

Press release

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Vattenfall orders the world's first fossil-free steel dam gate from SSAB

Vattenfall and SSAB have signed a new agreement for the delivery of 120 tonnes of fossil-free steel for what will be the world's first fossil-free dam gate. The dam gate will be the largest steel component ever produced with near-zero fossil carbon dioxide emissions in the iron production. It will be installed in Vattenfall's hydropower station in Stornorrfor in 2028.

The dam hatch will be 21 metres wide and 11 metres high, produced from 120 tonnes of fossil-free steel. The fossil-free steel is a concept delivery from SSAB and is produced with sponge iron from Hybrit's pilot plant in Luleå, jointly owned by Vattenfall, SSAB and LKAB. The Hybrit technology virtually eliminates carbon dioxide emissions in iron production. In the current project, the climate footprint is estimated to be reduced by about 200 tonnes of carbon dioxide.

The order for the dam gate, which will be replaced as part of a planned maintenance, is in line with Vattenfall's strategy for the fossil-free transition and is a logical next step in the deepened collaboration between Vattenfall and SSAB from 2023.

"Vattenfall and SSAB are now taking a big step forward in the development of fossil-free value chains and components. Vattenfall is committed to fossil-freedom and our goal is to have net-zero emissions throughout our value chain by 2040. This is also an important part of extending the lifetime of the important fossil-free hydropower for the next hundred years," says Lovisa Fricot Norén, CEO of Vattenfall's Nordic hydropower.

"This is an important step in our joint commitment to reduce carbon dioxide emissions. With forward-looking partners like Vattenfall, we continue to lead the transformation of the steel industry. We already have a successful collaboration on HYBRIT and are now showing what we can achieve to reduce the climate footprint throughout the value chain," says Thomas Hörnfeldt, Vice President Sustainability at SSAB.

Facts about Stornorrfor hydropower station and HYBRIT:

- The Stornorrfor hydropower station in the Ume River is Sweden's largest, in terms of annual production, with an installed capacity of 603 MW.
- The hydroelectric power plant has four turbines and was commissioned in 1958.
- The maintenance work on new dam gates is an important part of extending the period of operation for the facility.
- Vattenfall hydropower has a total of about 8,300 MW of installed capacity in Sweden, which is more than half of all hydropower in Sweden.
- The steel industry in the world currently accounts for 7–9 percent of total global carbon dioxide emissions



- Through the transition to fossil-free steel production, SSAB is helping to reduce Sweden's carbon dioxide emissions by about ten percent.
- The HYBRIT initiative was started in 2016 by the owners SSAB, LKAB and Vattenfall with the goal of developing the world's first fossil-free ore-based iron and steel production with fossil-free electricity and hydrogen, the successful [results were reported in 2024](#).
- The fossil-free dam gate reduces emissions by about 200 tonnes of carbon dioxide, compared to conventional steel.

[Read more about Hybrit](#)

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