

The more market-oriented pricing policy is designed to compensate for swings in raw material and energy prices. Not only does this put DEUTZ on a more secure footing for the future, but the increased certainty also benefits the Company's long-standing suppliers and customers. Ensuring that the engines keep running for everyone.



With the aim of higher quality and lower costs, DEUTZ is striving for tighter integration between its production, logistics, and purchasing departments. Dr. Ing. Petra Mayer, COO at DEUTZ AG, explains why.



### Useful fact:

UNGC is the United Nations Global Compact, the world's largest initiative for responsible corporate governance.

## » THREE QUESTIONS FOR: Dr. Ing. Petra Mayer

- 1 **DEUTZ has created a new Board of Management role of Chief Operating Officer. What are the reasons for this?**  
This new role underlines our commitment to making DEUTZ even more competitive and thus better equipped for the future. Customer satisfaction is a major factor when it comes to a company's success. And our innovative drive systems meet our customers' requirements. The foundations for the high quality of our products and our excellent delivery reliability are laid at the purchasing and production stages. After all, an engine has an average of 650 individual parts. By focusing on our purchasing, logistics and production processes, we can leverage synergies, minimize costs, and optimize quality.
- 2 **In terms of process management, what are the main objectives that you want to achieve in the near future?**  
Our utmost priority is security of supply in our purchasing processes, i.e. safeguarding the global supply chains so that our production organization can run smoothly. We then need to analyze how we can streamline other processes and reduce costs in order to make DEUTZ even more profitable. This means

accelerating digitalization, forging ahead with automation, and simplifying IT processes across the entire Group. And on a fundamental level, we want to expand global collaboration, develop international skills and expertise, and strengthen regional responsibilities.

- 3 **What role do DEUTZ's human rights code and supplier code of conduct play in this context?**  
They have a very important role to play because the successful and sustainable management of a company depends not only on the achievement of financial targets but also on the manner in which they are achieved. At DEUTZ, we are taking responsibility in order to contribute to creating a better life for everyone in the future. However, the events of 2022 have made it clear that we can only overcome global challenges if we all work together. Compliance with our codes is an essential part of our internal and external interactions. That applies to our business partners and our employees alike. The codes document the commitments that we have made as signatories to the UNGC.

More about the person:  
[www.deutz.com/en/about-us/board-of-management](http://www.deutz.com/en/about-us/board-of-management)



# INDUSTRIAL INTELLIGENCE

DEUTZ has added digital services and data-driven applications to make its service offering more efficient.

S-DEUTZ. Service. Simply Smart. DEUTZ has significantly streamlined its day-to-day service business for its customers by expanding its digital offering. This saves time and money for customers and for DEUTZ. New IT systems, modern processes, and closer links to customers and service partners are increasing customer satisfaction and the potential for global growth in the service business. The result: DEUTZ has raised its target for 2025 from around €500 million to around €600 million. One of the factors behind the substantial growth in 2022 to around €450 million has been the Company's ability to maintain its capacity to deliver drive systems despite the pandemic and the war in Ukraine. At a time of disrupted supply chains, DEUTZ has also ensured that its customers have access to a reliable supply of spare parts.

DEUTZ firmly believes that closer ties along the value chain are the key to success in the service business. Interaction with customers and service partners is increasingly conducted via digital ordering and information systems such as the new advanced service tool. Using 3D models of DEUTZ drives, service technicians are able to select the required components with a simple click or tap, and see detailed service information ranging from straightforward maintenance operations through to complex repair procedures. What makes this possible is the digital drive history that is integrated in all internal and customer-side service

## CLOSE TO THE CUSTOMER

DEUTZ further expanded its global service network with the acquisition of its former service partners AUSMA Motorenrevisie B.V. in the Netherlands and South Coast Diesels in Ireland in 2022. The two companies sell and service diesel engines in their home markets, where they operate as multi-brand dealers. DEUTZ is also forging even closer links with its German customer base with the launch of sales and service company DEUTZ Deutschland GmbH. Working closely with the existing service network, the team in Stockstadt am Rhein has been supporting customers and dealers across Germany since January 2022.



applications. It also enables predictive maintenance and ensures that DEUTZ can offer customers the right maintenance kits and services at the right time.



### Useful fact:

2022 saw DEUTZ win the BOMAG Supplier Award in the Services & Solutions category in recognition of the speed and efficiency of its service offerings.



Compelling benefits: FUSIONHub was well received by visitors to the DEUTZ DAYS.

### The next generation of S-DEUTZ telematics

The drive specialist is well equipped for the future thanks to its data-platform technology. This package of hardware, software, and related services was launched in 2021 and already enables real-time engine condition monitoring. DEUTZ is now working with talpasolutions on expanding its digital service portfolio. The FUSIONHub software can analyze engine data as well as the entire application, from tires to each of the machine's add-on components. Users benefit in more ways than one: They have access to the maintenance schedules of the engines they are using and can see how long their machines have been in operation. Highly detailed control system data helps to minimize machine and component downtime while increasing productivity.

The data also helps to improve business performance, optimize costs, and minimize operating risk.

FUSIONHub works with companies in the heavy industry sector to use data that would otherwise be lost. The software has two key benefits. First, fleet operators can deploy their machines more efficiently. Second, because FUSIONHub allows OEMs and dealers to develop new service offerings, such as sophisticated diagnostics and repair solutions, companies are able to boost service life across their machines' entire lifecycle. Machine owners also benefit from solutions such as performance monitoring, which reminds them about maintenance cycles and provides prompts to optimize processes and machines.



*This is more than just a look under the hood; this is a service revolution: Simply Smart!«*

DAMIAN WECKMANN

Head of Digital Projects, Central Sales & Service, DEUTZ AG

# INVESTING IN TOMORROW

DEUTZ is making its production operations faster, better, and more efficient in order to pave the way for future growth.



Markus Heinz, Andreas Epp, and Bernd Klein from the team at the inhouse production center of excellence at DEUTZ AG (from left).

