



Accelerating South Africa's Steel Decarbonization

Strategic Context

South Africa is the second-largest steel producer in Africa. The steel industry is a cornerstone of the national economy, driving key sectors such as automotive, construction, and mining, while providing significant employment opportunities. However, the industry faces multiple challenges that hinder its transformation:

- Overdependence on coal-based production processes
- Infrastructure bottlenecks inhibiting operational efficiency
- High carbon intensity, more than twice the EU average
- Ranking as the second-highest greenhouse gas (GHG) emitter nationally after the energy sector

In alignment with the global shift toward carbon-neutral industrial development - driven by international climate commitments, policy instruments such as the EU's Carbon Border Adjustment Mechanism (CBAM), and the rapid declines in renewable energy technology costs - South Africa's 2021 Updated Nationally Determined Contribution (NDC) commits to a 31% reduction in GHG emissions by 2050. The Just Energy Transition Investment Plan (JET-IP) and 2025 Renewable Energy Masterplan underscore the country's focus on building a resilient, low-carbon, and inclusive industrial economy.

About the Project

Guided by South Africa's Department of Trade, Industry and Competition, the Department of Forestry, Fisheries and the Environment and the Department of Electricity and Energy, a transformative project concept was developed by UNIDO, Guidehouse Germany GmbH and the Industrial Development Corporation for submission to the Mitigation Action Facility for funding. The project is currently in the Detailed Project Preparation (DPP) phase.

The Mitigation Action Facility is a joint initiative of the German Federal Ministry for the Environment, Climate Action, Nature Conservation and Nuclear Safety (BMUKN), the UK Department for Energy Security and Net Zero (DESNZ), the Danish Ministry of Climate, Energy and Utilities (KEFM), the Danish Ministry of Foreign Affairs (MFA), the European Union and the Children's Investment Fund Foundation (CIFF).

The project aims to catalyse industrial decarbonization in South Africa by driving the shift to near-zero emission steel production through the uptake of innovative technologies, the establishment of a dedicated financial mechanism, and the development of an enabling policy framework.

The project will support South Africa's steel sector to meet international climate obligations, enhance compliance with global climate policies (e.g., CBAM), and catalyse export growth through greener product offerings for end-use sectors such as automotive manufacturing.

Project Scope

The project will target all steel producers in South Africa, and will include the following:

- Establishment of a **first-of-its-kind dedicated financial mechanism** to catalyse investment into bankable decarbonisation projects in the steel industry
- Demonstration of **innovative technologies** through pilot implementation, including deployment of a pilot H₂-DRI plant
- Integration of **renewable energy infrastructure** in steelmaking facilities, with lessons used to raise awareness across the sector



- Support in **strengthening and developing policy and regulatory frameworks** to foster decarbonisation of the steel sector
- Development of an **investment pipeline** of carbon-neutral steel projects to mobilise financing
- **Matchmaking support** between permitted Independent Power Producers (IPPs) and steel sector demand for renewable energy and hydrogen, including PPA negotiation and transaction advice for smaller companies
- Preparation of **awareness materials** to educate stakeholders on circularity, low-carbon steel manufacturing, near-zero-emission technologies such as H₂-DRI, and related health, safety, and international policy implications (e.g. EU CBAM)
- Decarbonisation of the steel industry and encouraging **domestic demand** for green steel
- Promotion of **gender equality** and women's participation in the sector

National and Sectoral Benefits of the Project

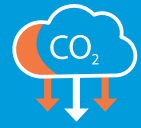
- Contribute to GHG mitigation and policy alignment with South Africa's NDC and net-zero goals
- Enhance trade resilience through improved compliance with emerging global carbon regulations
- Create new market opportunities for climate-aligned, low-carbon steel products
- Enhance industrial competitiveness driven by energy diversification and innovation
- Increase economic development through green jobs creation and supply-chain growth
- Increase global visibility as a climate leadership model for the Global South

General information

Donor	Mitigation Action Facility The project is currently in preparation (Detailed Preparation Phase, DPP)
Budget	EUR 25 million
Expected project start and duration	2026 / 5.5 years
Implementation Organisations	United Nations Industrial Development Organization, Guidehouse Germany GmbH, Industrial Development Corporation South Africa
Key National Counterparts	<p>Government Ministries</p> <ul style="list-style-type: none"> • Department of Trade, Industry and Competition • Department of Forestry, Fisheries and the Environment • Department of Electricity and Energy <p>Project Partners</p> <ul style="list-style-type: none"> • Development Bank of Southern Africa • Steel and Engineering Industries Federation of Southern Africa • South African Iron and Steel Institute • National Business Initiative • Trade and Industrial Policy Strategies • National Cleaner Production Centre - South Africa

Mitigation Potential and Cost-Effectiveness

Direct GHG reduction:



539,419 tCO₂e

Over project duration
(5.5 years)



1,702,739 tCO₂e

Over the project
duration + 10 years
post-completion



3 million tCO₂e

Over technology
lifetime

Working Towards the SDGs



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