Press release

SIX TEAMS RECEIVE UP TO ONE MILLION EUROS FOR THE DEVELOPMENT OF THEIR "LONG-DURATION ENERGY STORAGE" CONCEPTS.

Leipzig, December 6, 2022

The Federal Agency for Disruptive Innovation (SPRIND) today announces the participants of the first phase of the SPRIND Challenge on "Long-Duration Energy Storage". From a total of 42 applications, the expert jury from science and industry selected six teams, which each will receive up to one million euros to further develop their technologies for the next 12 months.
Energy storage systems are a key element for the successful transition to renewable energies. High percentages of renewable energies in power generation in Germany and other geographies is only achievable with energy storage systems in place able to bridge periods of low power generation from wind or solar energy.
In order to achieve a breakthrough in the development of technologies that can store energy efficiently and cost-effectively over a long duration, the German Federal Agency for Disruptive Innovation (SPRIND) called for this innovation competition at the end of July. In a SPRIND Challenge, teams compete in parallel with different solution strategies to identify the most promising technological approaches in a competition over several years.
The following six teams are participating in this SPRIND Challenge:

- IsoCHEST, the team led by Wolf-Dieter Steinmann of DLR in Stuttgart, combines the principles of heat pump, latent heat storage and a new isothermal compression process to store energy with higher efficiency and lower cost compared to current methods.

- Membranes-less Redox-Flow-Batteries develop, as the name suggests, redox-flow batteries that do not require a membrane. The team led by Prof. Robert Dryfe at the University of Manchester uses a two-phase system for this purpose. In the first phase, a gas can be produced by electrolysis of the solution, which is then stored in the organic phase and does not mix with the aqueous electrolyte again. This eliminates the need for a membrane, and at the same time the system requires only one tank and one pump.

- Ore Energy is a spin-off company from TU Delft working on long-term energy storage with one goal in mind: Making intermittent renewable energy available at all times. The scientists at Ore Energy have developed a long-term, efficient, and cost-effective energy storage solution, based on abundant elements: iron, water, and air.

- Reverion is a spin-off from the Technical University of Munich that is advancing long-duration energy storage using a new type of gas battery. The gas battery is characterized by the use of high-temperature solid oxide fuel cells and an optimized system architecture with the use of waste heat, which enables high efficiency.

- Unbound Potential is being driven by the team around David Taylor as a spin-off from Zurich. They are developing redox flow batteries, dispensing with a membrane

and at the same time multiplying ion exchange through 3D optimization of the interface between the two electrolytes. This reduces costs and simultaneously increases efficiency. The teams' approach is not limited to one cell chemistry, but can be used as a platform technology for a wide variety of electrolytes.

- VoltStorage is a start-up from Munich, and develops and produces energy storage systems based on the redox flow technology. The team is currently researching a technology that relies on an iron and water based storage medium and thus on two of the most abundant raw materials in the world. The materials needed to build the battery are not only available worldwide, but are also cost-effective and environmentally friendly.

Mario Brandenburg, Parliamentary State Secretary at the German Federal Ministry of Education and Research and member of the Supervisory Board of SPRIND, the German agency for Disruptive innovations, said: "Energy storage is essential for the energy transition. To achieve this, we need new and better technologies. With the SPRIND Challenge, we have created an extremely effective innovation competition. Through this, we can help promising technologies achieve a breakthrough for which there is not yet any private venture capital. Six such projects have now been selected for the first funding phase. Initially, the six teams will each receive one million euros for one year; further funding in the second phase of the SPRIND Challenge is linked to their interim results. In this way, we are enabling major progress in a short time."

One year from now, the results of the first stage of this SPRIND Challenge will once more be evaluated by the jury. Then up to five teams will receive further funding until June 2025, with up to €3 million per team earmarked for this purpose.

For the allocation of funds in the SPRIND Challenges, the German Federal Agency for Disruptive Innovations utilizes a new innovation funding mechanism called pre-commercial procurement. Compared to previous procedures for government innovation funding, pre-commercial procurement is much faster and the formal requirements are far less extensive, so that even smaller teams and start-ups can participate successfully and without special funding application know-how.

To ensure that teams can drive their innovation independently over the long term, all intellectual property generated during the Challenge remains with the teams.

For more information about this SPRIND Challenge and the participating teams, please visit https://www.sprind.org/en/challenges/energystorage.

About SPRIND Challenges

SPRIND Challenges are innovation competitions that aim to generate solutions to the grand societal and technological challenges of our time. They create the vision of a better future and gather the scientists, innovators and entrepreneurs who can make that vision a reality. That's why Challenge Teams are funded quickly and without red tape, and immediately launch into a multi-stage competition. At the end of each stage, the teams' work is evaluated and only the best remain in the Challenge and receive further financial support to develop their idea.

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About SPRIND

The Federal Agency for Disruptive Innovation (SPRIND) was founded on Dec. 16, 2019, with its registered office in Leipzig. The sole shareholder is the Federal Republic of Germany, represented by the Federal Ministry of Education and Research (BMBF) and the Federal Ministry of Economics and Climate Action (BMWK). SPRIND fills a gap in the German innovation landscape: it finds new, groundbreaking technologies for the major challenges of our time, while ensuring that the value created by the resulting companies and industries remains in Germany and Europe. SPRIND is financed by funds from the federal budget. It is managed by Rafael Laguna de la Vera and Berit Dannenberg.

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