DEUTZ is investing in its future and has initiated and implemented various projects in order to improve and increase production. Just a stone's throw from its headquarters in Cologne-Porz, DEUTZ has started using its new multi-function center on a trial basis. The Company began dispatching the first drive systems to

customers from there in November 2022. In addition to engine storage and dispatch, the 45,000m<sup>2</sup> building has space for other logistics activities, including the empty containers center for outer packaging, part of stationary assembly, and EAT picking. The multi-function center simplifies DEUTZ's logistics structures



#### Useful fact:

EAT is the abbreviation for exhaust aftertreatment and refers to DEUTZ's exhaust gas technologies.

considerably, reducing the number of sites from five to two. By consolidating its premises in this way, the drive specialist is bringing production and logistics closer together and lowering costs at the same time. The multi-function center is scheduled to officially go into operation in the first half of 2023.

#### Twelve steps in 20 seconds

Lower takt time, higher quality. At its components plant in Herschbach, DEUTZ has further automated its production processes and thus made them more efficient. The new rocker arm machine takes just 20 seconds to execute the twelve steps needed to turn two blanks into rocker arms. DEUTZ has thus halved the takt time. The machine came on stream in summer 2022 and also harmonizes processes. And thanks to automated loading and unloading, DEUTZ is improving quality. Moreover, only one rocker arm machine is now needed, instead of the three previous machines. This reduces tooling and maintenance costs, thereby increasing competitiveness.

#### Shaping the future

DEUTZ is planning to add a further assembly line in hall 41 at its Cologne-Porz site. By deploying automated, collaborating systems at assembly line 6, the drive specialist is aiming to increase quality and flexibility and to save time and costs from the second half of 2023 onward. The new assembly line 6 is where the TCG 7.8 H2 hydrogen engine will be made when it enters full production in 2024. As in other areas, DEUTZ is taking a technology-neutral approach in assembly. This means that certain diesel engines in the 4 to 8 liter range can be built on the new line too. Employees working there will be supported by driverless assembly vehicles. Assembly line 6 will boast enhanced efficiency thanks to in-built screwdrivers and, in particular, extended drift areas that enable customer-specific assembly and parallel work to be carried out within the assembly stations.



Marcos Baz Arribas, a technician in the aftersales department, and José Manuel Romero, Head of the Service Center, DEUTZ Spain, next to the easily transportable engine test rig (from left).

#### DEUTZ Spain invests in a test rig

DEUTZ engines have to prove their worth on the new test rig at the service center in Madrid. The test rig can simulate a wide range of conditions under which the drive systems might work. This allows DEUTZ Spain to ensure that the engines meet all applicable norms and specifications, as well as the company's own quality standards. Along the way, DEUTZ is continually improving engine performance and reliability. The drive specialist's customers can watch the tests from the control room. Flexible and straightforward operation were the main focus while planning the test rig, which is installed in a 20-foot container and can be transported anywhere at any time. The new test rig allows DEUTZ Spain to check that drives are running reliably, thus extending their lifecycle. DEUTZ also inspects other manufacturers' engines on the test rig and subjects them to extensive tests. "We want to be more than a leading drive manufacturer; we also want to be a leading expert in engine refurbishment," says José Manuel Romero, Head of the Service Center, DEUTZ Spain. The only thing that counts for customers is that they receive a tested engine that meets the most stringent DEUTZ quality standards.

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PRIORITIES  
POTENTIAL  
PERFORMANCE  
**PASSION**

'We are driven by passion' is one of our corporate values. Innovation requires a strong commitment to achieving your goals, and it is innovation that has the power to change the world. We firmly believe this at DEUTZ, and it is reflected in our history, our sustainability strategy, and our approach as an employer. We promote a working culture that combines and strengthens entrepreneurial thinking and innovation. This enables us to add value for our customers, employees, and shareholders.



PRIOR  
POTEN  
PERFO  
PASSIO

'We are driven by passion' is one of our core values. It is a strong commitment to achieve our goals. Passion has the power to change the world. This is reflected in our history, our culture, and our success as an employer. We promote a culture that encourages entrepreneurial thinking and innovation for our customers, employees,



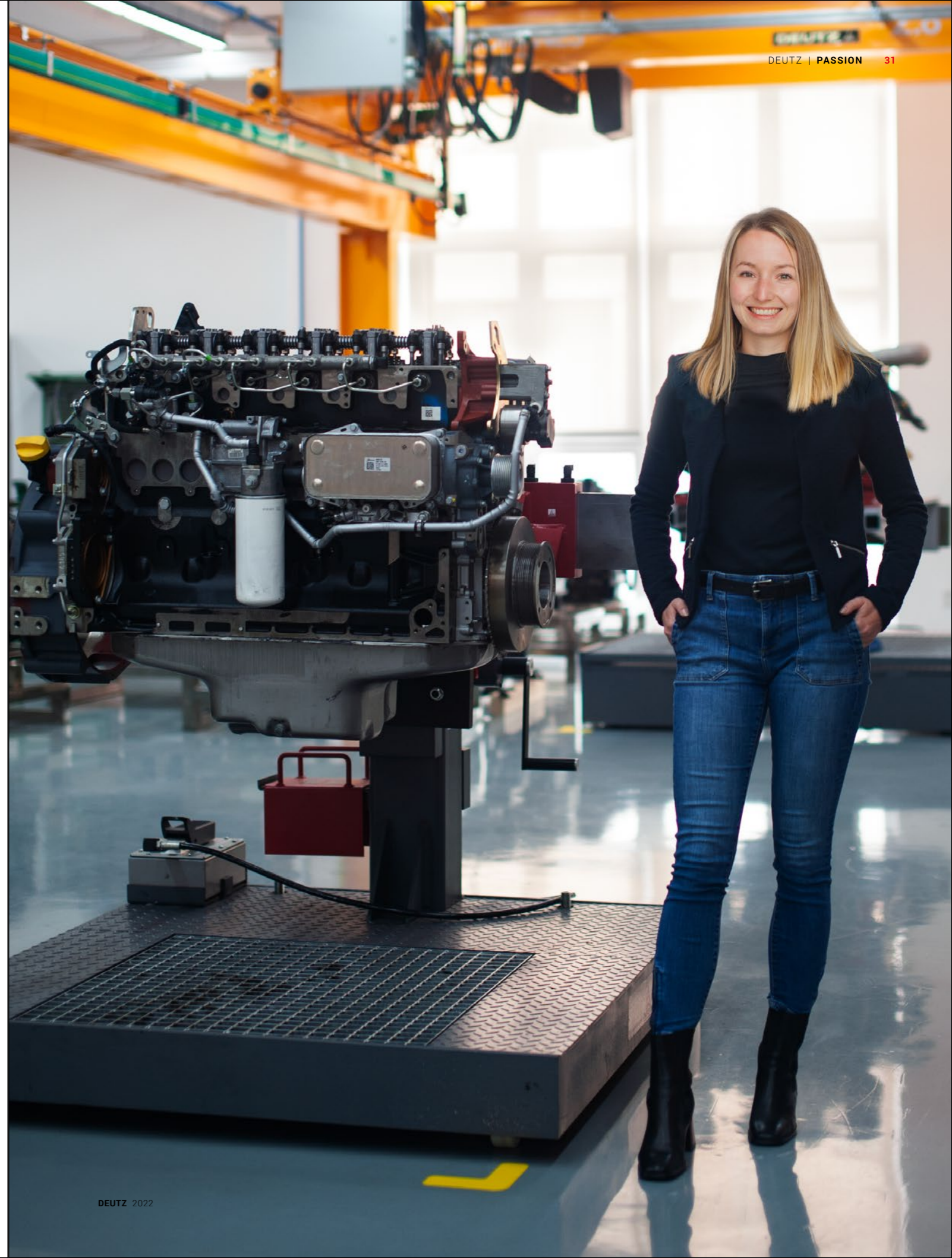
My move to Shanghai enables me to help shape international collaboration at DEUTZ. It is a career move that opens up many new opportunities and networks for me, which also benefits the Company.



