



South Africa's Green Industrialization

A Summit on Green Steel Value Chains and Carbon Markets

26 May 2026

Johannesburg, South Africa

Introduction

Industry decarbonization is critically important to the Republic of South Africa's industrial strategy, trade policy, and climate commitments. It serves as a key pillar for achieving South Africa's 2050 net-zero goal, maintaining export competitiveness, and managing the societal impacts of a just energy transition. It also represents a significant opportunity to reposition South Africa within the evolving global landscape. This high-level, action-oriented summit, convened under the Leadership Group for Industry Transition (LeadIT), brought together policymakers, industry, financial institutions, carbon market practitioners, and international partners to accelerate coordinated action. It had two priority areas of focus:

- Decarbonization of the iron and steel value chain, and
- Carbon markets in support of the implementation of Article 6 of the UNFCCC's Paris Agreement.

This report, authored by the Summit's Rapporteur, Shimukunku Manchishi, Senior Policy Officer (Trade) at the African Future Policies Hub, provides a record of proceedings for the Summit.

Objectives

Structured across a full-day programme, the event pursued three core objectives:

- **Align on strategy and opportunity:** Establish a shared understanding of the global green steel transition and South Africa's strategic position within it.
- **Identify structural barriers and solutions:** Diagnose the key policy, financial, infrastructural, and technical constraints to green industrialization and just energy transition and identify actionable pathways to address them from leading international precedents.
- **Mobilize investment and action:** Equip participants with a technically robust and commercially actionable understanding of carbon markets, and identify credible levers to unlock capital at scale, and define priority actions across government, industry, and finance needed for industrial decarbonization.

Opening Plenary

The national imperative behind green industrialization

Master of Ceremonies, Ms. Verashni Pillay, Editor-in-chief of Explain News, opened the Summit by emphasizing the urgency of green industrialization as both a climate response and an economic development strategy. She highlighted concerns about future generations that will inherit the consequences of current policy decisions.

A key message was that green industrialization should not be viewed solely as an environmental obligation but as an opportunity to create future jobs, strengthen competitiveness, and secure long-term economic prosperity. Pillay noted that global industries are already transitioning to low-carbon production systems and warned that South Africa risks losing export competitiveness, particularly in markets such as the European Union, where carbon-related trade measures are becoming more prominent. She concluded by emphasizing that green industrialization is already underway globally. The key question for South Africa is whether it will help shape this transition or be shaped by it.

Mr. Kristian Olsson Selerud, Minister Councillor and Deputy Head of Mission, Embassy of Sweden, highlighted the importance of green industrialization in addressing South Africa's structural economic challenges, including high unemployment, energy constraints, skills shortages, and declining competitiveness. He argued that green industrialization offers an opportunity to build new industries, attract investment, and create future-oriented jobs while supporting sustainable economic growth.

Representing Sweden – as one of LeadIT's Co-Chairs – a major focus of the Deputy Head of Mission's remarks was the role of the initiative in leading the green transition of high-emission industries, such as steel, cement, and transport, through international partnerships. He noted that Sweden and India had recently reaffirmed their commitment to the initiative and intend to launch LeadIT 3.0 at COP31 – with activities continuing until at least 2030.

In emphasizing the importance of international partnerships in supporting industrial transformation, Mr. Selerud noted LeadIT's engagement with South Africa's Department of Electricity and Energy on sectoral investment planning aimed at unlocking concessional climate finance and aligning industrial strategies with global climate goals.

Drawing on Sweden's experience, he outlined the country's ambition to become the world's first fossil-fuel-free OECD nation by 2045. Sweden has already emerged as a leader in green steel, low-carbon cement, and circular manufacturing systems. He highlighted innovation as a key driver of Sweden's industrial success and suggested that South Africa and Sweden possess complementary strengths that could support deeper cooperation.

South Africa's industrial base, renewable energy resources, and young population provide a strong foundation for green industrial development. However, realizing this potential will require significant investment, stronger public-private collaboration, and coordinated action to develop green steel, green hydrogen, and carbon market opportunities.

