



Mobile climate chamber for extreme machine testing - press release

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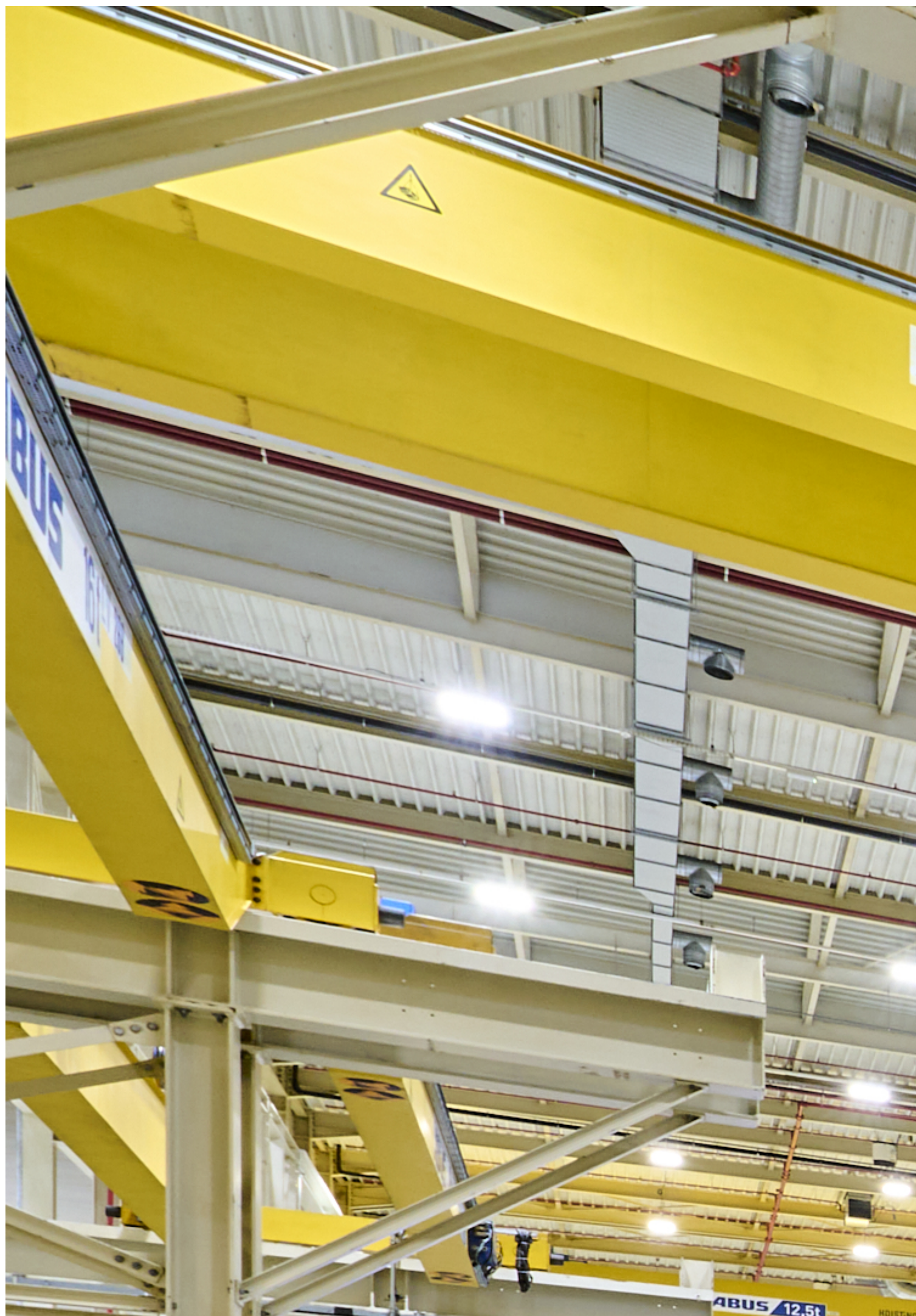
Pieter Jan Jordaens

World première: Belgium launches mobile climate chamber to test difficult-to-move machinery in the most extreme conditions

Sirris, together with the Belgian government and ZF Wind Power, is investing €1.5 million to make equipment resistant to climate change and extreme weather conditions across the globe.

Sirris, the innovation centre for the technological industry in Belgium, together with the Belgian government (FPS Economy) and the local industry, has invested 1.5 million euros in the construction of a mobile climate chamber. This is a world first. Manufacturers from all over the world no longer need to transport their large, heavy or confidential machines and products to Antwerp to test them at extreme temperatures ranging from -40°C to +60°C. The mobile climate chamber, which measures 20 metres long, 9 metres high and 7 metres wide, can be transported as a kit to wherever the manufacturer wants it. ZF Wind Power, one of Europe's leading manufacturers of wind turbine components, is the first to use the mobile climate chamber.

