

5 Key Areas for Consideration

“Exxaro Resources is building a clean energy business on regulatory opportunities arising from reactions to climate change. These include: cogeneration projects based on waste energy recovery from industrial operations, wind energy projects based on the recently announced renewable energy feed-in tariff (REFIT), and concentrated solar energy projects based on the REFIT.”

- Exxaro Resources, Carbon Disclosure Project 2009

This section of the report discusses key issues to be considered in the framing of an effective national response to climate change. Issues discussed here are drawn upon in the recommendations and way forward proposed in Section 6 of this document.

5.1 Placing National Responses in Global Context

As Section 4 of this document demonstrates, climate change presents substantial risks and opportunities for the South African economy. The nature and scale of these impacts, whether they are occurring now or are anticipated for the future, necessitates a proactive response to climate change on the part of both the public and private sector.

Proactive engagement and management of climate change issues is desirable over and above concerns related to changes in the national regulatory landscape. For many sectors of the economy, significant threats and opportunities to business lie outside the realm of national regulatory mechanisms, in the form of global supply chains, investor relations, reputational issues and the growing demand for low carbon goods and services. All of the factors listed have gathered significant momentum irrespective of calls for domestic policy action. As such, climate change should be viewed not just as a regulatory issue, but as a commercial issue shaping pricing, market equilibriums and the competitiveness of industries and national economies.

Developing a thorough understanding of future regulatory and fiscal mechanisms in South Africa is vital for assessing the implications for industry and economic development. This matter warrants the significant attention placed on it, particularly investigations into the introduction of carbon pricing in South Africa. Nevertheless, domestic measures must be placed within an international climate context that offers the potential for new emergent global winners and losers.

National regulatory measures cannot be seen in isolation, and it is critical that South Africa’s mitigation response be developed in tandem with influencing both international governmental and non-governmental action on climate change, particularly in relation to developed countries. For example, carbon taxation of energy intensive industries in South Africa could result in significant competitiveness losses for the country, and may not result in meaningful gains for the global climate, unless relative parity is retained with key competitor nations in Asia and the developed world. National regulatory action must be supported by appropriate interventions at the international scale to support a fair and coherent South African response.

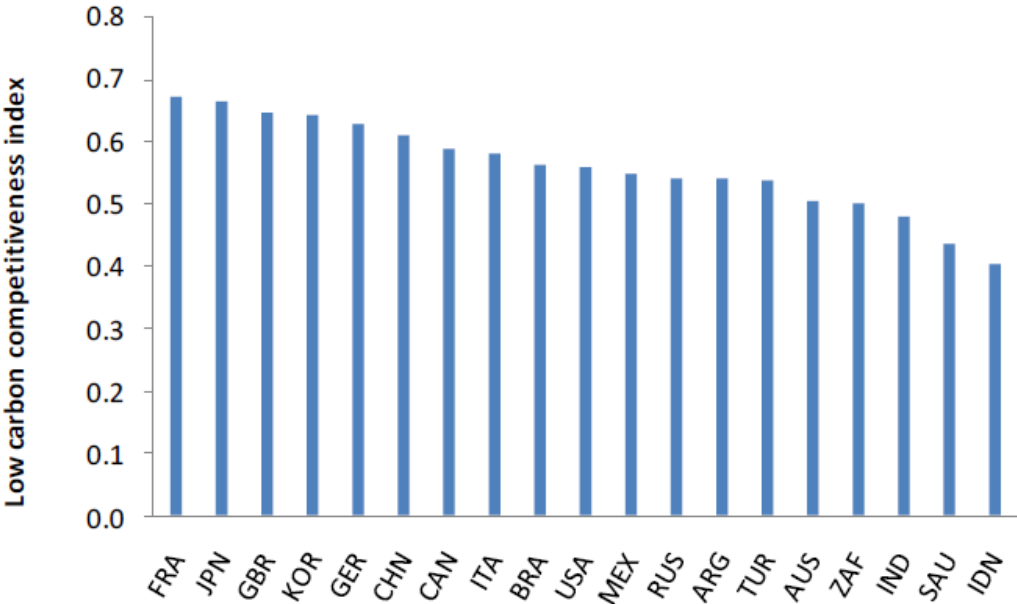
5.2 The Role of Business in Climate Policy

Given the interactions between national and global climate action, and the positioning of climate change as a commercial issue for industries, the role of business in mitigation efforts needs to be considered carefully.

