



## FOR IMMEDIATE RELEASE

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### **European steelmakers and Rio Tinto join forces in combating climate change**

ULCOS, a consortium of the major European steelmakers, and Rio Tinto, one of the world's leading mining and exploration companies, announce that they have agreed to collaborate on the Isarna project, which aims to develop a new environmentally-friendly ironmaking process.

ULCOS (Ultra Low CO<sub>2</sub> Steelmaking) is the world's most ambitious R&D initiative to reduce carbon dioxide emissions from steel production by developing new breakthrough technologies ([www.ulcos.org](http://www.ulcos.org)).

Isarna (an old Celtic word for iron) is a new technology under development by ULCOS. It is a highly energy efficient ironmaking process based on direct smelting of iron ore fines using a smelt cyclone in combination with a coal-based smelter. All process steps are directly hot-coupled, avoiding energy losses from intermediate treatment of materials and process gases.

The smelt cyclone technology was conceived by Corus (an ULCOS participant) and has been under development for many years. In the 1990s a series of large-scale pilot plant trials successfully demonstrated its operation.

Rio Tinto's participation is through the licensing of its HIs melt® direct smelting technology ([www.hismelt.com](http://www.hismelt.com)), which it has been developing since the 1980s. The first commercial HIs melt® plant in Kwinana, Western Australia, is currently undergoing ramp-up. In its present commercial form, the HIs melt smelter uses coal and oxygen-enriched air in combination with a fluidised bed iron ore preheater to produce liquid iron.

The new project aims to develop a new process by combining the Isarna smelt cyclone with the HIs melt smelter, and operating the combination on pure oxygen. The project will be renamed "HIsarna" to reflect this merging of concepts.



The resulting process is compact and highly efficient. It will result in lower CO<sub>2</sub> emissions compared to other coal-based processes, while the use of pure oxygen facilitates CO<sub>2</sub> capture and storage. In addition it will enjoy several other attractive features, including compactness, low capital cost and an ability to use iron ore fines directly, as well as less expensive non-metallurgical coals.

A pilot plant rated at 65,000 tonnes per year will be built at Saarstahl (an ULCOS participant) in Völklingen, Germany. This unit is due to start operations in early 2010, and a three-year pilot testing phase is anticipated. Scale-up to commercial size and subsequent proliferation through the global steel industry will follow in due course.

Rio Tinto's Iron Ore chief executive Sam Walsh welcomed the development. "Rio Tinto understands the need for technology development to address climate change. This project represents a logical extension of HIs melt technology, which is aimed at achieving high levels of CO<sub>2</sub> reduction. This is yet another application of that technology, and highlights its broader commercial potential."

Jean-Pierre Birat, the coordinator of the ULCOS programme, commented: "We at ULCOS, which is itself by nature a collaborative programme, consider that cooperation is key in the industry's efforts to develop breakthrough steelmaking technologies to help tackle climate change. We are looking forward to the results of this very promising HIsarna project."

#### About ULCOS

ULCOS stands for Ultra-Low Carbon dioxide (CO<sub>2</sub>) Steelmaking. It is a consortium of 48 European companies and organisations from 15 European countries that have launched a cooperative research & development initiative to enable drastic reduction in Carbon dioxide (CO<sub>2</sub>) emissions from steel production. The consortium consists of all major EU steel companies, of energy and engineering partners, research institutes and universities and is supported by the European commission. The aim of the ULCOS programme is to reduce the carbon dioxide (CO<sub>2</sub>) emissions of today's best routes by at least 50 percent.



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