**LUISA HEUSER**

Supply Chain Manager, DEUTZ Shanghai

*Luisa Heuser joined DEUTZ in 2018 as a masters student in the Research & Development department. She has been a firm fixture in our team since 2019, initially as an assistant to the CEO, then in purchasing. She has been based in Shanghai since the beginning of 2022.*



# DRIVEN BY A SENSE OF RESPONSIBILITY

DEUTZ is making clean engines, reducing packaging, and switching to green electricity: Sustainability has many facets.

Taking responsibility means thinking and acting in a way that is focused on the long term. The scope of DEUTZ's sustainability strategy covers not just the development and manufacturing of its innovative drive technologies but also the carbon footprint of all parts of the business. By 2026, the Company aims to have cut carbon emissions at its global production sites by around 70 percent compared with the base year of 2017.

### Power generation from renewable energy

Benefiting from almost non-stop sunshine during the day, the Magideutz site in Sapino, near Casablanca in Morocco, provides the ideal conditions for generating green electricity for the company's own use. To capture the energy of all this sunshine, the plant has invested in solar power and battery modules, partly drawing on E-DEUTZ products. From 2023, DEUTZ aims to generate all of the electricity itself that is required by its local production and administration unit in Morocco. The heating and air conditioning systems at the DEUTZ subsidiary are also set to run solely on green electricity. This is the next logical step for



Sunny side up: Since summer 2022, the solar panels installed on the roof of the new works fire station at DEUTZ's Cologne site have been converting solar energy into electricity.

the pioneer of zero-carbon drives and will allow it to reduce its carbon emissions in North Africa by 50 tonnes a year. At the site in Zafra, Spain, solar panels have been covering the employee parking lot and parts of the factory roof since summer 2021. They are able to generate around 1,300 megawatt hours annually and will bring DEUTZ Spain's annual carbon emissions down by 255 tonnes a year – the equivalent of 17,000 trees.

**!** 100 % green electricity

*Useful fact:*  
All DEUTZ production sites in Germany have been powered exclusively by sustainably generated electricity since January 1, 2021.



The team at the Service logistics center in Cologne: Mario Jakubowski, Sonja Frenzel, Christian Damm, Michael Schlesinger, and Rafael Obstoj (from left).

### Green logistics? You bet!

Not only is DEUTZ continually making its engines cleaner, it is also reducing transportation and the amount of packaging used for its engines and parts. The Service logistics center in Cologne, for example, has cut its use of packaging materials by more than 40 percent since 2020. The logistics team had previously looked into making goods inward and goods outward more sustainable. A total of

550 parts were reviewed, and for one in every three DEUTZ now either does without secondary packaging altogether or ensures it is more eco-friendly and more efficient. DEUTZ now packs and ships toggle switches in bundles rather than as single shrink-wrapped items, for example, and transports them in reusable boxes.

**>>>** *In logistics, ›less is more‹ is the key phrase when it comes to reducing the environmental impact. The lower the weight, the lower the emissions.«*

SONJA FRENZEL  
Group Manager for Goods Inward at the Service logistics center in Cologne, DEUTZ AG

# PUSHING BOUNDARIES

DEUTZ presented the 2022 Nicolaus August Otto Award to the youngest-ever female pilot to fly solo around the world, Zara Rutherford, who is soaring to new heights with pioneering spirit.

In 2022, the Belgian-British aviator Zara Rutherford was awarded the prestigious innovation prize from DEUTZ in recognition of her pioneering spirit and passion for technology. At the age of 19, Rutherford became the youngest woman to fly solo around the world. On January 20, 2022, she landed her Shark ultralight aircraft in Kortrijk, Belgium, from where she had embarked on her journey 155 days earlier. Rutherford comes from a family of aviators and took control of an aircraft cockpit for the first time at the age of 14. She completed her A levels in mathematics, economics, and physics and intends to study computer science/computer engineering at university. Her biggest dream is to become an astronaut. The teenager is also a world record holder with an entry in the Guinness World Records as the youngest female pilot to have flown solo around the world.

"Zara Rutherford is a high flyer in every sense. Her pioneering spirit and passion for technology enable her to push boundaries and set new records. Technological progress can only realize its full potential through action. It relies on people who recognize its

» *To me, being a pioneer means recognizing that there is always more to see and to explore in the world. Girls and young women, in particular, should feel empowered to pursue their dreams.«*

ZARA RUTHERFORD  
Winner of the 2022 Nicolaus August Otto Award



**Useful fact:**  
In 2022, DEUTZ presented the Nicolaus August Otto Award for the fourth time.



Dr. Ing. Markus Müller, CTO and CSO of DEUTZ AG, explains the DEUTZ hydrogen strategy at the #neuland conference.

possibilities and are able to bring them to life through their vision. In doing so, they become an inspiration for others. It takes courage, enthusiasm, and drive to take this path," stressed Dr. Ing. Markus Müller, CTO & CSO of DEUTZ AG, in his speech during the award ceremony. Professor Günther Schuh, a pioneer in the field of electrical engineering and Chair of Production Engineering at RWTH Aachen University, who is himself a keen pilot, gave the commendation speech in honor of this year's winner.