As global mitigation measures intensify, it is reasonable to expect that the cost of carbon will be increasingly internalised within markets, with carbon intensive market players facing increasing formal or informal competitiveness constraints (Lehman Brothers, 2007b). Changes in marginal production costs for particular industries linked to regional or international climate regulation can be expected to prejudice carbon intensive companies the most, whilst these companies are also likely to be discriminated against in less formal means through supply chains, investor and finance concerns and certain reputational losses, as well as a failure to keep pace with technological innovation.

Positioned globally, South African business is currently poorly placed to address a number of these concerns, given our strong dependence on fossil fuels and high levels of energy intensity per economic output. A recent study has used the concept of ‘carbon productivity’, or the level of GDP produced per ton of carbon emitted, to compare the relative climate competitiveness of the world’s major economies. The study concludes that whilst South Africa’s carbon productivity is improving, the country nevertheless ranks poorly on the global climate competitiveness index, as illustrated in Figure 7 below:

Figure 7: The G20 Low Carbon Competitiveness Index



Source: Climate Institute, E3G and Vivid Economics (2009)

Note: ZAF denotes South Africa

The ‘most carbon intensive exports, high carbon intensity electricity and the second lowest rate of investment in physical capital’ are the reasons cited for South Africa being placed 16 out of 19 countries under this index (Climate Institute and E3G, 2009 p15).

Significant effort combined with longer-term vision is thus required to improve the relative carbon competitiveness of the economy, and in the process, to decouple economic growth from emissions as countries such as Denmark, Germany and Mexico have done.

At present, nations such as South Korea, China, Russia and Argentina are all characterised by a lesser reliance on comparatively 'carbon light' service industries within their economy than South Africa (CIA, 2010). However, as shown in the figure above, these countries still rank better than South Africa in terms of GDP produced per ton of carbon emitted. Whilst certain of the G20 nations are characterised by greater tertiary sector dominance than South Africa (such as the USA, United Kingdom, France and Japan) the high carbon intensity of the South African electricity grid remains a constraining factor for climate competitiveness for all sectors of the economy, whether primary, secondary or tertiary.

Important questions are therefore raised concerning the role that business should or should not play in climate change, and in the shaping of national climate policy more broadly. A recent criticism of the climate policy emphasis in South Africa has been on the apparent imposition of climate change policy on industry, without effective consultation with the private sector (Business Day, 15 February 2010). Calls for government to engage with business, in order to take into account the private sector's views and aspirations, have been put forward.

Whilst these concerns may be warranted, it is further argued that business should play an instrumental role in developing and implementing climate policy, in a manner that goes beyond a process of engagement. Given the global nature of the climate challenge and the global nature of response measures, and given that climate change incorporates important elements related to commercial and industrial competitiveness, it is arguable that a concerted business drive on climate change, in collaboration with government, is preferable to ensure that the necessary measures and enabling environments are developed to address the country's immediate and longer-term carbon risks. In other words, business pressure on governments to support low carbon transitions may be proactively required to assist South African companies to thrive in a carbon constrained future.

As an example, major fossil fuel investments in energy infrastructure represent a long-term carbon liability that will almost certainly be passed onto consumers and industry in the event that carbon is priced into the economy. At the same time, regardless of domestic carbon pricing, a number of activities ranging from tourism to manufacturing exports could be prejudiced by increasingly carbon intensive electricity production. Associated costs for Carbon, Capture and Storage (CCS) may also need to be factored into decision making, as the country continues to make use of coal resources.

