

PRESS RELEASE

SPRIND CHALLENGE "CARBON-TO-VALUE" STARTS WITH FIVE TEAMS

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The Federal Agency for Disruptive Innovations SPRIND has selected the participants of the second challenge "carbon-to-value". The goal of the Challenge is to achieve a breakthrough for the use of CO₂ from the air in new products to make the fight against climate change economically viable. SPRIND is funding each of the five selected teams with up to €600,000 in the first year of this multi-year Challenge.

"To limit a serious increase of average global temperature, it is not enough to reduce future CO₂ emissions. In addition, we also need to remove a large amount of CO₂ from the atmosphere," explains Jano Costard, Challenge Officer at SPRIND. "That's why we launched this innovation competition to help develop scalable processes to remove CO₂ from the atmosphere cost-effectively and economically - and then store it long-term in valuable products."

In a two-stage process, an international jury selected the following five teams from a total of 66 submissions:

Team **ROBINIA**, made up of representatives from Fraunhofer IWS Dresden, Fraunhofer WKI Braunschweig, STRAB Ingenieurholzbau Hermsdorf GmbH and LEAG Cottbus, is researching a substitute for concrete and steel structures. They are developing a composite material from the fast-growing and very robust tree robinia. This composite material is to be used in the construction of bridges and wind turbines and, even untreated, will withstand 80 to 100 years of weathering.

Concrete is the starting point for two teams that want to revolutionize the construction industry, which alone is responsible for eight percent of global greenhouse gas emissions. To this end, the **Carbon-to-Concrete** project of OCS GmbH is developing a cement substitute that focuses on the mineral olivine. Through proper processing, the company aims to make concrete CO₂-negative, removing up to 300 kilograms of CO₂ per ton of concrete from the atmosphere.

Carbo Culture is a Finnish company that sequesters carbon from waste biomass. Their patented technology (Carbolysis™) produces high-quality biochar that can be used in concrete to reduce the environmental footprint and as a heat conductor. As a longer-term end use, it could increase the value of sequestered carbon and provide additional revenue for carbon removal. Thus, the price of carbon removal can be reduced while it scales.

Using a novel plasma catalysis technology, the company **enaDyne** is able to convert CO₂ into methanol and other hydrocarbon compounds, which are highly needed by the chemical industry to produce durable plastics with little energy input. Until now, these compounds have been produced by processing fossil raw materials.

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The **C-Cause** team is pursuing a similar goal. The team is led by the Alfred Wegener Institute and joined by companies Carbonwave and Seafields as well as other research institutions. Huge sargassum farms are to be created in the oceans. Sargassum is an algae that grows very quickly and constantly extracts CO₂ from the seawater. Through the natural ocean-atmosphere exchange, this deficit is compensated and the atmospheric CO₂ concentration is lowered. In further processing, ethanol is extracted from the sargassum for plastic production. The advantage is that the CO₂ sequestration potential of the algae is many times higher than that of trees, for example, and also that there are no conflicts in land use, such as for food security. The C-Cause team is in regular contact with researchers from BASF on the possible integration of products derived from algal farming into future chemical industry value chains.

The teams now have twelve months to press ahead with the realization of their projects. SPRIND is providing support of up to 600,000 euros per team and intensive coaching. Following this first stage of the Challenge, the jury will evaluate the interim results and decide which teams will also be funded in the second year of the Challenge.

For more information on the SPRIND Challenge "Carbon-To-Value", please visit <https://www.sprind.org/en/challenges/carbon-to-value>.

About SPRIND

The Federal Agency for Disruptive Innovations SPRIND was founded on December 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 Protection (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. SPRIND is managed by Rafael Laguna de la Vera and Berit Dannenberg.

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