### The future of the hydrogen economy

DEUTZ presents the Nicolaus August Otto Award to visionary individuals to encourage zest for exploration, scientific curiosity, and innovative thinking. The award is presented annually and endowed with prize money of €30,000. The innovation prize is named for the inventor of the four-stroke engine and founder of the company that would later become DEUTZ AG.

In 2022, the drive specialist again presented the Nicolaus August Otto Award at the #neuland conference in Aachen, Germany. During the conference, Dr. Ing. Markus Müller participated in a discussion entitled 'The future of the hydrogen economy – are we ready?' with Professor Schuh, Helge-Frank Müller from Daimler Truck AG, Stefanie Peters from the Neumann & Esser Group, and other panelists. The #neuland conference addresses the issue that is also a priority for DEUTZ: the shift toward a more sustainable future.

Further information  
about the award and this year's winner at:  
[www.ottoaward.com/en](http://www.ottoaward.com/en)





# WORKING IN TANDEM

A cross-sectoral mentoring program provides support for women in leadership roles. The kick-off event was hosted by DEUTZ.



On May 16, 2022, the doors of the DEUTZ factory site opened to mentees and mentors attending this year's kick-off event for Cologne's mentoring program, which aims to support women in management positions. The cross-sectoral project offers participants an insight into the work culture at other companies, and an opportunity to broaden horizons and expand networks – in dialogue between mentees and mentors – as part of their ongoing professional development. Alongside DEUTZ, a whole host of leading Cologne-based companies, such as DEVK, Koelnmesse, and Rhein-Energie, are taking part in the program.

The DEUTZ team on the 2022/2023 mentoring program included mentees Ela Kilic and Julia Spannenkrebs, and mentors Jens Wannhoff and Oliver Hügeler. They all agreed that the stimulating dialogue with people outside their organization was invaluable, and are already applying the insights gained from new experiences and suggestions in their day-to-day work.



Timo Krutoff, CFO and Labor Director at DEUTZ AG, provides insights into the financial position of DEUTZ, sustainable finance, and DEUTZ as an employer.

## »» THREE QUESTIONS FOR: Timo Krutoff

**Useful fact:**  
A sustainability-linked loan (SLL) is a loan with terms that are tied to certain sustainability criteria.

- 1 **You assumed the role of CFO at DEUTZ with effect from December 1, 2022. What is your view of the Company's financial position?**  
I am very optimistic, because DEUTZ has been able to improve its profitability despite the challenging market environment. With an equity ratio of around 45 per cent, we also have enough financial headroom to continue to invest in the transformation of our business. However, there is still scope for improvement on the profitability front. That is why we are maintaining a disciplined approach to costs, especially in the challenging inflationary environment in which we currently find ourselves.
- 2 **For the first time, DEUTZ has taken out a loan that is linked to ESG criteria. Is this a sign of things to come?**  
Yes, absolutely. Companies have a crucial part to play in achieving environmental goals. We understand this and are ready to rise to the challenge. Our aim is to combine commercial success with the fulfillment of our environmental, social, and corporate governance responsibilities. Our sustainability-linked loan reflects where we stand and sends a clear message to our shareholders and investors. Sustainability

is a must, not an optional extra. And it creates opportunities for us as a company, for example in the form of more favorable financing terms.

- 3 **Labor shortages are a hot topic at the moment. How do you develop and retain talent?**  
By running our business in a way that makes people happy to come to work every day. As a company, we can look back on a long and successful history. But it would be fatal for us to become complacent. DEUTZ needs to evolve on all fronts in order to become a modern business. This entails not only the development of innovative products but also a cultural transformation that is backed by everyone, from our assembly workers right up to the Board of Management. Likewise, we are taking a future-oriented approach to the nurturing of talent. In 2022, the outstanding work of our Factory for Talents in the field of vocational training and professional development was recognized with an award for the twelfth consecutive time – an achievement that speaks for itself.

**More about the person:**  
[www.deutz.com/en/about-us/board-of-management](http://www.deutz.com/en/about-us/board-of-management)



# HAND IN HAND

The team spirit that pervades DEUTZ is a crucial element of its success as a business. The Company's family event provided an opportune moment to thank employees.

Ideas and progress come about by keeping on the move, something that has been embodied by DEUTZ throughout its nearly 160-year history. In 1876, Nicolaus August Otto invented the four-stroke engine and thus helped to get machinery, people and goods moving. Nowadays, DEUTZ is one of the world's leading manufacturers of innovative drive systems. It owes much of this success to its employees around the world,

who contribute ideas, hard work, and team spirit. DEUTZ employees and their families and friends therefore took center stage at the DEUTZ family event on September 15, 2022. Around 5,000 employees and guests were kept entertained by a varied program of activities at the Company's base in Cologne, which included a children's play building site and a performance by local band Kasalla. Factory tours



were also on offer so that employees' guests could gain an insight into what happens at DEUTZ. In his welcome address, Chief Executive Officer Dr. Sebastian C. Schulte made a point of also extending his thanks to family members and friends for the support and help that they provide in the background, enabling DEUTZ



employees to work together as a team. A 'donations bike' was another way for DEUTZ employees to show team spirit, with event participants able to burn off any excess energy for a good cause. DEUTZ converted the pedal-powered kilowatts into euros that it then donated to the Fluthilfe-Ahr charity, which supports people affected by the Ahr Valley floods.



Further information  
on the Fluthilfe-Ahr charity:  
[www.fluthilfe-ahr.de](http://www.fluthilfe-ahr.de)



## DONATIONS FROM DEUTZ FOR UKRAINE

DEUTZ and its employees supported refugees from Ukraine by donating goods and cash. At the collection points set up at the Company immediately after the outbreak of war, large quantities of day-to-day items were quickly amassed, such as non-perishable food, school supplies and medical products. By the end, DEUTZ was able to hand over a full truckload of urgently needed goods to an aid organization in the Polish city of Bydgoszcz. The Company also made cash donations to Aktion Deutschland hilft, an alliance of German relief organizations.



