



Nikisi Lesufi

completed his B.Sc (Hons) at University of Leicester in 1989, and M.Sc from the University College London in 1991. From 1992 to 1996, he lectured at the University of the North. He was employed at the Department of Water Affairs and Forestry from 1996, where in 2001 he was promoted to the position of Director: Water Resources Management. He joined the Chamber of Mines in February 2002 as an Environmental Adviser. He was promoted to the position of Senior Executive: Health and Environment in 2008.

Lesufi serves on the board of the TEBA fund Trust, National Nuclear Regulator, Council of the Fossil Foundation of Southern Africa, Management Committee of the Water Institute of Southern Africa (Mine Water Division), Provincial Environmental Advisory Board of Limpopo, the Premier of Limpopo's Economic Advisory Forum, Water Sector Leadership Group, and is Patron and Trustee of the Tembisa Child Welfare and Family Society.

Hard Choices in 'Greening' South Africa's Economy

The South African mining and metals industry is under enormous pressure to reduce its energy intensity and to seek alternative measures to help keep the industry sustainable.

It should be noted that, wherever feasible and possible, the South African mining industry has significantly reduced its energy intensity through energy efficiency programmes and other means. It is also important to stress upfront that the minerals and energy complex of the country has formed the foundation for the industrialization of the South African economy over the past 120 years and continues to play a significant role as the country's core industrial cluster. This cluster accounts for over half of the country's merchandise exports, about 7% of GDP (rising to 20% with multiplier effects), 94% of the country's electricity production, 30% of liquid fuels production and about 500 000 direct jobs in the economy.

The recent national Greenhouse Gas (GHG) emissions inventory confirmed that the bulk of South Africa's energy source is coal to generate electricity. Indeed, this accounts for just over 50% of South Africa's emissions bill. The mining and metals industry, like any other sector of South Africa's economy, plays a major role in using this energy, and consequently in the latter emissions bill. This, to a large extent, is owed to our historical overreliance on low electricity costs for better margins, as well as to deep-level gold mines. It is clear that the impact of industrial energy efficiency policies on South African sectors has fundamental implications – such as profitability and employment – as well as environmental implications – such as lower greenhouse gas emissions and future sustainable development of the country. The fundamental issue to deal with is how to reconcile or combine these two sets of implications.

Unfortunately, the advent of the 'green economy' phenomenon and the emissions reduction commitments made by, inter alia, South Africa during the 2009 climate change conference in Copenhagen, have necessitated deep introspection about the structure of our coal-based economy. Taking cognizance of the fact that South Africa is one of the most mineral-endowed countries in the world, the mining industry is so central to the economy that it would take decades to make the dramatic change to low-carbon, and this transition would entail a change in economic and social structure.

Developmental Objectives in the Context of Climate Change

South Africa as an active player within the climate change arena is caught between a rock and hard place, having also to realise its developmental, economic, energy security, beneficiation and job creation objectives. Furthermore, as a result of

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the legacy of apartheid, millions of people require housing, clean water, sewage, land, energy and other basic services. South Africa must deal with these socio-economic development priorities urgently. It is thus crucial that there is policy coherence between government's industrialization, growth, job creation, energy security and beneficiation policies and its policy on addressing climate change. For instance, in the New Growth Path and Industrial Policy Action

Plan, the government is targeting growth in the minerals and energy complex as a key component of the effort to create another 5 million jobs over the next decade. Therefore, climate change response policy cannot be mutually exclusive from these other growth and energy policy objectives but, rather, must speak to and be integrated into the entire suite of key policy objectives. For example, there is a great need to integrate climate change policies with energy policy, industrial policies, and developmental agenda, to name a few – and, arguably, to reconcile the apparent contradictions between them, which will require trade-offs.

China, India, Russia and others are progressively taking jobs from South Africa by importing South African ore in raw form and investing in higher value adding steps such as smelting/extraction, metal refining, and producing products for refining. South Africa then has to re-import the value added goods from these countries so that jobs can be created and retained within its borders. While current government policy has embraced sustainable development goals, the country continues to provide significant investment in energy-intensive industries. These industries are still an important source of employment, investment and income for the country.

Operational and Trade Vulnerability

South Africa already faces a rapidly escalating electricity price, which has significant implications for the competitiveness and viability of existing mines and operations that were established on the basis of technologies relevant at that time. The *Integrated Resource Plan (IRP) 2010 Revised Balanced Growth Scenario* already has electricity prices rising to over R1 per kWh by 2018. The proposed carbon tax at R100 per ton of CO₂ would add another 18 cents to the cost, making South Africa a much less competitive electricity supply country in relation to our major competitors. It takes considerable expense and time for the existing mines, smelters and refineries to change technologies and it is therefore critically important to provide long phase-in periods for issues such as stringent climate policies.