Ms. Banu Prakash, Deputy High Commissioner of India, focused on the strategic importance of steel in national development and industrialization. The Deputy High Commissioner described steel as the foundation of modern economies, underpinning infrastructure, manufacturing, renewable energy systems, transport networks, and industrial growth.

Ms. Prakash highlighted India's achievements as the world's second-largest steel producer and outlined India's ambition to expand steel production capacity significantly by 2030. At the same time, she emphasized that India is pursuing a pathway that balances industrial growth with decarbonization. This includes achieving major renewable energy targets ahead of schedule and introducing a green steel taxonomy that sets benchmarks for low-carbon steel production. A central theme of her remarks was that developing countries should not be forced to choose between economic development and climate action. She argued that the transition to green industry must be practical, affordable, and supportive of development objectives. Technologies such as renewable energy, green hydrogen, energy efficiency, carbon capture, recycling, and digitalization will all play an important role in reducing emissions from steel production.

The Deputy High Commissioner also raised concerns about emerging environmental trade measures, particularly the European Union's Carbon Border Adjustment Mechanism (CBAM). She cautioned that climate-related standards and regulations should not become hidden barriers to trade that disadvantage developing economies. Instead, countries such as India and South Africa should actively participate in shaping global standards and rules for green industrialization.

Turning to South Africa, she noted that the country possesses substantial industrial capacity, mineral wealth, renewable energy potential, and an established steel sector. However, challenges such as high energy costs, logistics constraints, import competition, and concerns about industrial viability remain significant. She stressed that South Africa's green transition must protect jobs, sustain industrial activity, and support affected communities.

Ms. Prakash concluded by highlighting opportunities for deeper collaboration between India, South Africa, and Sweden in areas such as renewable energy, green hydrogen, critical minerals beneficiation, green steel production, carbon markets, technology transfer, and skills development. She described green steel as a critical area where climate ambition and industrial strategy intersect, offering significant potential for future partnership and economic growth.

Common Themes Emerging from the Session:

- Green industrialization is both an economic opportunity and a climate necessity.
- Competitiveness in global markets is increasingly linked to industrial decarbonization, particularly as carbon-related trade measures gain prominence.
- South Africa possesses significant advantages but must overcome fragmentation and implementation challenges.
- International cooperation, investment mobilization, technology transfer, and a just transition that protects jobs and communities will be essential to building a competitive green industrial economy.



Keynote

Green Industrial Policy in an evolving global landscape



Mr. Thabo Kekana, Deputy Director General at the Department of Electricity and Energy was initially asked about the tension between development and climate action. He stated that the two need not be in tension. Rather, they should coexist. He reflected that human beings should look after the planet for future generations. While doing so, we must also develop, offer jobs, and drive the economy. Creating a balance is about being responsible citizens.

The Deputy Director General thanked the leadership of LeadIT, and each Co-Chair, for convening the platform around two urgent priorities: decarbonizing the iron and steel value chain, and harnessing carbon markets to support credible climate finance. He noted that the meeting came at a decisive moment: a time when around the world, green steel and low-carbon industrial products are changing the terms of trade, investment, and competitiveness. For South Africa, he highlighted that this transition is not only a climate obligation but also an industrial opportunity. South Africa's iron and steel sector remains foundational to infrastructure and industry – mining, automotive, manufacturing, construction and energy – as well as regional value chains.

Yet, he recognized that the sector is under pressure from rising energy costs and carbon-related trade measures. He noted that this pressure can be turned into a platform for modernization, jobs, exports, and inclusive growth. He also noted that this work speaks directly to the department's strategic priorities and advances the Minister of Electricity and Energy's budget vote commitments, which state that South Africa must use energy infrastructure to drive industrialization, job creation, and economic inclusion, and operationalize its Integrated Resource Plan (IRP) implementation framework. At the same time, South Africa wants to expand and modernize the transmission, support green hydrogen initiatives, accelerate the renewable energy sector and rollout of energy efficiency initiatives, and strengthen localization through its flagship South African Renewable Energy Masterplan (SAREM).

