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über

Steel Production and Climate Change – paths to leave Carbon behind

Abstract:

In the context of the climate crisis, the steel industry has come under increased scrutiny due to its reliance on carbon-intensive fossil fuels, primarily coal. Steel production accounts for around 9% of total global carbon CO₂ emissions. In recent years, governments across the world have been looking for ways to meet the goals of the 2015 Paris Climate Agreement, and as such, the political pressure on the sector to decarbonize is also mounting.

At the same time, steel with its high strength-to-weight ratio and relatively low production costs is an important constructing material also for a low-carb industry of the future. The required drastic energy transformation can only be mastered in a phased approach: Optimization of existing processes, circular economy, new technologies to produce steel including the establishment of a hydrogen economy as well as carbon capture utilization and storage (CCUS) are pillars of this approach.

The current situation of the steel industry, the challenges and the framework conditions are presented together with technological solutions and future approaches.