In a NEDLAC FRIDGE study “to provide an overview of the use of economic instruments and develop sector plans to mitigate the impacts of climate change”¹, it was concluded that:

“Our mining industry is facing one of the fiercest competitions from other countries and the rising cost of doing business is one of our limiting factors to staying competitive. Our declining mineral reserves, increasing depths to access these minerals and increasing labour costs, etc, are all part of the equation that needs added variables to caution our dwindling competitiveness in the global trade market.”²

In a Business and Industry Advisory Committee to the OECD discussion document on Carbon Leakage and Competitiveness Impacts, it was noted that, while some sectors are likely to grow, other sectors – such as domestic energy-intensive industries exposed to international competition – may incur sizeable competitiveness and output losses from unilateral and regional emissions reduction action³. One particular concern is that asymmetric environmental policies will reshape international competitive advantages, incentivizing such industries to defer investment decisions or, worse, move away from countries where environmental measures are more stringent to jurisdictions not subject to the same requirements. Should this be the case, global carbon emission reductions would be eroded, giving rise to the so-called phenomenon of 'carbon leakage', i.e. an increase in carbon dioxide emissions (and economic activity) in one country as a result of an emissions reduction by another country.

It is therefore crucial for South Africa to craft an enabling framework that facilitates carbon abatement in the domestic market place and which does not expose the country's carbon intensive trade-exposed industries to unfair competition from other key exporting countries that may not have instituted a strict climate policy. The practical reality is that South Africa does not yet have a proper fact-base on all the key abatement and mitigation opportunities and their respective costs. The adoption of negative incentives may not reduce the carbon intensity of the economy in the absence of a facilitative environment for abatement. It is also important to state that many of South Africa's key competitors have either held off on implementing carbon tax systems, or have provided their carbon intensive trade exposed industries with significant offsets, to preserve their competitiveness in international markets. It is also the very reason why many of these countries have also not wanted to be global front-runners on responding to global climate change.

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One of the key industrial policy and objectives facing the country, and the mining industry in particular, is beneficiation, which is sometimes highly energy-intensive and may not be compatible with a low carbon future. Therefore, South Africa will have to weigh its climate change ambitions for a low-carbon trajectory against this particular industrial policy objective.

Conclusions

It is important that a proper fact-base on abatement and mitigation opportunities, costs and benefits is developed to ensure a more thorough understanding of what is possible for the country over the next two decades. Government, by its own admission, is unsure of the size of the opportunities for CO₂ abatement or the costs related to such opportunities. There is not yet a published or agreed abatement cost curve for South Africa. This is a significant blind spot for the authorities in terms of designing an appropriate suite of actions to tackle climate change.

Climate policies should promote, or at least retain, the competitiveness of carbon intensive trade-exposed sectors. The use of offsets and other mechanisms must be explored so as not to undermine the international competitiveness of the carbon intensive trade-exposed sectors – until such time as there is a more level global playing field.

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Balancing the potential benefits from further development of South Africa's mineral and agricultural endowments with a less resource- and energy-intensive development path has been highlighted as a key future challenge for future deliberations by the nascent National Planning Commission (NPC).

In its *Diagnostic Overview*, released by NPC chairperson Minister Trevor Manuel and deputy chairperson Cyril Ramaphosa, the NPC warned

that the costs of such a transition would not “fall evenly” and export sectors could “suffer”⁴.

The Diagnostic Overview describes the prevailing resource-intensive nature of the South African economy as “unsustainable”, and vulnerable to external forces that can induce local booms and busts. Further, it notes that the coal-heavy nature of the economy opens it to penalties as the world seeks to mitigate climate change by reducing emissions of carbon dioxide. With these assertions, it is clear that for sectors that are high energy users or GHG emitters, and for the economy across the board, the 34% reduction target will be challenging. Overall, the implications for energy-intensive and trade-exposed sectors of the economy need to be clearly understood.

But the report also notes that the export earnings of the mining sector currently help to fund South Africa's imports and create a large number of low-skilled jobs. Therefore, government and industry need to look at innovative ways in which to support and transform the sector as it changes to a low-carbon future. Furthermore, the SA mining industry must follow the route of its international counterparts such as those in Australia, Canada, etc, by developing climate change policies in unison with government policy currently under development.

In conclusion, further work needs to be done in developing domestic policy measures to address the vulnerability of energy intensive and trade-exposed sectors – such as mining – to response measures by developed countries. Such measures should be designed in the overall context of climate policy, enabling these sectors to contribute to action on climate change and also to benefit – rather than suffer – from climate response measures.

NOTES

- 1 NEDLAC Fund for Research into Industrial Development, Growth and Equity (FRIDGE) Research Report, Study to provide an overview of the use of Economic Instruments and develop Sectoral Plans to mitigate the effects of Climate Change (http://www.dti.gov.za/industrial_development/docs/fridge/FRIDGE_Final_Report.pdf)
- 2 Ibid.
- 3 Business and Industry Advisory Committee to the OECD, Thought Starter: Carbon Leakage and Competitiveness Impacts (http://www.biacc.org/statements/env/10-10_Thought_Starter_Carbon_Leakage_and_Competitiveness.pdf)
- 4 National Planning Commission, Diagnostic Overview (<http://www.info.gov.za/view/DownloadFileAction?id=147192>)