Mr. Kekana recognized the growing importance of carbon markets and the implementation of Article 6 of the Paris Agreement as a mechanism that can help mobilize climate finance and support industrial transformation. In this regard, discussions on carbon credits and carbon market opportunities would be particularly important in strengthening a collective understanding of credible financing pathways for industrial decarbonization.

He informed attendees at the Summit that South Africa has ongoing scoping work and internal consultations regarding the Climate Investment Fund's plan to support South Africa's energy transition goals. Today's Summit would provide an opportunity to broaden the process further and include industry and labor representatives, financiers, technical experts, and development partners in the room. He urged participants to directly engage the department's project team present. He emphasized that the Government was eager to share

project opportunities with participants and to promote South Africa and showcase opportunities, risks and mitigating measures to explore solutions collectively.

While noting that decarbonization of heavy industry is difficult, the Deputy Director General stated it was not impossible. South Africa has a renewable resource spanning from PV solar, to wind, to a huge mineral base. The country also has industrial capacity and capabilities, including rich research capacity through its universities. Mr. Kekana emphasized that through partnership, South Africa can compete in a global industrial economy that is moving fast. What is needed, he stated, is coordination, execution, and shared commitment.

The Deputy Director General concluded by emphasizing that South Africa's transition will not happen automatically. It will require leadership, collaboration, innovation, and decisive execution. Despite its complexity, the opportunity before South Africa is significant. If all can act strategically, South Africa can be positioned as a competitive producer of green steel and other low-carbon industrial products, a regional hub for climate-aligned industrial investment, and a leader in African carbon market development. It can also be a role model for balancing industrial growth with just and inclusive energy without leaving anybody behind.

Panel Discussion

South Africa's steel value chain

This panel discussion aimed to explore the following questions:

- How transition ready is South Africa's steel value chain?
- What is the current state of the steel value chain and where does it stand on decarbonization?
- What are the key challenges to decarbonize and what supporting policies does industry need to create an enabling environment?
- What are your key recommendations to government and other stakeholders?

Moderator: **Mr. Irshaad Kathrada**, CEO, South Africa's Localisation Support Fund

Featuring on the panel were:

Mr. Renai Moothilal:	Executive Director and CEO: National Association of Automotive Component & Allied Manufacturers (NAACAM)
Ms. Philippa S. Rodseth:	Executive Director: Manufacturing Circle and Commissioner: International Trade Administration Commission of South Africa
Mr. Lester Mark Jones:	Managing Director: Scaw Metals
Mr. Gaurav Nagpal:	Chief Marketing Officer: ArcelorMittal South Africa
Mr. Charles Dednam:	Secretary-General: South Africa Iron & Steel Institute (SAISI)

Key points raised by panelists:

