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Tata Steel strengthens position in low-carbon future technology

Tata Steel took a step which places it at the forefront of lower-carbon steel innovation by acquiring the full intellectual property rights in a revolutionary technology.

The company has been testing the groundbreaking technology called Hlsarna at its IJmuiden steelworks in the Netherlands. Hlsarna has the potential to reduce energy use and carbon emissions by at least 20%*, as well as reducing steelmaking costs through lower-priced raw materials, up to half of which could be recycled scrap steel.

Hlsarna is a completely new technology in the steelmaking process which combines Tata Steel's cyclone converter furnace with Rio Tinto's smelter. Now, Tata Steel has acquired the Rio Tinto's smelter technology and intellectual property rights required to operate the Hlsarna process.

Hlsarna consists of a reactor into which iron ore is inserted at the top. The ore is liquefied in a high-temperature cyclone and drips to the bottom of the reactor. When powdered coal is injected into the reactor, it combines with the molten ore to produce pure liquid iron and CO₂.

*The technology removes a number of pre-processing steps, resulting in significant efficiency gains and 20% reductions in energy use and CO₂ emissions. The Hlsarna installation produces almost pure CO₂, making the gas ideally suited for capture and either storage or use, which could lead to total CO₂ savings of 80% from the steel production process. It could also lead to substantial reductions in emissions of fine particles and the reduction of sulphur dioxide and nitrogen oxide.

Apart from being essential to modern society, steel is sustainable because it is permanent. Steel products can last a lifetime, after which they can be reused, remanufactured or recycled to create new products. This means steel is used, never consumed, and explains why steel is the most recycled material in the world. Steel production is a long-term investment which offers enormous CO₂ efficiencies over its full life cycle.



T V Narendran, Tata Steel Managing Director, said: "Tata Steel has a legacy of pioneering initiatives in several areas of management and process technology. Acquisition of full intellectual property rights for Hlsarna, is a significant step towards establishing our pioneering credentials in the steel manufacturing space and ensuring long term sustainability of the business, Reduction in use of energy and carbon emissions is a challenge for the steel industry and I laud the efforts of our team in Netherland for their tireless effort in establishing the Hlsarna technology. Hlsarna could play a role in helping society to achieve a circular economy with zero waste. I want to thank Rio Tinto for the support it has given to this technology development over a number of years"

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Notes to Editors

About Tata Steel

Tata Steel Group is among the top global steel companies with an annual crude steel capacity of 27.5 million tonnes per annum (MTPA) as on March 31, 2017. It is the world's second-most geographically-diversified steel producer, with operations in 26 countries and a commercial presence in over 50 countries. The Group recorded a consolidated turnover of US \$18.12 billion (INR 117,420 crore) in FY17. Tata Steel Group is spread across five continents with an employee base of nearly 74,000. Having bagged the Deming Application Prize and Deming Grand Prize for continuous improvement in 2008 and 2012 respectively, Tata Steel has now been recognised as the global 'Industry Leader' in 'Steel category' by Dow Jones Sustainability Index (2015). Besides being a member of the World Steel Climate Action Programme, Tata Steel has also been felicitated with several awards including the Prime Minister's Trophy for the best performing integrated steel plant for 2013-14 (received in 2017), Best Risk Management by CNBC TV18 (2016), 'Best-in-class Manufacturing' award from TIME India (2016) and the 'Most Ethical Company' award from the Ethisphere Institute (2016), IIM Sustainability Award (2015), among several others.

About Tata Steel's European operations

Tata Steel is one of Europe's leading steel producers, with steelmaking in the UK and Netherlands, and manufacturing plants across Europe. The company supplies high-quality steel products to the most demanding markets, including construction, automotive, packaging, lifting & excavating, energy and aerospace. Tata Steel works with customers to develop new steel products that give them a competitive edge.

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