

## SolarInnovate Energy Solutions

# Steel has energy storage projects



## Overview

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Hydrogen-based steel Doctoral studies in Sweden have developed pilot projects combining carbon capture and storage of steel with renewable energy, such as Sirocco Steel. What role does the steel industry play in sustainability?

Additionally, the steel industry is a critical supply chain component in the global economic transition toward sustainability. Steel-intensive infrastructures such as wind turbines, solar power plants, and hydropower dams are pivotal to supporting the production of renewable energy.

How do energy storage centers work?

In regions where steel plants are concentrated, the energy storage center can be positioned next to the plants, where it will consolidate the power produced by all involved photovoltaic power plants and supply it on demand to nearby steel plants undergoing conversion.

How does the iron and steel industry use electricity?

The iron and steel industry are a major consumer of electricity, with current steel production relying heavily on self-generated power plants and grid electricity, which are primarily based on fossil fuels. This reliance not only contributes to high carbon emissions but also results in substantial energy costs .

Can renewable power systems help steel production achieve low-carbon goals?

While previous studies have explored various aspects of low-carbon production in the steel industry, including the potential of different technologies such as hydrogen injection, biomass co-firing, and CCUS, there has been little research into the integration of renewable power systems with steel production to achieve low carbon goals.

How much CO<sub>2</sub> does the steel industry emit a year?

Among all industries, the steel sector ranked first in CO<sub>2</sub> emissions and second in energy consumption. Specifically, the steel industry directly emitted 2.6 billion tons of CO<sub>2</sub> annually, which accounts for 7 % of global energy system emissions.

Why is steel important?

Steel is one of the most essential materials for engineering and construction worldwide, and the steel industry serves as a foundational sector for all industrialized nations, providing robust material support for national economic development, infrastructure construction, and defense.

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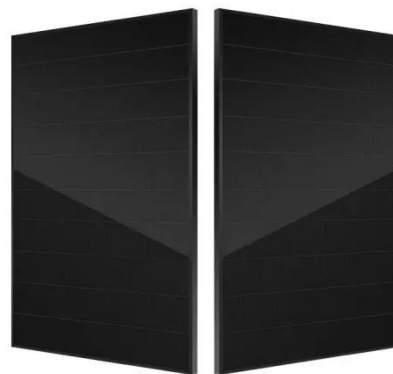


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