

Fossil-free hydrogen initiative by Ovako

- Conversion to fossil-free hydrogen in pursuit of carbon neutrality -

Currently under construction in Sweden is a fossil-free hydrogen production plant within the Hofors steel mill of Ovako, a member of the Sanyo Special Steel Group.

This plant will generate 3,500m³ of fossil-free hydrogen per hour through electrolysis of water using fossil-free electricity.

By using the hydrogen produced at this plant as fuel, Ovako will be able to reduce the Hofors mill's CO₂ emissions from the process of heating steel before rolling by approximately 50 percent from an already low level. Going forward, there are also good opportunities for decarbonization in various areas, such as the transport sector where there is potential to supply hydrogen for fuel cell-powered trucks.

In line with the increasing importance being placed, worldwide, on actions to help mitigate climate change, the Sanyo Special Steel Group, including Ovako, will promote efforts toward reduction of CO₂ emissions and attainment of carbon neutrality throughout its global business activities.



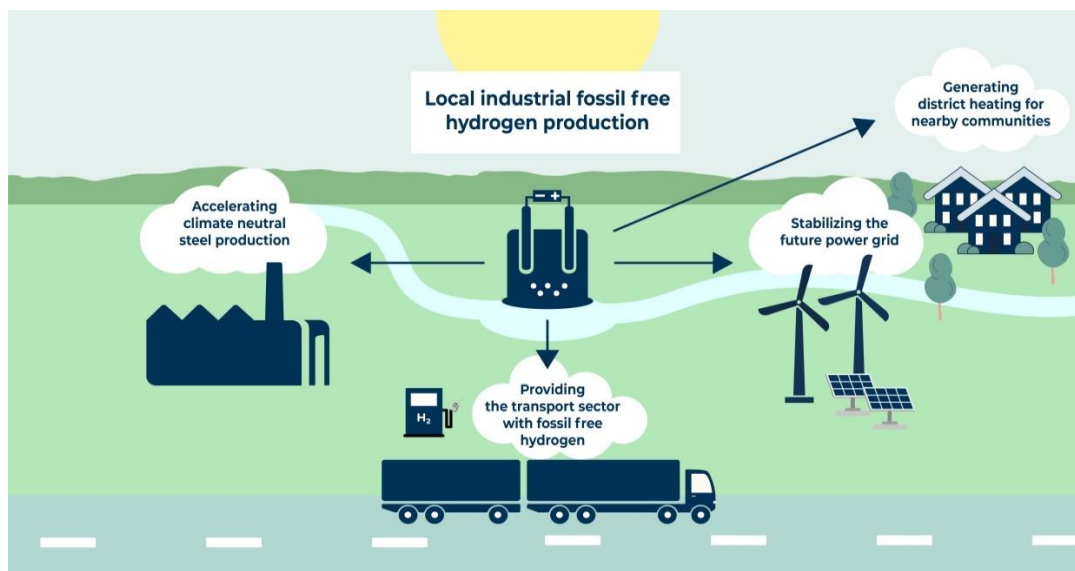
< Ovako's Hofors Mill >

Ovako has promoted world-leading efforts to minimize CO₂ emissions and has reduced its own steel production-generated emissions by 54% since 2015. In April 2020, at its Hofors mill, Ovako became the first steelmaker in the world to succeed in heating steel before rolling using hydrogen as fuel in a pit furnace. It might be possible to eliminate CO₂ emissions in the pre-rolling heating process through practical realization of this technology; however, a large-scale and cost-effective hydrogen production process has been required for that purpose.

Accordingly, a plan for construction of a large-scale, cost-effective fossil-free hydrogen production plant has been realized with the support of the Swedish Energy Agency and collaboration with key players in Sweden and Norway, the Volvo Group, Hitachi ABB Power Grids Sweden, H2 Green Steel, and Nel Hydrogen. The fossil-free hydrogen production plant is scheduled for completion by the end of 2022, when it will become the largest non-fossil hydrogen production facility in Sweden. Regarding this initiative, the Swedish Energy Agency commented: "We see this investment as a strategically important effort and expect it to lead to deployment of similar solutions throughout steel-related industries".

By converting from LPG currently used as heating furnace fuel to fossil-free hydrogen, Ovako will be able to significantly reduce CO₂ emissions in steel production.

In addition, this technical solution will be the first step in development of hydrogen infrastructure that can be utilized in the transport sector; for example, development of fossil-free freight transportation using fuel cell-powered trucks. The solution is also expected to contribute to improving stability of the power grid. Moreover, the residual heat can be utilized in adjacent communities heating networks.



< Effects of fossil-free hydrogen plant >