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“progres.nrw-Innovation” funding programme: NRW government minister Andreas Pinkwart presents €4.7 million grant notice for development of an innovative hydrogen tank system

The German State of North Rhine-Westphalia (NRW) is supporting a joint development project of Rheinmetall AG of Düsseldorf and the Institute for Textile Technology of RWTH Aachen University with a grant of €4.7 million. Andreas Pinkwart, NRW’s Minister for Economics, Innovation, Digitization and Energy, presented the consortium with a formal grant notice for the H2LORICA project on 9 June 2022.

Formulated at the end of 2020, the state government’s hydrogen roadmap calls for 11,000 trucks, 3,800 buses and 1,000 refuse collection vehicles to be powered by fuel cells by 2030. In order to achieve this objective, hydrogen tank systems for mobility applications must be available, efficient, safe, and inexpensive.

This is where the development initiative comes in. The partners have developed a technology for manufacturing innovative pressure tanks for hydrogen that offers multiple advantages. The task now is to prepare this technology for production.

Slated to last three years, the project aims to develop an innovative hydrogen pressure tank system, specifically a Type IV pressure tank (700 bar). First and foremost, concrete development goals include boosting hydrogen storage capacity, attaining greater cycle stability, and achieving a longer service life.

Furthermore, work now focuses on improving fire prevention, reducing the time it takes to refuel, and better thermal management. Innovative production technology is intended not only to boost quality but to cut production times by 80 to 90 percent. Ultimately, these factors are expected to lead to relevant cost savings. Total expenditure by the two project partners comes to around €7.3 million. The development grant is going to Rheinmetall Invent GmbH, the Rheinmetall subsidiary in charge of research and development in the H₂ technology realm.

In the words of NRW minister Andreas Pinkwart: “In our hydrogen roadmap, we have formulated very ambitious goals for a climate-friendly hydrogen economy and the roll out of hydrogen-based engines, especially for heavy transport vehicles. I’m very pleased that, thanks to our progres.nrw-Innovation development programme, we can support the work of project partners Rheinmetall



► Key facts

- Progress.nrw-Innovation: €4.7 million grant for innovative hydrogen tank system
- Project H2LORICA: Consortium comprising Rheinmetall AG and RWTH Aachen University
- “We are systematically pursuing climate-friendly hydrogen-based mobility”, declares NRW minister Andreas Pinkwart
- For Rheinmetall, climate neutrality is an opportunity, challenge, and obligation

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Invent and the Institute for Textile Technology of RWTH Aachen, in their quest to develop the hydrogen tank systems we will need going forward.”

Hydrogen is a key technology for the global energy revolution; of great importance to society in general; for structural change at the regional level; and for Rheinmetall’s strategic orientation as an integrated technology enterprise.

As Armin Papperger, chairman of the executive board of Rheinmetall AG, put it: “For us, achieving climate neutrality is at once an opportunity, a challenge, and an obligation. We at Rheinmetall want to decisively shape the way hydrogen technology is used – drawing on our experience with total commitment. We are grateful to the state government for their material and financial support of our technological efforts and are eager to play our part in making NRW an important player in the world of H2 technology.”

Experts put the global market potential of the hydrogen industry at over €100 billion by the end of the decade, with €30 billion constituting pure value added.

Rheinmetall forms part of this value-added chain and is a driver of growth. Hydrogen is an important element in Group strategy, focusing on mobile and stationary applications of hydrogen technology alike. Besides safe production and distribution of hydrogen and data security for hydrogen infrastructure, Rheinmetall is concentrating on the fuel cell system itself. Already today, the Group possesses an array of technologies and products necessary for developing tomorrow’s energy sources: the spectrum ranges from generation of renewable energy to the production, storage, distribution, and utilization of hydrogen.

More on Rheinmetall's hydrogen strategy can be found here:

https://www.rheinmetall.com/en/rheinmetall_ag/systems_and_products/hydrogen/index.php

“progres.nrw – Innovation” is an initiative of the Ministry of Economics, Innovation, Digitization and Energy of the German State of North Rhine-Westphalia. A large share of NRW’s activities in support of its climate and energy policy goals are bundled in a grant programme for rational use of energy, renewable energy sources and energy saving (progres.nrw). One part of the programme, “progres.nrw – Innovation”, aims to create an application-oriented, scientific and technological basis for tackling the future energy-related challenges of companies and research institutes in North Rhine-Westphalia, and thus to support the state’s energy and climate goals while contributing to implementation of legislation promoting climate protection. In addition, the guideline is a building block for research relating to sustainable development in fields corresponding to the great social challenges set forth in the research strategy “Fortschritt NRW”. Additional information is available at <https://www.ptj.de/projektfoerderung/progres-nrw/progres-nrw-innovation>.