As such, it would not be surprising to see certain businesses leading the way for the decarbonisation of the national electricity grid, linked to increased scope for independent clean energy producers and the identification of commercial low carbon energy solutions. Such actions will not be based on altruistic intentions but on the management of climate change as an issue of commercial significance, to ensure that South Africa is not left in a prejudiced position in comparison to other countries. Evidence of increasing domestic sentiment in this regard can be found in a number of sources (DEAT & DST, 2009; CDP, 2009; NBI and BUSA, 2009).

Business involvement on climate change, particularly in high risk and high opportunity sectors, should thus not be left to a process of engagement. In certain cases, such as in the fruit and wine sector, direct leadership has been displayed in response to commercial drivers, well in advance of policy. This latter approach is arguably an indication of what is required in a number of industries: concerted business action on climate change, supported by all spheres of government, as part of a holistic and effective climate response.

5.3 The South African Emission Reduction Target

In December 2009 South Africa announced a conditional national emission reduction target whereby the country's emissions would peak by 2020-2025, plateau for a decade and then decline in absolute terms from 2035 onwards. Under such a scenario, the country's carbon dioxide equivalent (CO₂e) emissions would peak closer to 600 parts per million in 2025 rather than reaching 1600ppm by 2050 and rising.

The target, which is conditional on international support through finance, technology transfer and capacity building, nevertheless represents a massive challenge for the country. Achieving the target goes beyond the modelling work undertaken within the Long Term Mitigation Scenarios (LTMS), and will require fundamental shifts in the structure of the economy and makeup of the country's energy system.

In particular, the role of the energy sector will be critical in achieving the emissions path put forward by President Zuma at the Copenhagen Climate Summit. Energy supply and consumption related to direct fuel combustion, synfuel production, refineries, fugitive methane emissions in coal mining and electricity use account for 79% of all greenhouse gas emissions in South Africa (DEAT, 2009b). The work of reducing emissions in the energy sector will also need to encompass a variety of role-players including government departments, the private sector and state owned enterprises. Programmes implemented by the Departments of Energy, Environmental Affairs, Transport, Human Settlements, Trade and Industry, Science and Technology, Mineral Resources and Agriculture, Forestry and Fisheries, to name a few, as well as energy intensive industries, local municipalities and Sasol, Eskom and Transnet, will all be crucial in the achievement of significant emission reductions in the country.

In a number of areas the energy sector is relatively well prepared to address emissions: much of the policy framework including the Renewable Energy White Paper and Energy Efficiency Strategy are in place, a Renewable Energy Feed-In Tariff has been developed, and the introduction of improved public transport and refinement of the Energy Efficiency Accord are fairly well advanced. Despite this progress, areas of concern remain, including:

- The overall slow introduction of energy efficiency measures and standards in the country, including residential demand management measures such as large-scale solar water heater and ceiling insulation rollout
- The lack of immediate low carbon fuel switching options in the country. Natural gas supplies are not plentiful in South Africa and where available or imported, these are currently predominantly used within the Sasol and PetroSA gas-to-liquids programmes. Although South Africa has gas agreements in place with Namibia and Mozambique, much work and time will be required to set up agreements with other countries in Sub-Saharan Africa with plentiful gas reserves, such as Tanzania, Angola and Nigeria. A Regional Gas Pool, as a complementary body to the existing Southern African Power Pool (SAPP), is still some way off from being developed, despite the benefits of natural gas for providing a low carbon, efficient and reliable energy source
- Continued uncertainty over the future of conventional and high temperature pebble bed nuclear power generation in the country. Decisions regarding nuclear power will need to be made rapidly, as nuclear power stations can take 8 years or more to develop, and time is fairly limited for investment decision making if the targeted emissions' trajectory is to be reached. Indeed, energy related investment made in the next decade will go a long way to deciding the country's emissions profile for the next 20 to 30 years, crucial periods from a climate perspective
- A lack of public scrutiny, engagement and accountability regarding the energy and electricity planning process in the country. This matter is dealt with in more detail in Section 5.4 below

Despite the considerable challenges that are evident, the achievement of the national emission reduction target undoubtedly offers potential economic opportunities for South Africa. Firstly, such an effort can help drive the implementation of Sustainable Development Policies and Measures (SD-PAMs) in the country; in other words, those national programmes that support sustainable development, result in net economic benefits and reduce emissions.