- The dual role of steel: not just a hard-to-abate sector posing a challenge, but a critical enabler for industrialization and the greening of other industries.
- Declining domestic demand: a severe drop in domestic steel demand, with South Africa losing about 31% of its steel demand over the last five years.
- Surging steel imports: while domestic demand dropped, imports increased by more than 80% over the same five-year period, often coming from countries with far fewer carbon emission restrictions.
- Progress in decarbonization: local industry is ready and already executing projects on the decarbonization roadmap (such as addressing energy supply to supplement Scope 2 emissions).
- The nature of interconnected value chains: addressing the steel value chain equivalent to "eating the elephant one bite at a time," emphasizing its critical upstream and downstream impacts on imports and exports.
- Steel as the backbone of the economy: steel's vital role in driving broader green industrialization, particularly in producing the local infrastructure needed to connect renewable energy projects to end-users.
- The challenge of demand and capacity mismatch: South Africa's low economic growth has suppressed demand, leaving local factories operating below maximum production capacity and making it economically difficult for companies to achieve the economies of scale needed to fund decarbonization (leading one panelist to wittily remark that the absolute easiest way to decarbonize is simply to "switch off industry")
- Strategic solutions: a call to boost demand through strategic state procurement (such as via infrastructure projects) and grow competitive exports while managing the impact of imports on local production capacity.
- Cross-sector solutions: "solving for steel" helps address systemic issues across other network industries (like rail, ports, and other means of transport) and paves the way for decarbonizing other hard-to-abate sectors like cement.
- Alignment with the global transition: South African companies – such as ArcelorMittal South Africa – are aligning with the roadmaps of their global groups (ArcelorMittal a global leader in steel production, with technologies aimed at reaching net-zero by 2050) and are committed to decarbonization as an evolutionary journey – rather than a single fix – toward a net-zero future by 2050.
- Prioritizing the economy: the core problem statement must be getting the economics right; while carbon reduction is a "social good," South African elections and societal demands are driven by jobs, food security, energy security, and water security.
- The "village" metaphor: having the raw ingredients (sun, wind, critical minerals) is not enough if the broader economic "village" is not systemically prepared to support the transition ("puberty is not a criteria to have a child")
- The challenge of policy misalignment and incoherence: South Africa charges a carbon tax on local production but not on imports, creating carbon leakage, while domestic scrap policy currently hinders the production of Direct Reduced Iron (DRI).
- Diverse technology adoption: industries are looking at all technological avenues, including Carbon Capture and Utilization (CCU), DRI, Electric Arc Furnaces (EAF), and the direct



reduction of iron through atomization. While EAF technology is ultimately more practical and economical for operations than traditional blast furnace technology, businesses must carefully manage these transitions within an affordable economic framework.

- Technology dependencies: deploying advanced technology is highly dependent on resource availability; having advanced technology without resources is equivalent to driving a Ferrari but getting stuck in traffic next to a Fiat—at that point, the technology doesn't matter because you lack the "fuel" to move.
- Resource readiness: to successfully deploy technologies like EAF, the industry critically requires access to reliable, affordable green energy and skilled labor.

Panel Discussion

South Africa's government initiatives

This panel discussion aimed to explore the following questions:

- What are the government's policies, existing or in development, that speak to industrial decarbonization?
- What steps is government taking, or needs to take, to enable industrial competitiveness and industrial decarbonization?

Moderator: **Ms. Leanne Govindsamy**, Head: Just Transitions, Southern Transitions

Featuring on the panel were:

Ms. Nyakallo Dlamulo: Director: Ferrous Metals, the Department of Trade, Industry and Competition (DTIC)

Ms. Annelize Van Der Merwe: Director: Green Economy Industries, the Department of Trade, Industry and Competition (DTIC)

Dr. Theo Covary: Energy Transition Policy Project Manager, and Industrial Decarbonisation Project Office: Department of Electricity and Energy

Mr. Tengo Tengela. Trade Policy Coordinator: Congress of South Africa Trade Unions (COSATU) and member of the National Economic Development and Labour Council (NEDLAC)

Key points raised by panelists:



- Strategic blueprint: opportunities afforded by the newly cabinet-approved Industrial Development Strategy, anchored around the "3 Ds": Decarbonization, Diversification, and Digitalization. The strategy reframes decarbonization as an avenue for industrial competitiveness and export-oriented growth.
- Importance of steel: a competitive steel industry as the backbone of South Africa's re-industrialization agenda; key infrastructure-built programs (such as renewable energy and transmission grids) heavily rely on intensive steel inputs.

