

FROM POLICY TO PROGRESS: OVERCOMING BARRIERS TO SOUTH AFRICA'S CURRENT AND FUTURE NDC TARGETS

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Key Insights

- South Africa's continuous reliance on coal remains a major barrier toward achieving its Nationally Determined Contribution (NDC) and renewable energy (RE) targets.
- The country's climate policy experts highlight systemic challenges such as ineffective policy execution, limited range of policy instruments, the entrenched influence of coal in the political and economic landscape, and insufficient grid capacity, all of which undermine South Africa's progress toward its NDC and RE goals.
- Recent legislative strides, including the Climate Change Act and the Electricity Regulation Amendment (ERA) Act, can help address these challenges as they provide the legal backing for enhanced climate action.
- Experts identify five key policies as the most effective in supporting South Africa's decarbonization efforts if well implemented: the Integrated Resource Plan (IRP), the Renewable Energy Independent Power

Producer Procurement (REIPPP) Program, the Just Energy Transition Investment Plan (JET IP), the Carbon Tax, and the Green Transport Strategy.

- To align with global climate goals, South Africa could adopt a more ambitious second NDC target and strengthen the draft 2023 Integrated Resource Plan (IRP) to accelerate the country's shift to a low-carbon economy through higher RE targets.

Introduction

South Africa has long recognized the necessity of decarbonizing its economy, particularly by diversifying the country's energy mix to reduce reliance on coal. The country has adopted a comprehensive mix of policies aimed at emissions reduction, climate adaptation, and economic resilience. These include both direct and indirect policy measures which integrate climate objectives into broader economic planning. This policy brief reviews the current trajectory of South Africa's climate action and

presents findings from the initial phases of a system dynamics emissions-economy modeling study. As part of this study, we compiled a [climate policy inventory](#) that details over 40 policies adopted by South Africa since 2000 to address climate change. The inventory includes specified sectoral policies targeting greenhouse gas (GHG) emission reduction across the energy, transport, industry, forestry, and agriculture sectors, along with economy-wide policies to adapt to the climate crisis and build resilience.

South Africa is currently off track to meet its emissions reduction targets as outlined in its Nationally Determined Contribution (NDC). The NDC aims to limit GHG emissions to between 398 and 510 MtCO₂e by 2025, with a further reduction to 350 to 420 MtCO₂e by 2030. Achieving these targets is hindered by the country's heavy reliance on coal, which still accounts for over 70% of its energy generation and consumption (see Figure 1).

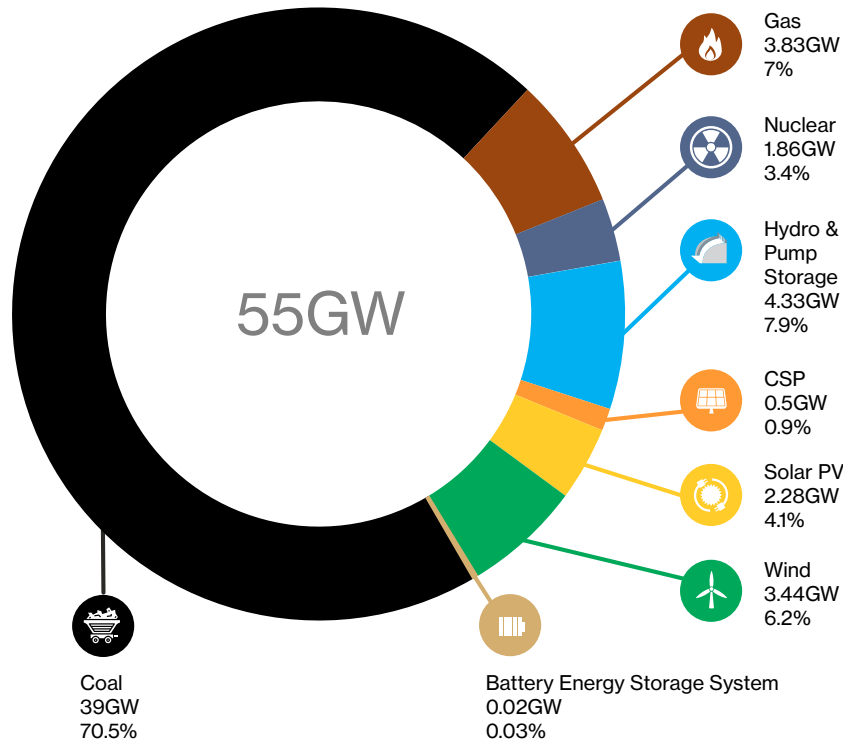
In collaboration with South Africa's Presidential Climate Commission (PCC), we identified and presented 17 major climate policies from our policy inventory for an expert elicitation to identify, among other insights, the most effective policies to support South Africa in achieving its decarbonization goals. Twenty-one experts from academia, the private sector, international organizations, and NGOs provided insights, drawing on their expertise in climate and energy policy, climate adaptation, climate finance, and sustainable development. Their responses revealed a broad consensus that South Africa is unlikely to achieve its NDC goals and clean energy targets due to systemic obstacles, including weak policy implementation, limited policy instruments, the political economy of coal, and grid infrastructural barriers, all of which jeopardize the country's decarbonization efforts.