In addition, opportunities exist to leverage international support for registered Nationally Appropriate Mitigation Actions (NAMAs). This approach to developing country mitigation has been substantially incorporated within recent climate agreement processes, including the Copenhagen Accord. It is expected that NAMAs will facilitate direct financial flows or the generation of tradable credits for developing countries, through the implementation of policy-based commitments to emission reductions. Efforts to achieve the national reduction target can thus be supported by wider financial flows, the adoption of best practices and other forms of assistance.

5.4 Energy Planning

As a result of the critical role of the energy sector in reducing national emissions, and given the dominance of electricity based emissions for the majority of South Africa's largest listed companies (see, for example, CDP, 2009), it is apparent that energy planning and subsequent investments will play a key role in South Africa's climate future. This role includes the overall emissions trajectory of the country, but also applies to the climate change performance of a variety of companies, a number of whom will likely face increasing pressures and incentives to address the carbon footprint of their organisation, products or service offerings.

However, at present energy planning in South Africa is fragmented between Eskom, NERSA and the Department of Energy (DoE), and has been managed without sufficient public engagement. Public engagement on energy planning is vital not only to ensure transparency and accountability in the energy planning process itself, and to attain energy security objectives, but also offers the opportunity for business, labour and other key role-players to influence the carbon trajectory of the country. Effective consultation with, and public accountability to, civil society and other constituents in energy planning is an important part of ensuring dialogue and debate within the democratic process, as key decisions affecting the profitability and carbon related liabilities of companies, and the livelihoods of ordinary citizens, are enacted, and in many cases, entrenched for decades to come in the form of long-lived investments.

Recent legislative developments requiring that an Integrated Resource Plan (IRP) for electricity be published and made available for public review and scrutiny offers some encouragement in this regard. Also encouraging are announcements made by President Zuma that an Independent System Operator is to be established in the country (The Presidency, 11 February 2010). Aside from providing overall direction for the operation of the national power system, the Independent System Operator has an important planning function in the development of subsequent IRPs, and plays a key role in the procurement of power under current regulations, including new generation from Independent Power Producers (IPPs)⁷. Whilst the first IRP, published on the 31st of December 2009, provides only a short and unqualified synopsis of current electricity planning, plans to prepare a revised IRP2 from January 2010 could support the development of this document as a useful planning aid and guide for developers, investors and companies alike.

⁷ See the *Electricity Regulation Act, No. 4 of 2006: Electricity Regulations on New Generation Capacity (Notice 721 of 2009)* published by the Department of Energy on 5 August 2009.

However, ultimately what is required is both an Integrated Energy Plan (that addresses all energy sources including liquid fuels) and an Integrated Resource Plan (a plan focusing on electricity only) that incorporate agreed upon climate change goals, in a manner appropriate with a consultative policy process on issues of national importance. Such an approach will ensure that carbon constraints on commerce and industry, whether formal or informal, can be accounted for and addressed within an effective, transparent and accountable energy planning process.

5.5 National Risks of Inaction and Benefits of Action

As climate change brings new risks for the national economy that need to be identified and managed, so further risks of inaction for South Africa become apparent. Important in this regard are the economic and commercial risks of 'business as usual'. The costs associated with business as usual growth, certain elements of which are discussed in the table below, have largely not been examined to the extent to which mitigation actions have been evaluated. This context creates a somewhat superficial comparison between a business as usual scenario on the one hand, and a mitigation scenario on the other.

Thus, whilst the transaction costs associated with the implementation of a low carbon transition for the economy do need to be considered carefully, so there are risks and costs associated with a failure to embark on low carbon development.