# AN EVENING OF ENGINEERING AND TECHNOLOGY AT DEUTZ

Following an enforced hiatus as a result of the pandemic, the 'Nacht der Technik' engineering and technology evening in Cologne finally made its comeback in 2022 – and DEUTZ was once again on board. On June 10, the drive specialist opened its Technikum engine museum to the public. The museum showcases more than 150 years of engine history across 600 square meters of exhibition space. Plenty of visitors took the opportunity to find out about the original gas-powered engine made between 1867 and 1876 and about DEUTZ's hydrogen engine, which – like those gas-powered originals – operates on a four-stroke cycle.



# CONSERVATION LEAVES A SWEET TASTE

In 2022, 17 beehives were set up at the DEUTZ site in Cologne. Onur Bozna, an amateur beekeeper, and his father are taking care of the 'DEUTZ bee colonies'. Around 850,000 honeybees collect nectar and pollen from nearby linden and acacia trees, producing up to 425kg of delicious honey. More importantly, the hives are beneficial for the environment and help to protect the honeybee, which is one of the planet's most important species of pollinator.



**Useful fact:**  
A bee colony includes 40,000 to 80,000 bees, all of which perform a specific function or task.

# TAKING FLIGHT

DEUTZ apprentices help out at a Cologne bird of prey sanctuary.



'Time rather than money' is the theme of the corporate volunteering day in Porz, when companies release employees from work for the day so that they can lend a hand in the community. DEUTZ is more than happy to support this project. Apprentices from the Company rolled up their sleeves once again this year and carried out some important maintenance tasks at a bird of prey sanctuary in Cologne. For more than 50 years, the Schutzgemeinschaft deutscher Wald association and the Freundeskreis Haus des

Waldes association have been taking care of sick, injured, and orphaned birds of prey and owls at the sanctuary. Keen to make a difference, the DEUTZ apprentices gave a new lease of life to a raised bed and the sanctuary's green spaces. This volunteering perfectly illustrates the importance that DEUTZ attaches to corporate social responsibility. And it always likes to support the local community. After all, it is only a short flight from DEUTZ's headquarters in Cologne to the bird of prey sanctuary.



# FINANCE

## OVERVIEW OF THE SEGMENTS IN THE DEUTZ GROUP

Since January 1, 2022, the Company's operating activities have been divided into the segments Classic and Green.

### DEUTZ CLASSIC

	2022	2021	Change
New orders (€ million)	1,981.1	1,947.7	1.7%
Unit sales (units)	181,249	160,880	12.7%
Revenue (€ million)	1,889.4	1,563.4	20.9%
EBIT <sup>1</sup> (€ million)	128.1	58.7	118.2%
EBIT margin <sup>1</sup> (%)	6.8	3.8	+3.0 PP

### DEUTZ GREEN

	2022	2021	Change
New orders (€ million)	52.5	64.9	-19.1%
Unit sales (units)	53,433	40,403	32.3%
Revenue (€ million)	64.0	53.9	18.7%
EBIT <sup>1</sup> (€ million)	-39.2	-22.4	-75.0%
EBIT margin <sup>1</sup> (%)	-61.3	-41.6	-19.7 PP

<sup>1</sup> before exceptional items.

The Classic segment encompasses all activities related to the development, production, distribution, and servicing of diesel and gas engines as well as the equity-accounted joint venture with Chinese construction equipment manufacturer SANY.

The Classic segment's share of consolidated revenue in 2022 was around 97 percent.

The Green segment consists of all activities related to new drive solutions. This includes hydrogen engines, the subsidiaries Torqeedo and battery management specialist Futavis, all-electric and hybrid-electric drives, mobile rapid charging stations, and the related service business.

Given that DEUTZ is currently only at the start of its transformation, the volume of business for the Green segment still largely reflects the performance of the DEUTZ subsidiaries Torqeedo and Futavis and, in terms of earnings, also the growth in research and development activities in the field of electric and hydrogen-powered drive systems.

## INCOME STATEMENT FOR THE DEUTZ GROUP

€ million

	2022	2021
<b>Revenue</b>	<b>1,953.4</b>	<b>1,617.3</b>
Cost of sales	-1,574.8	-1,331.7
Research and development costs	-105.8	-90.9
Selling expenses	-120.6	-103.2
General and administrative expenses	-69.0	-61.6
Other operating income	35.3	27.0
Other operating expenses	-27.4	-22.4
Impairment of financial assets and reversals thereof	-5.0	-0.2
Profit/loss on equity-accounted investments	-3.7	-0.8
Other net investment income	0.2	0.6
<b>EBIT</b>	<b>82.6</b>	<b>34.1</b>
Interest income	1.3	0.2
Interest expense	-7.2	-5.2
Other financial income	-0.9	0.0
<b>Financial income, net</b>	<b>-6.8</b>	<b>-5.0</b>
<b>Net income before income taxes</b>	<b>75.8</b>	<b>29.1</b>
Income taxes	4.4	9.1
<b>Net income</b>	<b>80.2</b>	<b>38.2</b>
thereof attributable to shareholders of DEUTZ AG	80.2	38.2
<b>Earnings per share (basic/diluted, €)</b>	<b>0.66</b>	<b>0.32</b>

## STATEMENT OF COMPREHENSIVE INCOME FOR THE DEUTZ GROUP

€ million

	2022	2021
<b>Net income</b>	<b>80.2</b>	<b>38.2</b>
<b>Amounts that will not be reclassified to the income statement in the future</b>	<b>21.1</b>	<b>7.6</b>
Remeasurements of defined benefit plans	21.1	7.6
<b>Amounts that will be reclassified to the income statement in the future if specific conditions are met</b>	<b>-3.1</b>	<b>7.6</b>
Currency translation differences	0.3	9.7
thereof profit/loss on equity-accounted investments	-1.1	5.5
Effective portion of change in fair value from cash flow hedges	-3.7	-2.1
Fair value of financial instruments	0.3	0.0
<b>Other comprehensive income, net of tax</b>	<b>18.0</b>	<b>15.2</b>
<b>Comprehensive income</b>	<b>98.2</b>	<b>53.4</b>
thereof attributable to shareholders of DEUTZ AG	98.2	53.4

