

SSAB is undertaking a strategic roadmap to revolutionize iron and steel making and to be the first steel company in the world to deliver fossil-free steel to the market by 2026 and largely eliminate carbon dioxide emissions from our own operations in around 2030. SSAB has launched HYBRIT initiative where fossil-free sponge iron is produced in a direct reduction shaft furnace. The plan includes transformation of SSAB Raahe and Luleå integrated steel plants into mini-mill type production units with electric arc furnace-based production with HYBRIT sponge iron and scrap as raw material and closing of old production facilities based on fossil carbon.

Cutting of CO₂ emissions of 4 million tons at Raahe will help Finland to reach the national targets with carbon neutrality. SSAB has launched a new portfolio of fossil-free products: SSAB Zero and SSAB Fossil free. Both steels are produced with no fossil energy with close to zero of CO₂ emissions.

FFS – Towards Fossil-free Steel co-innovation project started in 2021, aiming to support decision making in selecting and developing technologies for fossil-free steel production in Raahe, as well as finding solutions for electrification of processes and supply of fossil-free fuels.

In FFS phase 2, these targets are refined according to previous results and the needs of new mini-mill technology. SSAB's main targets of FFS2 are:

- to enable production of fossil-free product portfolio with Compact Strip Production (CSP) introducing high-speed thin slab casting directly connected to hot strip rolling process
- to develop flexible Electric Arc Furnace (EAF) process with high energy efficiency and highly automated process control utilizing biocarbon as slag foaming agent
- to develop valorisation for main secondary material streams including EAF slag, EAF dust and ladle slag
- to study the optimization of value chain of fossil-free iron production at Raahe to support the implementation of DRI and hydrogen production study performed by SSAB and Fortum.

SSAB Transformation Office is responsible for designing and implementing the new steel mill at Raahe. FFS has an important role in supporting this organization and creating competences, knowledge and procedures for the new Raahe steelmaking process.