The table below outlines a number of the key risks of climate inaction, and corresponding benefits of action, for the South African economy, highlighting some of the risks associated with business as usual, as well as additional benefits of low carbon growth:

Table 6: Risks of Inaction and Benefits of Action on Climate Change

Risks of Climate Inaction		Benefits of Climate Action	
<p>Strong exposure to high fuel and energy costs</p>	<ul style="list-style-type: none"> ▪ Continued low levels of energy efficiency, coupled with insufficient public transport and heavy reliance on road based freight, places South Africa at considerable risk from rising electricity and fuel prices ▪ The International Energy Agency (IEA) predicts that oil will reach \$100 a barrel by 2020 and \$115 by 2030 as a result of rising demand in Asia and the developed world, despite the effects of the global economic downturn (IEA, 2009) ▪ Rising oil prices stabilising at levels approaching \$100 a barrel in the medium-term 	<p>Improved vehicle efficiencies and effective public transport</p>	<ul style="list-style-type: none"> ▪ Strong social benefits, improved air quality and tourist access, and reduced economic losses from traffic congestion through effective public transport development ▪ Emphasis on vehicle efficiency and public transportation reducing oil import requirements, with significant benefits for the national balance of payments. At present, oil remains South Africa's single largest import

Risks of Climate Inaction		Benefits of Climate Action	
	<p>could have significant negative impacts on GDP, considerably in excess of estimated mitigation costs for the economy (DEAT, 2007d). Balance of payments negatively impacted by increased oil import requirements</p> <ul style="list-style-type: none"> ▪ Heightened electricity prices from carbon pricing in conventional power generation could outweigh costs of implementing low carbon energy options, unless certain industries are exempt ▪ Building stock remains inefficient and vulnerable to energy price hikes 		
Continued exposure to trade, tourism and supply chain related barriers	<ul style="list-style-type: none"> ▪ Continued exposure of South African exports to various global supply chain initiatives, and potential border tax adjustments, as well as reduced tourism competitiveness from long haul flights, climate regulation in aviation and carbon intensive domestic transportation and accommodation 	Trade, tourism and supply chain benefits	<ul style="list-style-type: none"> ▪ Introduction of climate mitigation efforts and reduced carbon content in exported goods helping to retain market share, whilst encouraging commercial opportunities within the growing ecotourism and experiential (e.g. heritage and culture) travel market ▪ Support for foreign and national investment to exploit South Africa's considerable renewable energy resource potential
Entrenchment of carbon intensive assets	<ul style="list-style-type: none"> ▪ Maintenance of outdated technology and failure to attract low carbon technologies, services and manufacturing ▪ Continued carbon price risk for long-lived fossil fuel capital assets ▪ Climate sensitive or energy intensive 	Enhanced efficiencies in support of socio-economic development and competitiveness	<ul style="list-style-type: none"> ▪ Enhanced industrial energy efficiency improving production processes and reducing energy price risks, whilst supporting export goods in carbon sensitive markets ▪ Improvements in efficiencies of residential housing reducing

Risks of Climate Inaction		Benefits of Climate Action	
	industries unable to source clean energy supplies and inputs as required to mitigate supply chain, investor, regulatory or reputational pressures		consumer impacts of electricity prices whilst supporting improved indoor air quality and safety for poor households
Concerns for international relations and company reputational losses	<ul style="list-style-type: none"> ▪ Relative losses in national prestige, failure to access international funding support for mitigation actions and potentially damaging company branding impacts ▪ Ability to influence global climate change decision making to ensure parity with competitor countries limited by lack of mitigation involvement 	Development of green jobs	<ul style="list-style-type: none"> ▪ Opportunities for labour intensive employment generation in renewable energy, energy efficiency, organic farming, biofuels and fire control, in sectors presently characterised by increased capital investment and declining employment levels ▪ Opportunities to expand the strong existing finance and services components of the national economy in the delivery of carbon management tools, carbon markets and employment in climate related service industries ▪ Wider support for the movement towards a knowledge based economy in support of national economic advancement (DST, 2008)
		Improved access to finance, technology and international climate negotiations	<ul style="list-style-type: none"> ▪ Opportunities to benefit from international financial flows and technology transfer in support of developing country mitigation efforts ▪ Increased ability to influence climate change policy and decision making at the global scale, including securing competitiveness for key industries and within key markets