Climate change and trade conference
26-27 October 2009
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- The previous presentations have laid the premise for the urgent need to respond to the vulnerabilities of climate change.
- SA and its immediate region will be negatively affected by climate variability and its impacts
- Focus this presentation on mitigation primarily and less on adaptation
- Presentation will include overview on the following broad points: SA's emissions profile, dealing with the challenges around SA mineral energy complex, coal, various national policy scenarios and use of economic incentives, potential SA energy mix, SA's domestic negotiating interests and its international position

SA as a global emitter:

RELEVANT STATISTICS:

SA is one of the top 12 global GHG producers (as a share of the world's total).
SA contributes 3% of net GHG emissions worldwide
Per capita carbons emissions – highest in the developing world – and on par with countries like Germany
(Far higher than IBSA and China countries)
SA is responsible for 39% of Africa's emission

Questions around climate equity

Van Schalkwyk: 'while DC's join the 3 course dinner late, only in time for dessert, we are still expected to split the entire bill"
Historical emissions – contributed 1% of global GHG from 1950-2000
Current level of development and economic growth – not only of SA but also the region (Africa represents 11% of worlds population, but is responsible for less than 3% of total emissions
40% of SA's emissions are exported

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The importance of SA to the region:

SA's NB role as economic regional hub
SA constitutes 2/3 of SACUs GDP
SA constitutes 60% of all intra-SADC trade (trade in sectors like mining, electricity, oil and gas)
Supplies electricity to a number of its neighbours - Eskom produces 45% of Africa's electricity
30% of households do not yet have access to modern energy services, on the other hand energy sector is responsible for 75% of our GHG emissions
1% point slowdown in the SA growth rate leads to a one-half to three-quarter % point slowdown in the rest of SSA

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Why does SA emit so much carbon dioxide?

Make up of GHG emissions in SA

- CO2 = 80% of emissions: energy and industry
- Methane = 11.4% of emissions: livestock, agriculture, fugitive emissions and waste
- Nitrous oxide = 5.5% of emissions: agricultural soils through use of fertilizers, manure

Sectoral make-up: energy and industry.

- Historical mineral-energy complex –SA resource extraction , smelting and refining industries carbon intensive
- Also transport and residential (27% and 26% respectively)
- Interesting to note: commercial and service sector contributes very little to GHG but is responsible for 2/3 of SA's GDP/ half of SA's employment

The use of coal in the energy sector

- As a source of energy, coal makes up 74% of South Africa's energy mix
- SA is a major producer and exporter of coal – high grade and low grade
- Coal is SA's 3rd largest mineral export
- Coal is in abundance- massive reserves for future use
- Cheap, highly subsidised (1/3 of price of OECD countries) – important comparative advantage - investment
- Energy contributes significantly to SA's GDP annually – therefore critical sector for maintaining ambitious eco growth projections – also contributes to a significant number of jobs

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COAL for electricity generation/ production:

•Eskom, SA parastatal dominates electricity generation in SA – 90% in 2008
•Electricity through coal-fired power stations
•1/3 of electricity is consumed at household level, 2/3 by business and industry
•Mass electrification roll out since 1994
•Low-priced energy is at the core of the country's growth and development policy. Also imperative for the region Alternatives to fossil fuels are expensive and often cannot produce the base-load capacity needed

However:
•Accounts for 40% of SA's total emissions
•Eskom power stations some of the dirtiest in the world – 223.6 million tonnes of CO_2 in 2008 (staggering when one considers Shell Int. only produces half of this amount)
•Worrying in light of Eskoms plans to double electricity production by 2025

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COAL for industrial usage:

Used for numerous industrial processes, including for the production of steam for heat-based processes, coke in the steel industry
Coal-based synthetic liquids – Sasol's coal to liquid (CTL) plants
Secunda I and III produce 25% of the country's total liquid fuel requirements

However:

Accounts for 21% of SA's emissions
Secunda Plant one of the dirtiest utilities in the world
73 million tonnes of GHG in 2008

Climate vs. development debate

- Under the current administration, SA's primary focus is poverty alleviation and job creation
- SA, for example, continues to strive to fulfill its development needs (AsgiSA) ie. Universal electrification by 2012 (30% of population still is without reliable and modern energy access)
- Large polluter from coal use – which is an integral part of this development
- Therefore SA is faced with a strategic dilemma of how to balance its interests in the areas of development and poverty alleviation, energy security, international competition and the international pressures to curb GHG emissions. Trade-off??
- Mitigation is therefore a challenge of making development more sustainable ALSO sustainable development also has the potential to contribute to mitigation

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South Africa's responses and broader policy framework to climate change:

2006: South Africa completed a scenario's exercise, the Long Term Mitigation Scenarios (LTMS)

What is required to limit global temperature from rising above 2 degrees C?

- Aim to identify the most effective mitigation options available to the country based on the best available scientific information.
- Use of energy and macroeconomic models to explore the consequences of various policy interventions aimed at reducing GHG.
- Investigation also to determine what its risk threshold should be
- What contribution it should (and can) make to global efforts to combat climate change
- How it can simultaneously seize opportunities of the global transition to a low carbon economy
- Long-term Aim: formulate a long-term climate policy, which will establish a framework for climate action
- Result: various scenarios, strategic options, mitigation potentials and cost-effectiveness of different interventions.

