
THE REAL ECONOMY BULLETIN

TRENDS, DEVELOPMENTS AND DATA

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Brief: Decarbonising the economy: risk or opportunity?

The commitment made by South Africa to reduce Green House Gas (GHG) emission levels at the December 2015 COP21 negotiations will affect manufacturing and mining in various ways. A key dimension is the impact of the additional cost of electricity (due to the carbon tax) and the costs associated with improvements in the use of energy, imposed by regulatory constraints. Meeting South Africa's COP21 targets will likely require diversification away from the current dependence on mining exports, which aligns with the core objectives of the Industrial Policy Action Plan.

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In December 2015, the United National Framework Convention on Climate Change (UNFCCC) hosted Paris COP21¹ negotiations with the aim of negotiating internationally binding agreements on climate change. The negotiations centred on the commitment to limiting the rise in global temperatures to below 2 degrees Celsius.

The climate change governance framework has evolved over time from a top-down to a bottom-up approach that no longer imposes legally binding agreements, which enables countries to decide on their own mitigating strategies. Commitments have been made by 150 countries in the form of Intended National Determined Commitments (INDCs). They will be measured from 2020 and reported on every five years. However, there remains a gap between the promotion of climate change ambitions and the complexity of implementing climate change goals within specific contexts.

In preparation for the negotiations at COP21, South Africa committed to reducing its GHG emission levels, applying a peak, plateau and decline approach, to between 398 and 614 MtCO₂e (metric tons of carbon dioxide equivalent) over the period 2025 to 2030, in a bid to demonstrate intended action towards a low carbon development path. If South Africa were to take no measures to reduce emissions and mitigate climate change, its emissions are projected to reach around 1,700 MtCO₂e by 2050. If measures implemented between 2000 and 2010 are taken into account (the “with existing measures” scenario), emissions are projected to reach around 1,600MtCO₂e by 2050.

¹ COP stands for Conference of the Parties, which are regular meetings of the countries engaged in climate change talk.

South Africa's commitments in Paris would cut its projected emissions well over half. This is considered an ambitious target for such an energy-intensive economy.

The policy instruments considered for achieving the target include: a carbon tax, desired emissions reduction outcomes (DEROs) for specific sectors, company-level carbon budgets, and a variety of regulatory standards.

According to a mitigation potential analysis study conducted by the Department of Environmental Affairs in 2014, the national mitigation potential (if all available measures are implemented) is estimated at 100 MtCO₂e in 2020, 340 MtCO₂e in 2030 and 852 MtCO₂e in 2050. Two key assumptions of the mitigation potential analysis are a real growth rate of 4,2% per annum over the medium term (2015-2020) and 4,3% over the long term (2021-2050). A lower growth rate scenario of 3,8% per annum is also considered in the analysis. At the lower growth rate projection of 3,8%, emissions in 2050 would be 15% lower than under the 4.3% growth rate scenario.

The chief challenge in the transition toward a low carbon economy in South Africa is tackling the carbon lock-in driven by the Minerals Energy Complex. The mining and energy sectors represent the key sectors that contribute to the carbon intensity of the economy. In the context of a cheap and abundant supply of coal-fired electricity, these sectors have fostered a carbon-intensive industrial development path that needs to be transformed to make a significant change to the mitigation landscape of South Africa.

The potential benefits and costs of mitigation for manufacturing depend largely on the structure of each industry and consequently vary by sector. In the short term there are benefits to the industrial sector in avoiding the costs of climate change – already beginning to take a serious toll on the economy, especially in agriculture and coastal communities – as well as through unlocking opportunities in energy efficiency in particular. The direct costs of mitigation generally take the form of investment in new technologies and higher energy tariffs and taxes. A sector with substantial potential for saving is the building sector.

In the long run, deep de-carbonisation can be achieved through transforming the energy system to shift away from fossil fuels combined with reduced energy intensity in production. In manufacturing, the biggest challenges arise in the energy-intensive industries, and especially in metals and coal beneficiation. Clearly the process of reducing emissions will require tough choices in these industries, which may paradoxically be made easier by the current commodity bust. In contrast, in the rest of manufacturing energy is less of a cost driver, and mitigation – including through both efficiency gains and shifting to renewable energy sources – should be easier.

In sum, meeting South Africa's COP21 targets will likely require diversification away from the current dependence on mining exports. From this standpoint, these measures are well aligned with the Industrial Policy Action Plan (IPAP), which also aims at economic diversification.