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- Industry challenges: the domestic steel sector faces global and local hurdles, including oversupply, rising energy costs, logistical inefficiencies, import penetration, and evolving climate-related trade measures (such as CBAM).
 - Policy tools: the use and potential of diverse policy levers to support local demand and green transitions, including the Public Procurement Act of 2024 (enabling sector designation for local content thresholds), trade policies, and tariff protections.
 - The path forward: technological transition pathways must be practically phased and commercially viable; success requires coordinated implementation, investment mobilization, and deep alignment across government, labor, industry, state-owned enterprises, financial institutions, and academia.
 - Inclusive partnerships: the government's mandate as a "bring and braai" process, where all stakeholders (government, labor, industry) must come to the table, contribute their respective resources, and make firm commitments.
 - Facilitating business: the DTIC's role in creating an enabling regulatory environment and lowering the compliance burden for private entities looking to build energy capacity or develop projects.
 - Downstream demand: the renewable energy sector's potential as a powerful collaborative vehicle (involving the DTIC and the Department of Mineral Resources and Energy) to build downstream manufacturing value chains and create localized demand for steel.
 - Growth potential (drawing on examples from the battery industry): unlocking supply opportunities to an original equipment manufacturer (OEM) could exponentially scale a single company's steel demand from 200 tons to 10,000 tons a month.
 - Socio-economic framework: approaching the energy transition through the dual lens of South Africa's unique developmental realities and the overarching energy crisis.
 - Support for industry: confirmation that the Department of Electricity and Energy is committed to supplying the necessary power grid infrastructure and expansion required to sustain industrial growth and support large-scale industrial decarbonization programs.

Panel Discussion

Opportunities to accelerate South Africa's industrial decarbonization

This panel discussion aimed to explore the following questions:

- How can South Africa harness green steel first-mover advantage?
- What programmes are you working with – or are in the pipeline – to support Industrial Decarbonization?
- What challenges need to be unblocked?

Moderator: **Mr. Shimukunku Manchishi**, Senior Policy Officer: Trade, Africa Futures Policy Hub

Featuring on the panel were:

Mr. Irshaad Kathrada:	CEO: South Africa Localisation Support Fund
Dr. Umeesha Naidoo:	Industry Planner: Industrial Development Corporation (IDC)
Mr. Dominic B. Khothatso Milazi:	Senior Specialist: World Bank

Mr. Mchenge S. Nyoka:

Project Coordinator: UN Industrial Development Organization (UNIDO) and Mitigation Action Facility

Key points raised by panelists:

- Mission and mandate: the Localisation Support Fund (LSF) was established as a partnership between the government and the private sector to drive economic localization through research, capacity building, and value-chain integration (industrial facilitation).
- Decarbonization philosophy: localization and decarbonization are inextricably linked, requiring a holistic approach that improves manufacturing efficiencies and resource/carbon use.
- Focus on demand-side: to unlock investment in decarbonization and support the balance sheets of local industries, the LSF focuses heavily on driving the demand side of the equation.
- Transmission and distribution infrastructure: the LSF have mapped out the componentry needed for South Africa's 10-year national transmission expansion (e.g., steel towers, transformers, cabling) to evaluate and leverage local manufacturing capabilities.
- Debunking steel tower myths: the LSF conducted a price benchmarking analysis showing that at a proper level of scale, local steel tower manufacturers are highly cost-competitive against international imports (e.g., from India, South Korea, Turkey, China), countering myths that local options are uncompetitive.
- Renewable Energy Masterplan: the LSF has mapped out local manufacturing capabilities within renewable value chains (solar, wind, battery) and is conducting a cost-benefit analysis on policy interventions to strengthen the business case for investing in downstream local content.
- Opportunities for collaboration: companies looking to plug into the green steel and decarbonization agenda can partner with the LSF for research, value-chain linkage roundtables, or to access technical expertise (such as deployed industrial, process, and chemical engineers) to scale up production.
- Direct sector support: the Industrial Development Corporation (IDC) is actively involved in decarbonization programs within the steel industry, supporting business partners in developing their decarbonization roadmaps with a strong focus on a just transition.
- Broader green economy initiatives: beyond steel, the IDC is heavily invested in projects relating to the hydrogen economy (hydrogen strategy and commercialization), new energy vehicles, the battery value chain, and critical minerals.
- Financing role: the IDC provides value-added funding by leveraging industry insights and strategic partnerships, both locally and internationally, to assist companies with their decarbonization financing requirements.
- Partnership with UNIDO: the IDC is partnering with UNIDO on an application to the Mitigation Action Facility to accelerate decarbonization specifically within the steel industry. If successful, the IDC will manage the financial mechanism and technical assistance component to support companies on their carbon-reduction roadmaps.
- Key strategic advantages: South Africa is uniquely positioned to lead in DRI and green steel because of its abundant renewable resources, high-quality iron ore suitable for DRI, existing market access, and strong manufacturing base/brownfield assets.
- Evolving energy engagement: the World Bank has dramatically ramped up its dialogue and operations with South Africa regarding energy over the last 4–5 years, covering the entire value chain (generation, transmission, and distribution).

