

The Swedish Energy Agency Is Investing Heavily in a Carbon-Dioxide-Free Steel Industry

SSAB's, LKAB's and Vattenfall's initiative for a carbon-dioxide-free steel industry has gained additional support from The Swedish Energy Agency. Today the agency passed a resolution to finance a 4-year long research project for SEK 102 million. At the same time, the three companies behind the initiative, SSAB, LKAB, and Vattenfall, have decided to form a corporate joint venture to spur on this initiative.

"The Swedish Energy Agency's decision to provide more financing for the initiative for a carbon-dioxide-free steel industry is very exciting news for us. It shows how important this work is not only for the steel industry, but also for Fossil Free Sweden 2045," says **Martin Lindqvist**, CEO and Group Manager of SSAB.

"It's a real inspiration that The Swedish Energy Agency is helping to support Swedish companies in their efforts to introduce new innovative, environmentally-friendly manufacturing processes," says **Jan Moström**, CEO and Group Manager of LKAB.

"The announcement is extremely positive news. It's a big help in our challenge to find a long-term solution to the carbon dioxide problem, where Vattenfall will be contributing in the areas of electrification and sustainable hydrogen production. We have a unique opportunity in front of us to break new ground and make a valuable contribution toward a fossil fuel-free Sweden," adds **Magnus Hall**, CEO and Group Manager of Vattenfall.

The Swedish Energy Agency previously supported the initiative with SEK 7.7 million in funding for the feasibility study. The Swedish Energy Agency's decision to provide additional funding for the initiative opens the door for the launch of a number of new research projects by organizations such as KTH, Luleå University of Technology, SWEREA MEFOS, Lund University, Stockholm Environmental Institute, and RISE, who will work toward the goal of a carbon-dioxide-free steel industry.

The research project will take a look at processes such as fossil fuel-free pellet manufacturing, hydrogen-based direct reduction, and the use of sponge iron in electric arc furnaces, along with providing an electrical power supply source for hydrogen manufacturing and storage. The research project has been allocated 102 million Swedish crowns, with The Swedish Energy Agency providing SEK 56 million of this amount and the three companies contributing the remaining SEK 46 million.

"One of the biggest challenges we face with global warming is reducing industrial use of fossil fuels. Investigating how to replace coal and coke with hydrogen in the Swedish iron and steel industries is both an obligation and a unique global opportunity to improve our competitiveness in the future," states The Swedish Energy Agency's Director General, **Erik Brandsma**.

Meanwhile, SSAB, LKAB, and Vattenfall have decided to form a corporate joint venture to propel this initiative forward. The new corporation will be formed in Spring 2017.

SSAB, LKAB, and Vattenfall launched their initiative to solve the CO₂ issue in the Swedish steel industry back in the spring of last year. The project's goal is to come up with a process that emits water instead of carbon dioxide by using hydrogen instead of the current procedure that's based on blast furnaces burning coal and coke.

The initiative is divided into three phases: a pre-feasibility study that will run through the end of 2017, followed by research and testing in a pilot plant through 2024, and the final step, which involves carrying out testing in a full-scale demo plant through 2035.



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Sweden is ideally suited for this type of initiative with its specialized, innovative steel industry, access to fossil fuel-free electrical power, and Europe's highest-quality iron ore.

However, in order to complete the project, a substantial nationwide cooperative effort will be needed from the Swedish government, research institutions, and universities over a period of 20-25 years.

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