



Media information  
10.03.2022

## **CO<sub>2</sub>-free driving pleasure in all weather conditions: The BMW iX5 Hydrogen in final winter testing close to the Arctic Circle.**

**+++ Hydrogen fuel cell technology also enables unrestricted sustainable mobility in extremely low outside temperatures +++ BMW Group keen to be involved in Europe-wide initiative to develop a hydrogen economy +++**

**Munich/Arjeplog.** The BMW iX5 Hydrogen is currently undergoing a demanding programme of testing in extremely challenging weather conditions. It is all part of final winter testing for the car on public roads and at the BMW Group's testing centre in Arjeplog, northern Sweden. The integrated functional testing and validation of the fuel cell system, hydrogen tanks, peak power battery and central vehicle control unit have confirmed that this additional CO<sub>2</sub>-free mobility option can also be relied on to provide sustainable driving pleasure with high levels of comfort and unrestricted performance in extreme sub-zero temperatures.

The tests close to the Arctic Circle see the BMW Group pressing ahead with its development process for the BMW iX5 Hydrogen. The company will produce a small series of the model later in the year and is also committed to helping expand the network of hydrogen fuelling stations. "The winter testing under extreme conditions clearly shows that the BMW iX5 Hydrogen can also deliver full performance in temperatures of -20°C and therefore represents a viable alternative to a vehicle powered by a battery-electric drive system," says **Frank Weber, Member of the Board of Management of BMW AG, Development**. "For us to be able to offer our customers a fuel cell drive system as an attractive sustainable mobility solution, a sufficiently extensive hydrogen infrastructure also needs to be in place."

### **BMW iX5 Hydrogen: hallmark BMW dynamics, range and everyday usability all year round.**

In these test runs on the ice and snow around Arjeplog, the BMW iX5 Hydrogen is busy demonstrating how reliably, comfortably and powerfully its hydrogen fuel cell drive system can already meet the mobility requirements of everyday life. After racking up hundreds of sessions on test rigs and in-depth field testing on the road, this adds another chapter to its development story.

The evidence is there for all to see: here, in this extreme cold, the hydrogen fuel cell drive system displays the same everyday usability as a conventional internal combustion engine. Full system power quickly comes on tap. Even in these freezing conditions, the



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drive system continues to offer its full operating range. And replenishing the hydrogen tanks takes only three to four minutes, even in the depths of winter. "The hydrogen fuel cell drive system combines the best of both drive worlds, regardless of the time of year and outside temperatures: it offers the locally emission-free mobility of an electric vehicle and the unrestricted everyday usability – including short refuelling stops – familiar from models with an internal combustion engine," says **Jürgen Guldner, Vice President of Hydrogen Fuel Cell Technology and Vehicle Projects at the BMW Group.**

The drive system on board the BMW iX5 Hydrogen teams fuel cell technology with an **electric motor using fifth-generation BMW eDrive technology.** The hydrogen it uses as an energy source is stored in two 700-bar tanks made from carbon-fibre-reinforced plastic (CFRP). The fuel cell converts the hydrogen into electric power, generating output of 125 kW/170 hp. Plus, the electric motor can add the energy stored in a power battery to the mix. This battery is charged either through energy recovery or from the fuel cell. All of which means that **system output of 275 kW/374 hp** is available when the driver decides to explore the upper reaches of the car's dynamic abilities. The only emission released by the fuel cell is water vapour. And its waste heat is harnessed particularly efficiently to warm the car's interior.

### **Unique drive system meets all requirements.**

The drive, energy storage and control systems all pass the ultimate test of endurance in the wintry surrounds of Lapland. Added to which, specially prepared ice surfaces and snow-covered roads offer the perfect conditions to test the integrated application of all the drive and chassis systems. This also encompasses the steering, springs and dampers, as well as the chassis control systems and the interplay of the friction brakes and deceleration by energy recuperation. Here again, the BMW iX5 Hydrogen is able to make its strengths count, as it also weighs less than a comparable battery-electric model.

The combination of fuel cell and peak power battery gives the BMW iX5 Hydrogen a **globally unique drive system.** Its technology has the potential to add another pillar to the BMW Group's drive system portfolio for locally CO<sub>2</sub>-free mobility. BMW i – as a brand focused entirely on mobility producing zero local emissions – could in future offer vehicles with a hydrogen fuel cell drive system alongside its battery-electric models. This would allow it, most strikingly, to meet the mobility requirements of customers who do not have their own access to electric charging infrastructure, frequently travel long distances or desire a high degree of flexibility.



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#### **BMW Group supports creation of a comprehensive hydrogen infrastructure.**

Alongside the production of hydrogen using renewable energy sources, an important element in sustainable personal mobility as offered by fuel cell vehicles is an extensive supply infrastructure. "At the BMW Group we are therefore supporting the endeavours of the European Commission to put in place the **AFIR (Alternative Fuels Infrastructure Regulation)** covering the parallel **roll-out of hydrogen fuelling stations and an electric charging infrastructure,**" says Jürgen Guldner. "Indeed, we would like to see an even more ambitious plan and earlier implementation." Under the "Fit for 55" package of legislation launched as part of its Green Deal, the European Commission is aiming to create a mandatory basic infrastructure. With the implementation of the AFIR draft, 700-bar hydrogen fuelling stations would be set up at intervals of a maximum 150 kilometres (93 miles) along the main transport routes in all member states across Europe. The BMW Group welcomes this initiative and is pushing for the intervals to be reduced to 100 kilometres (62 miles) by 2027.

The BMW Group likewise welcomes and supports activities currently underway to promote innovations in Germany and other European countries aimed at developing a hydrogen economy and driving the production of green hydrogen. These include, most prominently, the large-scale hydrogen projects under the **IPCEI (Important Projects of Common European Interest)** umbrella. This European Union initiative, which is supported in Germany by the Federal Ministry for Economic Affairs and Federal Ministry of Transport as well as by the individual states, covers the entire value chain with its range of projects – from hydrogen generation, through transportation to applications such as heating of buildings, energy supply, industry and mobility. The BMW Group already expressed its interest in getting involved in this initiative in 2021. Under the IPCEI framework, the company sees an opportunity to boost the development of fuel cell and storage tank systems significantly and, in so doing, take an important step towards the industrialisation of hydrogen technology for personal mobility.



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### **The BMW Group**

With its four brands BMW, MINI, Rolls-Royce and BMW Motorrad, the BMW Group is the world's leading premium manufacturer of automobiles and motorcycles and also provides premium financial and mobility services. The BMW Group production network comprises 31 production and assembly facilities in 15 countries; the company has a global sales network in more than 140 countries.

In 2021, the BMW Group sold over 2.5 million passenger vehicles and more than 194,000 motorcycles worldwide. The profit before tax in the financial year 2020 was € 5.222 billion on revenues amounting to € 98.990 billion. As of 31 December 2020, the BMW Group had a workforce of 120,726 employees.

The success of the BMW Group has always been based on long-term thinking and responsible action. The company set the course for the future at an early stage and consistently makes sustainability and efficient resource management central to its strategic direction, from the supply chain through production to the end of the use phase of all products.

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