- The JETP Investment Plan (JETP-IP): the JETP-IP is structured so that the Department of Energy partners with multilateral development banks – a collaborative effort involving the World Bank, the International Finance Corporation (IFC), and the African Development Bank (AfDb); the just investment plan must be completed by the end of 2026, shifting the focus from abstract policy to real-time action.
- Accelerated Coal Transition Program: this program looks at the project-level steps needed to decommission and repurpose coal power plants to significantly lower the country's carbon footprint, while ensuring the process remains socially responsible and inclusive for local communities and economies.
- Transmission support: the World Bank recently approved a credit guarantee project aimed at easing the government's burden of providing sovereign guarantees for infrastructure projects, with the first tranche of supported projects focusing specifically on transmission to facilitate renewable energy deployment.
- Fostering ownership and inclusion: to ensure local ownership, the World Bank operates through local funding structures and institutions like the LSF and IDC; by providing concessional lines of finance to these entities, they ensure that funding flows directly to local entrepreneurs – including those from previously disadvantaged backgrounds – enabling them to own and drive their own decarbonization projects.
- UNIDO is actively implementing a variety of initiatives across South Africa tailored to lowering industrial carbon footprints. A primary focus of their current work involves supporting the transformation and transition of traditional industrial clusters into low-carbon industrial spaces.

Panel Discussion

Decarbonizing industry: the steel sector

This panel discussion aimed to explore the following questions:

- What is needed to enable industrial decarbonization and what steps and pathways should be considered?
- What learnings can be replicated?

Featuring on the panel were:

- Mr. Martin Pei:** Senior Advisor: Svenskt Stål AB (SSAB) and HYBRIT
- Mr. Deger Saygin:** Industry Programme Lead: Organisation for Economic Cooperation and Development (OECD)
- Ms. Merryl Ford:** Digital Transformation Specialist at the Council for Scientific and Industrial Research (CSIR): Centre for Robotics and Future Production

Key points raised by panelists:

SSAB and HYBRIT

- Context: Steel is essential for modern society, but current production processes heavily rely on coal and natural gas, emitting huge amounts of CO². A technology shift is required to make steel part of the climate solution.
- The HYBRIT Initiative: Started in 2016 as a joint venture between SSAB, LKAB, and Vattenfall. The initiative successfully created a pilot plant (commissioned in 2020) to

replace natural gas with fossil-free hydrogen in the direct reduction process, creating an intermediate product called sponge iron (or DRI).

- Key findings and successes:
 - Hydrogen-based DRI is technically viable and exhibits better properties (high metallization, good mechanical strength, and chemical stability) than gas-based DRI.
 - Integrating hydrogen storage into the electricity grid can result in up to a 40% savings in electricity costs.
 - The technology effectively decouples ironmaking from steelmaking, allowing the industry to transition in phases.
 - Production transformation: SSAB is actively transforming its production footprint. The transformation of the Oxelösund plant is close to commissioning, and construction has begun at the Lulea plant (expected startup by the end of 2029).
 - Product brands: SSAB has launched two primary sustainable brands: SSAB Fossil-free steel and SSAB Zero (steel made with virtually zero scope 1 and scope 2 emissions).
 - Barriers and challenges: while technical hurdles exist, the biggest practical challenge is coordinating the collective effort across the value chain. Crucially, this transformation would be impossible without the adoption and collaboration of major customers.