Sirris has had one of [Europe's largest climate chambers](#) in Antwerp since 2012, where it can test the performance of large and heavy electromechanical devices in arctic cold or extreme desert heat. It now also has the world's first large mobile climate chamber. This is a remarkable example of innovation in collaboration with the Belgian government and ZF Wind Power.



"With this mobile climate chamber, Belgium confirms its role as a frontrunner in the energy transition. Thanks to the support of the federal Energy Transition Fund (ETF), we are strengthening Belgium's testing and innovation capacity and providing companies with the means to validate their technologies under the most extreme conditions. This is crucial to increasing the reliability of wind energy, anchoring industrial innovation at home, and keeping our companies competitive on an international level."

Mathieu Bihet, Belgium's Federal Minister for Energy

Construction kit in five shipping containers

In a climate chamber, manufacturers can subject their products and systems to extreme weather conditions similar to those their products will experience anywhere in the world. This allows them to test prototypes under the most extreme climatic conditions in a controlled environment. This in turn enables companies to build sustainable products and installations that meet the most extreme specifications of their customers. This is easy for small products, but when it comes to energy transition, we are talking about very large machines, such as wind turbine drive trains, which are not easy to move from the production site to a test environment. That is why Sirris, together with engineers from ZF Wind Power and the help of Limburg-based Vos Technics, which specialises in industrial cooling techniques, spent a year and a half developing a mobile climate chamber.



“Until now, companies had to transport their products or equipment to our climate chamber in Antwerp to test them under extreme conditions. In certain cases, particularly for components weighing over 150 tonnes, this was an expensive operation and sometimes even impossible due to their size and weight. From now on, we can bring the climate chamber to these manufacturers. It fits into a large construction kit consisting of five shipping containers and can be assembled in a week. Ideal for testing large infrastructures for five to six weeks or longer. This allows manufacturers such as ZF Wind Power to test not only certain components such as a transmission, but also the entire drive train. And there is demand. Not only in Belgium, but also internationally, and for various sectors. Think of the robotics sector, for example.”

Pieter Jan Jordaens, energy transition specialist at Sirris

Validation as the foundation for innovation

Sirris developed the climate chamber in collaboration with ZF Wind Power. The company, which manufactures drive systems for wind turbines, is the first to use the mobile chamber, just as it was the first customer to use Sirris' climate chamber in Antwerp 13 years ago. A new prototype is already being tested under extreme conditions at the ZF Wind Power site in Lommel. Validation is crucial in the wind industry. Extensive testing enables ZF Wind Power to manage the risks inherent in the industry. It is essential to obtain approval from customers, insurers and certification bodies in order to launch new designs. Every component must be reliable to keep turbines running continuously worldwide. Thanks to this innovative Belgian climate chamber, which can test at temperatures as low as -40°C, ZF Wind Power is consolidating its position as market leader in the wind industry.

“As a ‘Factory of the Future’ and a pioneer in onshore and offshore wind energy, we have a vested interest in continuously strengthening our position, as well as the confidence of our customers worldwide. In our own Test and Prototype Centre, we simulate real-life conditions, including functional load and robustness tests. This allows us to evaluate the dynamic behaviour of the gearbox, similar to the situation at the top of the turbine. With a cold chamber, we test the behaviour of the components under extreme temperatures. Thanks to this new mobile climate chamber, we can now also test our largest products in a safe, efficient and high-quality manner. In this way, we guarantee that our products perform at their best not only today, but also in the long term and in all conditions, so that turbines continue to run and the energy transition is assured.”

Bert Verdyck, CTO ZF Wind Power

Largest climate chamber in Europe

In Sirris' large climate chamber, Belgian and international OEMs and component suppliers test and validate large and heavy electromechanical machines under extreme climatic conditions. From Arctic cold to desert heat, this unique test infrastructure enables the verification of machine performance and reliability in realistic, controlled environments.

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About ZF Wind Power

ZF Wind Power is a global leader in the production and servicing of gearboxes for wind turbines. The company is at the forefront of the high-performance onshore segments with its compact and modular SHIFT platform designs. ZF supplied the world's first offshore 9.5 MW wind turbine gearbox and, in close cooperation with its partner, realised the first next-generation 15 MW offshore drivetrains. The company has the world's largest installed capacity of +8 MW offshore wind turbine gearboxes. Since entering the wind industry in 1979, ZF Wind Power has delivered more than 85,000 gearboxes, accounting for more than 205 GW (mainly high-performance) wind turbines. Together with its partners, the company continuously invests in the wind market in order to contribute to a sustainable future.

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