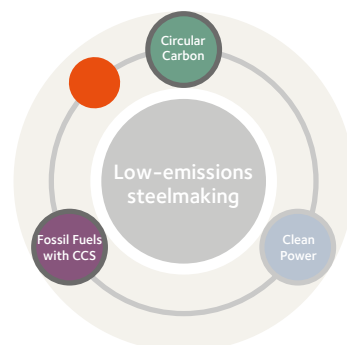


ArcelorMittal strategy towards low-emissions steelmaking

The carbon-intensive gas produced in ironmaking is an ideal feedstock for biotechnology. With our partner Lanzatech we are working on a family of novel recycled chemicals: Carbalyst®



Carbalyst®: capturing carbon gas and recycling into chemicals

The waste gases that result from iron and steelmaking are composed of the same molecular building blocks – carbon and hydrogen – used to produce the vast range of chemical products our society needs. Today most waste gas is incinerated, resulting in CO₂ emissions.

With our partner Lanzatech, supported by the EU Horizon2020 Steelanol project, we are building the first large-scale plant to capture the waste gas and biologically convert it into bio-ethanol, the first commercial product of our Carbalyst® family of recycled carbon chemicals. Thanks to a lifecycle analysis study, we can predict a CO₂ reduction of up to 87% compared with fossil transport fuels, so this bio-ethanol can be used to support the decarbonisation of the transport sector as an intermediate solution during the transition to full electrification. In the future, we will expand the family of Carbalyst® products to other biochemicals and biomaterials.

Construction started recently on a €120 million demonstration facility in Ghent, Belgium. Once completed in 2020, the facility will capture around 15% of the available waste gases at the plant and convert them into 80 million litres of ethanol per year. This result will be a CO₂ reduction equivalent to 100,000 electric vehicles or 600 transatlantic flights per year.



Figure 8: Carbalyst® technology