For all the DEUTZ Group's key financials for 2022, visit: [www.deutz.com/gb2022/en](http://www.deutz.com/gb2022/en)



## BALANCE SHEET FOR THE DEUTZ GROUP

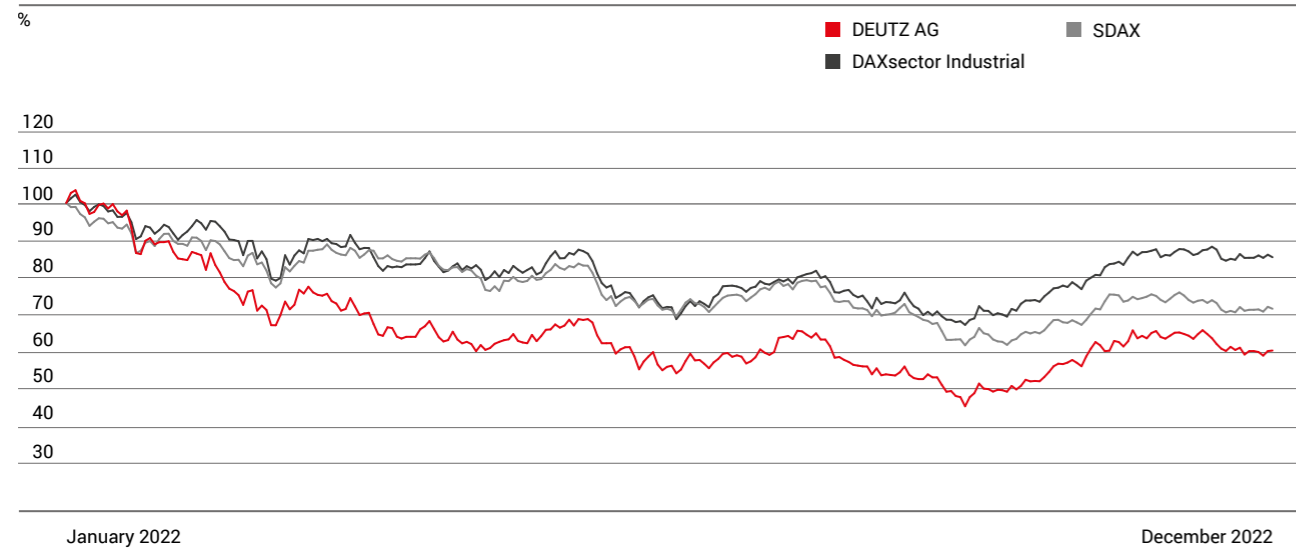
€ million		
<b>Assets</b>	<b>Dec. 31, 2022</b>	Dec. 31, 2021
Property, plant and equipment	394.7	358.9
Intangible assets	169.3	181.8
Equity-accounted investments	50.6	56.4
Other financial assets	14.4	11.1
<b>Non-current assets (before deferred tax assets)</b>	<b>629.0</b>	<b>608.2</b>
Deferred tax assets	101.3	88.6
<b>Non-current assets</b>	<b>730.3</b>	<b>696.8</b>
Inventories	451.6	375.3
Trade receivables	186.2	135.7
Other receivables and assets	50.7	40.3
Receivables in respect of tax refunds	1.7	5.9
Cash and cash equivalents	54.9	36.1
<b>Current assets</b>	<b>745.1</b>	<b>593.3</b>
<b>Total assets</b>	<b>1,475.4</b>	<b>1,290.1</b>
<b>Equity and liabilities</b>	<b>Dec. 31, 2022</b>	Dec. 31, 2021
<b>Issued capital</b>	<b>309.0</b>	<b>309.0</b>
Additional paid-in capital	28.8	28.8
Other reserves	0.6	3.7
Retained earnings and accumulated income	330.4	246.9
<b>Equity attributable to shareholders of DEUTZ AG</b>	<b>668.8</b>	<b>588.4</b>
<b>Equity</b>	<b>668.8</b>	<b>588.4</b>
Provisions for pensions and other post-retirement benefits	86.0	126.7
Deferred tax liabilities	2.0	1.8
Other provisions	28.4	33.4
Financial debt	77.2	49.2
Other liabilities	2.2	3.6
<b>Non-current liabilities</b>	<b>195.8</b>	<b>214.7</b>
Provisions for pensions and other post-retirement benefits	11.1	11.1
Other provisions	81.7	85.6
Financial debt	141.9	66.6
Trade payables	291.5	257.8
Liabilities arising from income taxes	4.9	3.0
Other liabilities	79.7	62.9
<b>Current liabilities</b>	<b>610.8</b>	<b>487.0</b>
<b>Total equity and liabilities</b>	<b>1,475.4</b>	<b>1,290.1</b>

