

## PRESS RELEASE

### **DLR and DEUTZ form alliance for hydrogen applications**

- Joint research program to focus on making construction-site vehicles more sustainable
- Development of carbon-neutral technologies for off-highway vehicles

Cologne, August 26, 2021 – Vehicles used on construction sites and in agriculture are generally heavy-duty machines that need a lot of power to move both themselves and their loads. Most run on diesel engines. But a switch to hydrogen-powered drives has the potential to make them more environmentally friendly by cutting their emissions to zero. The German Aerospace Center (Deutsches Zentrum für Luft- und Raumfahrt (DLR)) is working with Cologne-based engine manufacturer DEUTZ to develop new ideas and solutions for the operation of construction equipment and agricultural machinery using hydrogen. Representatives of the two partners signed a cooperation agreement to this effect on August 26, 2021.

The alliance between DEUTZ and the German Aerospace Center is a product of the DLR.InnovationHub, which brings together actors from the worlds of research and commerce. It fast-tracks the trialing of innovative new ideas and in doing so helps new technologies make the leap from research to application. The current focus is on the ‘green construction site’, which involves converting existing technologies used in building applications to make them low-carbon or even carbon-free. The DLR’s technology marketing team and the DEUTZ Innovation Center are coordinating the joint activities.

“As part of an intensive collaboration process, research and development expertise is being brought to bear to come up with new solutions to specific real-world challenges,” says Professor Karsten Lemmer, the member of the DLR Executive Board responsible for innovation, knowledge transfer, and research infrastructure. “Formats such as the DLR.InnovationHub, and the partnerships that result from it, are how the DLR fulfils its mission of turning research into commercially viable innovations.”

“The cooperation agreement with the DLR is an important milestone in our development activities,” says Dr. Ing. Markus Müller, DEUTZ’s Chief Technology Officer . “The aim is to speed

up progress in making hydrogen drives viable for the off-highway segment, and we will be combining our expertise and R&D capabilities to achieve this.”

### **Off-highway vehicles – individual solutions for individual requirements**

Excavators, wheel loaders, tractors, crawlers, and combine harvesters: They are all designed to carry out specific tasks, and so they have varying requirements in terms of energy consumption, power output, fuel capacity, and operating time. The researchers from the DLR Institute of Vehicle Concepts will initially be working with their partners at DEUTZ to scope out the necessary parameters – both technological and commercial – for making off-highway vehicles carbon-neutral. The people who operate the machinery will also be asked about their requirements, particularly with regard to vehicle data, machine variants, and load and usage profiles. DEUTZ will be able to draw on its broad product portfolio to offer invaluable insights in these areas. The next phase of the project will see the partners compare and evaluate the different technological solutions, focusing in particular on energy logistics for selected application scenarios in agriculture and construction. The aim is to come up with solutions that will allow the vehicles used in these scenarios to be powered by hydrogen drives.

### **The refueling challenge**

Vehicles powered by hydrogen need to be refueled more frequently than their diesel equivalents. This is because diesel has a higher energy density than hydrogen. Ideally, refueling should be integrated into the existing workflows. The DEUTZ-DLR collaboration will mainly be looking at solutions focused on this particular aspect. Mobile, intelligent, and connected fueling systems are one potential approach. This could drastically reduce the distance traveled for refueling and go some way to compensating for the additional effort involved in planning and carrying out the refueling process. Mobile, self-driving refueling robots are another idea, and could be used when the operators take a break, for example.

The engine company.



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### **About DEUTZ AG**

*DEUTZ AG, a publicly traded company headquartered in Cologne, Germany, is one of the world's leading manufacturers of innovative drive systems. Its core competencies are the development, production, distribution, and servicing of diesel, gas, and electric drive systems for professional applications. It offers a broad range of engines delivering up to 620 kW that are used in construction equipment, agricultural machinery, material handling equipment, stationary equipment, commercial vehicles, rail vehicles, and other applications. DEUTZ has around 4,600 employees worldwide and over 800 sales and service partners in more than 130 countries. It generated revenue of almost €1.3 billion in 2020. Further information is available at [www.deutz.com](http://www.deutz.com).*

### **About the German Aerospace Center (DLR)**

*DLR is the Federal Republic of Germany's research centre for aeronautics and space. We conduct research and development activities in the fields of aeronautics, space, energy, transport, security and digitalisation. The German Space Agency at DLR plans and implements the national space programme on behalf of the federal government. Two DLR project management agencies oversee funding programmes and support knowledge transfer. Climate, mobility and technology are changing globally. DLR uses the expertise of its 55 research institutes and facilities to develop solutions to these challenges. Our 10,000 employees (as of February 2021) share a mission – to explore Earth and space and develop technologies for a sustainable future. In doing so, DLR contributes to strengthening Germany's position as a prime location for research and industry. More at: [www.dlr.de](http://www.dlr.de).*