OECD:

- Context: the OECD worked closely with the South African government, specifically the Department of Forestry, Fisheries and the Environment (DFFE), DTIC, and National Treasury, to explore financing solutions for steel decarbonization. The results can be found in this collaborative publication: [Implementing the OECD Framework for Industry's Net-Zero Transition in South Africa](#)
- Four key messages:
 - The steel industry is vital to South Africa's economy, but pathways must be found to reduce its heavy emissions.
 - Decarbonization requires targeted economic and financial support.
 - Financial support must be paired with enabling investment conditions to successfully attract private-sector capital.
 - Beyond environmental benefits, decarbonization will position South Africa as a key player in green iron and steel, boosting its trade balance, jobs, skills, and economic growth.
- Technology options assessed: the study evaluated three pathways for South Africa: (1) hydrogen for iron/steel production, (2) CCUS (Carbon Capture, Utilization, and Storage) paired with biomass to produce e-methanol, and (3) energy efficiency for electric arc furnaces.
- Hydrogen economics: under current conditions, moving to a hydrogen-based DRI and electric arc furnace route costs at least 40% more than standard blast furnace routes.
- Cost drivers: while scrap metal pricing is an important variable, the competitiveness of green steel relies most heavily on two factors: reducing the price of hydrogen (projected to drop toward \$3/kg from around \$5–\$6/kg) and securing low-cost renewable electricity.

CSIR

- Using blockchain, AI and big data for carbon emissions measurement, reporting and verification (MRV) is the backbone of decarbonization in the steel industry (baseline and benchmarking, compliance and trade readiness, operational performance, investment and finance, green steel certification, and big data, AI and machine learning)
- Core problems lie in data, systems and costs

- A national MRV approach: SAISI has already articulated the need for national carbon reporting capability, steel-specific MRV as a priority, alignment with CBAM requirements, phased and pragmatic implementation, and inclusion of large and small players
- A phased MRV approach matters to avoid a big bang failure; a basic MRV that works should be the focus – steel-only module in a national portal, scope 1 and 2 only, proxy-based measurements, monthly data cadence, minimal disruption to operations; this lowers the barrier to participation
- Need to leverage existing infrastructure: CSIR's GHG Observatory is well placed to support; including human verification (technology strengthens trust) – immutable audit trails, evidence packs for verifiers, reduced verification effort and cost, verifiers remain central and authoritative
- Moving forward: test and pilot MVP – fastest path to CBAM readiness; refine, improve and launch V1 (from basic compliance to a robust national steel MRV capability); iterative development and continuous improvement; green steel certification
- Next steps: a practical pathway forward in support of decarbonization in the steel industry (CBAM is the catalyst, MRV is the foundation, green steel is the opportunity, collaboration is essential, funding is critical, decarbonization is inevitable)

Breakaway sessions

Participants divided into breakaway sessions were asked to discuss 1-3 levers to overcome challenges in policy, technology, finance, and capacity-building. A plenary session was held for participants to present pathways to move towards a green-steel fossil-free industry pact.



"Industry transition is meeting a challenging time globally - to get it right and fair has never been more important. The obstacles and opportunities for a just transition in South Africa are evidently many and need collective action of solidarity. It may seem impossible at times, until it's done. To share both risks and rewards will be crucial"

- Per Andersson, Head of Secretariat, LeadIT

Emissions trading and carbon markets

South Africa's current landscape and future opportunity

This session provided a substantive look into how emissions trading and carbon markets function globally and opportunities for South Africa.