## CASH FLOW STATEMENT FOR THE DEUTZ GROUP

€ million		
	<b>2022</b>	2021
<b>EBIT</b>	<b>82.6</b>	<b>34.1</b>
Income taxes paid	-9.9	-4.3
Depreciation, amortization and impairment of non-current assets	93.6	89.0
Gains/losses on the sale of non-current assets	0.4	-0.2
Profit/loss and impairment on equity-accounted investments	3.7	1.5
Other non-cash income and expenses	0.7	-1.2
Change in working capital	-89.2	-0.8
Change in inventories	-72.4	-94.1
Change in trade receivables	-48.0	-18.0
Change in trade payables	31.2	111.3
Change in other receivables and other current assets	-6.7	-7.2
Change in provisions and other liabilities (excluding financial liabilities)	-17.5	-17.6
<b>Cash flow from operating activities</b>	<b>57.7</b>	<b>93.3</b>
Capital expenditure on intangible assets, property, plant and equipment	-58.2	-61.7
Financial investments	-3.8	-5.8
Acquisition of subsidiaries	-5.4	-0.6
Proceeds from the sale of non-current assets	0.2	0.9
<b>Cash flow from investing activities</b>	<b>-67.2</b>	<b>-67.2</b>
Dividend payments to shareholders	-18.2	0.0
Interest income	0.3	0.1
Interest expense	-7.4	-4.6
Repayment of capital contributions to non-controlling interests	0.0	-0.2
Cash receipts from borrowings	89.5	15.0
Repayments of loans	-20.0	-50.8
Principal elements of lease payments	-16.6	-15.6
<b>Cash flow from financing activities</b>	<b>27.6</b>	<b>-56.1</b>
<b>Cash flow from operating activities</b>	<b>57.7</b>	<b>93.3</b>
<b>Cash flow from investing activities</b>	<b>-67.2</b>	<b>-67.2</b>
<b>Cash flow from financing activities</b>	<b>27.6</b>	<b>-56.1</b>
<b>Change in cash and cash equivalents</b>	<b>18.1</b>	<b>-30.0</b>
<b>Cash and cash equivalents at Jan. 1</b>	<b>36.1</b>	<b>64.7</b>
Change in cash and cash equivalents	18.1	-30.0
Change in cash and cash equivalents related to exchange rates	0.1	1.4
Change in cash and cash equivalents related to the basis of consolidation	0.6	0.0
<b>Cash and cash equivalents at Dec. 31</b>	<b>54.9</b>	<b>36.1</b>

## DEUTZ IN THE CAPITAL MARKETS

DEUTZ shares relative to DAXsector Industrial and SDAX (indexed)

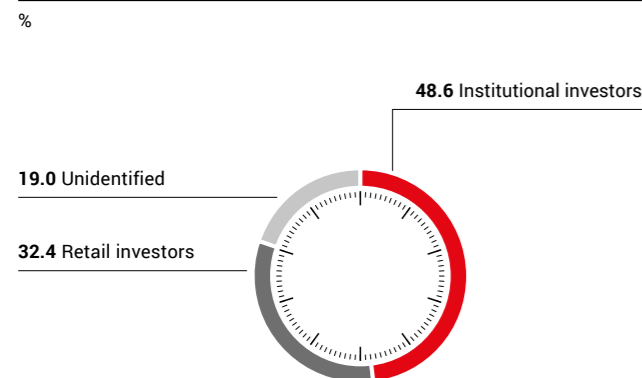


Key figures for DEUTZ shares

	2022	2021	2022	2021
Number of shares (Dec. 31, million)	120.9	120.9	Share price <sup>1</sup> (Dec. 31, €)	4.05 / 6.57
Market capitalization (Dec. 31, € million)	489.0	794.1	Share price high <sup>1</sup> (€)	7.00 / 8.29
Earnings per share (€)	0.66	0.32	Share price low <sup>1</sup> (€)	3.02 / 5.10

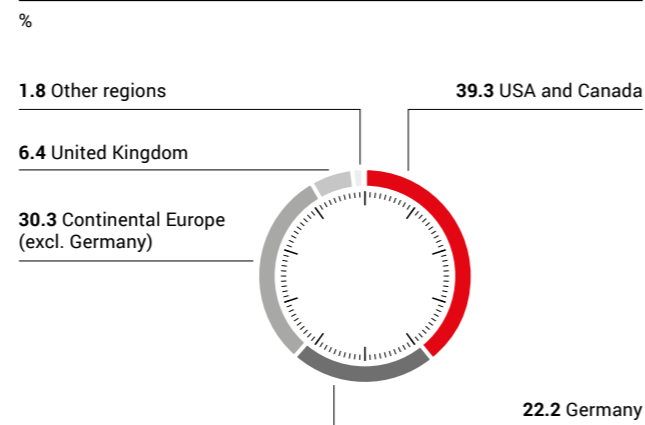
<sup>1</sup> Xetra closing price.

Shareholder structure<sup>1</sup>



<sup>1</sup> Nasdaq, December 2022.

Shareholder structure by country (institutional investors)<sup>1</sup>



<sup>1</sup> Nasdaq, December 2022.

## THE DEUTZ 2022 ANNUAL REPORT

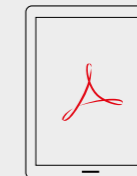
In 2020, DEUTZ decided that it would no longer print its annual reports. We are thus making a contribution to protecting the environment and mitigating climate change, as set out in our Taking Responsibility sustainability strategy.

The 2022 annual report can be found here: [annualreport.deutz.com/2022](https://annualreport.deutz.com/2022)



THE 2022 ONLINE ANNUAL REPORT  
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## FINANCIAL CALENDAR

2023	APRIL 27	Annual General Meeting (virtual)
	MAY 4	Quarterly statement for the first quarter of 2023 Conference call with analysts and investors
	AUGUST 10	Interim report for the first half of 2023 Conference call with analysts and investors
	NOVEMBER 9	Quarterly statement for the first to third quarter of 2023 Conference call with analysts and investors
2024	MARCH	2023 annual report Annual results press conference with analysts and investors
	MAY	Annual General Meeting

All financial dates:

[www.deutz.com/en/investor-relations/financial-calendar](http://www.deutz.com/en/investor-relations/financial-calendar)