Key Climate Policies for South Africa's Decarbonization

According to the experts, five policies stand out as the most effective in South Africa's efforts to peak carbon emissions by 2025, decline by 2030, and advance toward net-zero emissions by mid-century if well implemented. Foremost among these is the Integrated Resource Plan (IRP) 2019-2030. The IRP is South Africa's long-term policy framework for electricity generation expected to be updated periodically. It serves as South Africa's primary roadmap for diversifying its energy mix with a target increasing renewable energy (RE) generation from 16 percent in 2018 to 36.5 percent in 2030. Complementing the IRP is the Renewable Energy Independent Power Producer Procurement (REIPPP) Program adopted in 2011 as a market-based policy that facilitates private sector investment for grid-connected RE generation through a competitive tender and auction process.

The Just Energy Transition Investment Plan (JET IP), adopted in 2023, strengthens South Africa's climate policy framework by emphasizing a fair transition for coal-reliant workers and communities. It provides a policy

Figure 1: South Africa's Installed Capacity in GW, 2023



Source: Author with data from Draft IRP, 2023

plan for the required investments, estimated at US\$ 98.7 billion to support decarbonization commitments made by South Africa's NDC for 2023-2027. The carbon tax introduced in 2019 encourages industries to internalize the cost of carbon emissions to incentivize cleaner energy practices. It aims to reduce 34 percent of the country's carbon emissions by 2020 and 42 percent emissions by 2025. Lastly, the Green Transport Strategy (2018-2050) provides a long-term vision for reducing emissions in South Africa's transport sector.

Barriers to Meeting Decarbonization and NDC Targets

South Africa faces several barriers to meeting its NDC and RE targets. The most prominent barriers identified by the experts include:

Weak Policy Implementation: A recurrent challenge in South Africa's climate and energy policy landscape is the gap between policy formulation and actual implementation. While the country has developed ambitious policies and targets, translating these frameworks into actionable programs has proven challenging. This lack of commitment to policy implementation, according to the experts, can be attributed to various factors, including bureaucratic inefficiencies, inconsistent political support, and competing development priorities.

Limited Policy Instruments: South Africa's climate policies are largely confined to plans and strategy documents, with few policy instruments to drive decarbonization. The key instruments, the carbon tax and the REIPPP Program, face implementation challenges. The carbon tax, in particular, is weakened by its low rate and extensive exemptions for major emitters like Eskom, which reduces its impact on emissions reduction.

The Political Economy of Coal: The deep-rooted role of coal in South Africa's energy sector and the country's political environment pose another challenge. As a major source of

employment and economic activity, particularly in coal-dependent provinces such as Mpumalanga, Free State, and Limpopo, this reliance creates strong political and economic resistance to rapid decarbonization.

Grid Access: South Africa's aging electrical grid is a major barrier to scaling RE generation. Frequent power outages and load-shedding stem not only from inefficient coal plants but also from limited transmission and distribution capacity. This instability hampers the integration of intermittent RE like solar and wind, which require a flexible grid. For example, during the REIPPP program's Bid Window 6, several wind projects were stalled due to Eskom's confirmation of insufficient grid capacity (GBA, 2023).

Recent Policies

President Cyril Ramaphosa recently signed the Climate Change Act into law, which establishes a legal framework to guide South Africa's response to climate change and transition to a low-carbon, climate-resilient economy. In addition, President Cyril Ramaphosa has signed into law the Electricity Regulation Amendment (ERA) Act, which sets out far-reaching reforms of South Africa's electricity sector, including the establishment of a competitive electricity market to encourage RE investments from independent power producers (IPPs). The ERA Act also provides legal backing for enhanced grid management, including potential private sector involvement in transmission infrastructure.

Another policy likely to impact the country's decarbonization efforts is the South African Renewable Energy Masterplan (SAREM). Although still in its draft stage and yet to be adopted, SAREM provides a framework for developing RE and battery storage value chains through RE industrialization and job creation. However, the recently published 2023 Integrated Resource Plan (IRP) has faced backlash from experts and the public for its perceived insufficient commitment to RE and over-reliance on gas, raising concerns about its alignment with South Africa's climate and RE goals.

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Recommendations

With the Climate Change Law as a new legal backbone, the South African government could focus on effective implementation of policies like the Integrated Resource Plan (IRP) and the Just Energy Transition Investment Plan (JET IP), ensuring streamlined processes and consistent political commitment. To meet the policy goals, the country's grid infrastructure must be modernized to support large-scale RE integration. To enhance the effectiveness of South Africa's carbon tax, the government could consider progressively increasing the tax rate while reducing exemptions for major emitters, and further the revenues to support RE projects and just transition initiatives.

In addition, diversifying policy instruments, fostering public-private partnerships in grid and RE investments, and revising the draft 2023 IRP with more ambitious RE targets will enhance South Africa's progress toward its climate goals. As the country prepares to update its NDC in 2025, we recommend the government consider setting a more ambitious emission reduction target to align with global efforts to limit warming to 1.5°C. Finally, promoting a just transition by supporting coal-reliant communities through reskilling and economic diversification can help balance the socio-economic impacts of the transition to ensure both climate and economic goals are met equitably. ●

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