

PRESS RELEASE

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LKAB selects ENERGI[®] for its demonstration plant in northern Sweden

Hydrogen-based steelmaking enables a fossil-free value chain from mine to finished steel product.

Castellanza, February 12, 2024 – The ENERGI[®] technology, jointly developed by **Tenova** and **Danieli**, has been chosen by **LKAB**, an international mining and minerals group that offers sustainable iron ore, minerals, and special products, for the basic engineering of its **100% hydrogen-based direct reduced iron (DRI) plant** in Gällivare, **Sweden**. This represents a further step in the application of the technology by the group, as ENERGI[®] has already been the key equipment to the **full-hydrogen pilot plant** in Luleå, Sweden, built by **HYBRIT** Development AB, a joint venture between LKAB, SSAB, and Vattenfall, and commissioned in 2020.

Results from the HYBRIT pilot plant revealed that the DRI obtained using pure hydrogen as a reducing agent instead of fossil-based reducing gas such as natural gas delivers **superior properties and qualities**. With a capacity of 1.35 Mtpy of fossil-free DRI, the Gällivare demonstration plant will combine the HYBRIT technology with ENERGI[®] technology merging know-how and experience in DRI plants.

Amongst the characteristics of the new installation, it is notable that an **electric process heater** – a world first in an industrial DRI plant – will heat the process gas using **green electric power**. This will reduce carbon emissions down to zero, dramatically increasing the overall energy efficiency of the process. The new DRI plant will use fossil-free electric power from different sources to produce fossil-free sponge iron that will be used by SSAB to make **fossil-free steel**.

Stefano Maggiolino, Tenova HYL President & CEO, said: *“We’re excited to continue our sustainability journey with LKAB in the making of the very first industrial DRI plant that, thanks to our innovative ENERGI[®] technology, will produce fossil-free steel using an electric process gas heater. With our tireless push for innovation, hydrogen-based iron ore reduction at zero emissions has already become an industrial reality.”*

The current contract is related to basic engineering services, while future equipment supply and construction are pending waiting for prerequisites like environmental permits and Final Investment Decision (FID).

About Tenova

Tenova, a Techint Group company, is a worldwide partner for sustainable, innovative and reliable solutions in the metals and – also through the well-known TAKRAF and DELKOR brands – in the mining industries. Tenova leverages a workforce of over 2,300 forward-thinking professionals located in 19 countries across 5 continents, who design technologies and develop services that help companies reduce costs, save energy, limit environmental impact, and improve working conditions.

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