Featuring on the panel were:

Mr. Roman Hackl:	Head of Unit: Emission Trading Monitoring, Swedish Environmental Protection Agency
Mr. Viktor Löfvenberg;	Senior Advisor: Emission Trading Monitoring, Swedish Environmental Protection Agency
Ms. Katrin Zimmer:	Project Manager: Emission Trading Monitoring, Swedish Environmental Protection Agency
Ms. Olivia Rumble:	Director, Climate Legal, South Africa
Mr. Shimukunku Manchishi:	Senior Policy Officer: Trade, African Future Policies Hub
Mr. Robbie Louw:	Director, Promethium

Key points raised by panelists:

- Strategic vision: the Swedish EPA's institutional vision focuses on environmental quality and governance.
- Framework for success: sustainable economic development relies on equality, job creation, and solid institutional foundations.
- Environmental governance systems: the importance of establishing robust systems to measure national greenhouse gas emissions, ensure data transparency, and build strong in-house expertise within government agencies.
- Peer-to-peer collaboration: offered a collaborative model based on mutual learning to help strengthen partner countries' Measurement, Reporting, and Verification (MRV) systems, climate strategies, and Nationally Determined Contributions (NDC) implementations.
- Potential areas of cooperation: policy design, carbon pricing reform, and expert exchanges on Emission Trading Systems (ETS) and CBAM.
- The Swedish model: Sweden's system comprises 16 environmental quality objectives established in 1999 that serve as a permanent platform for all environmental work, regardless of government changes.
- Institutional comparison: Sweden operates with a relatively slim administration (the Ministry of Climate and Enterprise has around 150 people) but relies on over 200 specialized government agencies to execute policy.
- Purpose of engagement: to foster long-term future collaborations with interested agencies and industries.
- Climate policy instruments: categorized the primary mechanisms available to governments to achieve Paris Agreement goals, specifically focusing on carbon pricing tools like carbon taxes and ETS.
- Renewable energy incentives: supportive policies required for deep decarbonization can include feed-in tariffs (guaranteed prices for producers) and auctions (where the lowest bidder wins delivery contracts).
- Energy efficiency standards: such standards are crucial to correct market failures, such as the split-incentive problem in the construction sector where building developers are rarely the ones paying the long-term energy operational costs.
- Green innovation and finance: while carbon pricing incentivizes technology development in theory, additional targeted investments and climate finance mechanisms (like Article 6 credits) are necessary for deep industrial decarbonization (e.g. hydrogen-based projects and carbon capture).
- The EU ETS, how it functions and how it has evolved over time.

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- Contextual overview on carbon markets and carbon taxes: discussions come at a critical time following major policy developments in South Africa, including the Carbon Tax Act, the Climate Change Act, the introduction of the EU's CBAM, and the rollout of Article 6.
 - Economic theory of carbon markets: through the lens of free-market economics, traditional production models fail to price certain inputs and outputs, resulting in "economic externalities."
 - Addressing externalities: greenhouse gas emissions are a classic economic externality that historically went unpriced; governments can address this either through command-and-control regulation (laws and penalties) or market-based instruments (carbon taxes and ETS).
 - The role of carbon markets: a fundamental pricing mechanism designed to force entities to pay for the environmental resources they consume and the climate impacts they generate.
 - South Africa's carbon tax: the opportunities if revenues can be channeled towards decarbonization efforts.
 - Windows of opportunity: recent changes in carbon markets which can be used to cover liabilities under CBAM.

Closing remarks and way forward

From conversation to commitment

Mr. Per Andersson (Head of Secretariat, LeadIT), Ms. Nyakallo Dlambulo and Ms. Annelize Van Der Merwe (both DTIC) brought the Summit to a close. They each thanked participants for their candid participation and committed to more collaboration towards supporting decarbonization of South Africa's steel sector and leveraging opportunities for carbon markets.

ABOUT LEADIT

The Leadership Group for Industry Transition (LeadIT) is a public-private United Nations mandated initiative co-chaired by the governments of India and Sweden, working to accelerate pathways towards an inclusive, just and equitable transition to net zero emissions from heavy industry. LeadIT was launched at the UN Secretary-General's Climate Action Summit in 2019 and comprises 19 member countries, including South Africa, and 32 member companies. LeadIT provides spaces for multi-stakeholder dialogue, supports technology transfer and co-development in heavy industry sectors, and facilitates country partnerships that support emerging and developing economies in accelerating their industry transition through coordinated multilateral technical and financial assistance. For more information, visit <https://www.industrytransition.org>