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March 6, 2023

## DEUTZ GROUP: FIVE-YEAR OVERVIEW

€ million

	2022	2021	2020	2019	2018
New orders	2,033.6	2,012.6	1,322.5	1,654.3	1,952.6
Unit sales (units)	234,682	201,283	150,928	211,667	214,776
thereof DEUTZ engines	181,268	160,882	121,034	–	–
thereof Torqeedo	53,414	40,401	29,894	–	–
Revenue	1,953.4	1,617.3	1,295.6	1,840.8	1,778.8
EBITDA	176.2	123.1	–0.2	175.5	161.4
EBITDA before exceptional items	183.0	126.2	31.7	166.2	161.4
EBIT	82.6	34.1	–106.6	88.1	82.0
thereof exceptional items	–6.8	–3.1	–31.9	9.3	0.0
Adjusted EBIT (EBIT before exceptional items)	89.4	37.2	–74.7	78.8	82.0
EBIT margin (%)	4.2	2.1	–8.2	4.8	4.6
EBIT margin before exceptional items (%)	4.6	2.3	–5.8	4.3	4.6
Net income	80.2	38.2	–107.6	52.3	69.9
Net income before exceptional items	86.1	41.3	–75.7	44.2	69.9
Earnings per share (€)	0.66	0.32	–0.89	0.43	0.58
Earnings per share before exceptional items (€)	0.71	0.34	–0.63	0.37	0.58
Total assets	1,475.4	1,290.1	1,180.5	1,301.2	1,249.3
Non-current assets	629.0	608.2	613.6	619.5	506.2
Equity	668.8	588.4	535.2	652.4	619.1
Equity ratio (%)	45.3	45.6	45.3	50.1	49.6
Cash flow from operating activities	57.7	93.3	44.9	115.6	97.5
Free cash flow <sup>1</sup>	–16.6	21.6	–35.8	–36.6	14.5
Net financial position <sup>2</sup>	–164.2	–79.7	–83.8	–15.2	93.7
Working capital <sup>3</sup>	346.3	253.2	235.0	293.2	276.2
Working capital ratio <sup>4</sup> (average, %)	16.7	15.5	21.8	17.4	15.8
Capital expenditure <sup>5</sup> (after deducting grants)	111.6	65.7	91.7	86.5	59.1
Depreciation and amortization	93.6	89.0	106.4	87.4	79.4
Research and development expenditure (after deducting grants)	90.8	82.3	81.4	95.8	85.0
thereof capitalized	5.3	6.8	12.6	21.7	21.0
Employees <sup>6</sup> (number as at Dec. 31)	4,975	4,751	4,586	4,906	4,631

<sup>1</sup> Cash flow from operating and investing activities less interest expense.

<sup>2</sup> Cash and cash equivalents less current and non-current interest-bearing financial debt.

<sup>3</sup> Inventories plus trade receivables less trade payables.

<sup>4</sup> Average working capital at the four quarterly reporting dates divided by revenue for the previous twelve months.

<sup>5</sup> Capital expenditure on property, plant and equipment (including right-of-use assets in connection with leases) and intangible assets, excluding capitalization of R&D.

<sup>6</sup> From 2019 onward, the number of employees is expressed in FTEs (full-time equivalents).

DEUTZ WORLDWIDE >>

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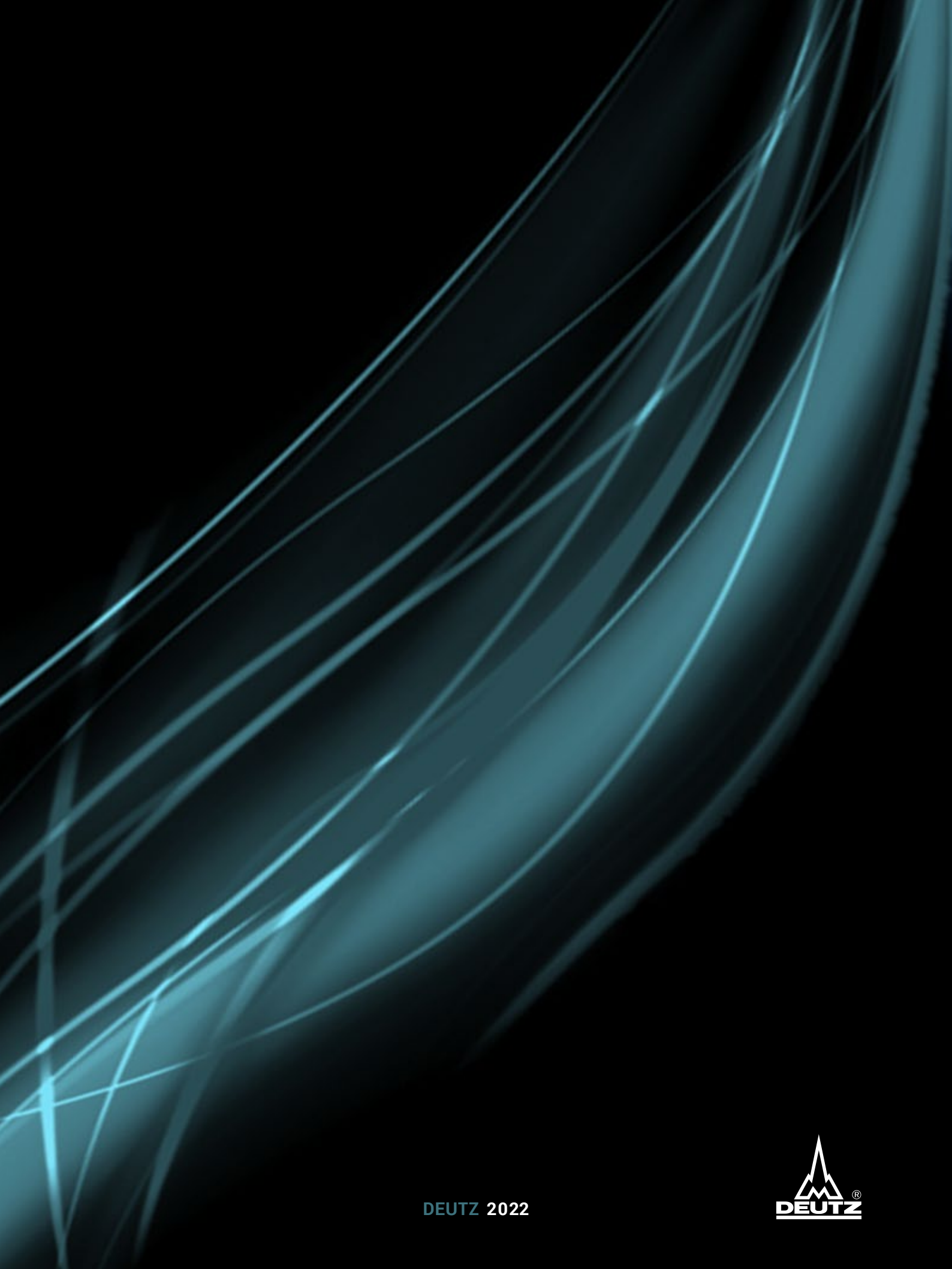
## DEUTZ WORLDWIDE

DEUTZ WORLDWIDE >>



- 11 production sites
- 15 affiliated companies
- 29 Service Centers/Power Centers
- 5 sales offices





DEUTZ 2022