LTMS consists of 6 policy pillars:

1. **GHG reductions and limitations:** Commits the government to a 'peak, plateau and decline' trajectory for the country's future GHG emissions:
an emissions peaking between 2020/25, then stabilizing for a decade, before declining in absolute terms towards mid century
2. **Analysis on scaling-up and strengthening current initiatives**: implication of interventions through regulatory instruments – including the use of economic instruments such as carbon tax, tradable permits, vehicle tax. Manuel (2008 budget speech) announced a new levy of 2c/kWh on electricity generated from coal. Also discussed creating markets for such changes? economic incentives for use of RE's in electricity generation and for cleaner production technologies,
3. **Implementing a 'Business Unusual' call for action** – focus on energy-intensive sectors that in the foreseeable future will need to meet mitigation targets. In setting energy-intensity targets for intensive sectors – how will SA retain its competitive advantage; re-focusing industrial policy and investment strategy on low- and zero-carbon sectors of the economy.
4. **Preparing for the future** – expanding infrastructure to deal with supply issues – diversify energy sources? Again, provide economic incentives for increased use of RE's, profitability of RE's for private sector
5. **Adaptation of vulnerable sectors:** calling for National Adaptation Strategy
6. **Aligning and coordinating national climate policies and actors:** cross-cutting issues that cannot be dealt with in isolation. Climate change needs to be mainstreamed into all ministries (S&T, energy, transport, development, foreign affairs, DTI etc. It also needs to be spoken about at all levels – from the community level upwards. SA response must include wide variety of players. Business, municipalities, scientific and academic communities, financial institutions etc. Role that Trevor Manuels National Planning Commission can play in this regard?

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Policy process: from scenarios to implementation

July 2008, Cabinet considered the outputs of the LTMS work and adopted a very ambitious National Climate Framework - laying out government's vision, strategic direction and framework for climate policy.
Culminated in the 2nd National Climate Change Summit: March 2009.
Translate these findings into a white paper
and then eventually in 2010 into a green paper - hopefully be translated into a legislative, regulatory and fiscal package for implementation

These outcomes have implications at the national and international level:
Nationally, LTMS laid the basis for a robust climate policy - Implications for industry and production. However no official legislation – but it will underpin future legislation
Internationally, it has provided scenarios that can inform negotiating positions. Attempt to show ambitious leadership in developing world around mitigation responsibilities.
- seek convergence between our national and international policy responses and activities…PTO

There are obvious contradictions in South Africa's future energy actions:

2008 SA experienced national energy shortages in supply and distribution

Eskom embarked on R343 billion project over next 5 years to:
a) upgrade moth-balled coal-fired power plants
b) expand the country's electricity infrastructure through the new generation of new coal power stations in Limpopo and a new petroleum refinery in the Eastern Cape - due to come online in 2013.

Sasol also plans to construct a new 80,000 barrels per day CTL plant in Limpopo

Also if one analyses SA Annual Budget (2008/2009), proportion dedicated to coal alternatives is minimal. The gov/ private sector have not invested significantly in R &D in renewable energy as much as in coal, hydro and nuclear power stations

SA energy mix

- Diversifying SA's energy mix/ reducing SA's dependency on coal (currently 75% coal, 12% oil, 3% gas, minimal RE's)
- Realistically – SA Still use coal: coal efficient technology and use of CCS
- Answer would include a combination of responses - the use of nuclear, RE's (solar, wind, biomass and imported hydro) – NB policy responses to encourage REs
- 2003 White Paper:10 000 GWh of electricity from RE sources by 2013 (Only achieved 5% of this target). Post 2012 gov looking at pursuing a higher energy target. Most likely large-scale roll-out of concentrated solar power
- REFIT programme – RE feed-in tariff –Eskom is obliged to purchase power from licensed RE generators
- Eskom subsidising a percentage cost of consumer purchase of solar-panel heaters. Provide consumers with a direct rebate

Considering SA energy mix: what should inform our energy path going forward:

SA needs to base its decision on ALL of the points below:

1. Energy security – reliability on a single primary source of energy. Coal volatile to international trends and fluctuations
2. Sustainable energy trajectory – moral issues regarding the high externality costs of coal mining, high emissions, usage of water, environmental impacts etc
3. Energy complex – associated economic value – affordability, domestic access to coal, uranium, solar radiation, reliability and intermittency of REs (what energy source can provide us with base-load electricity? How efficient is it?)

SA, or any developing country, cannot make a decision only on the environmental impacts – but needs to weigh up all three. There should not be a trade-off between the three points indicated above

Looking towards the SADC region: especially for electricity generation through renewables, and as a market for REs

The region contains a large amt of natural resource beyond the border:

- Hydroelectricity from Cahora-Bassa (Mozam) – HVDC system
- Westcor's Great Inga Dam project – DRC
- Highly concentrated solar energy in all SACU countries
- Natural gas, Mozam (to Sasol)
- Biomass opportunities

Still substantial challenges before cooperation on RE's are realised: political instability issues, region does not manufacture or produce clean technologies (relies on imports – therefore very expensive), region lacks the expertise and skills for maintenance, monitoring of these facilities, governance issues. Risk of hydro dependant economies – Climate change – bring increase in frequency of droughts

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SA in the international climate negotiations:

SA has made headway in terms of its international position
- in the past been a spokesperson for the developing world more broadly, as well as for the Africa Group.

Indentifies with other emerging economies – China, India, Brazil – given similar mitigation and adaptation challenges

However, given its emissions profile, SA is also party to MEI, negotiations with EU, G20
Comparison in emissions profile – China, India and the like

Strong stance on adaptation issues – pushing the West for greater commitments to adaptation financing, tech transfer
Climate equity and climate justice
SA has committed to take responsible actions but not to commit to any binding targets

Urgent need for domestic policy to come in line with international policy: Is SA's negotiating position consistent with its National policies and Strategies? (does it identify the compromises it may be required to make and the mitigation commitments it might undertake as a result?)

In conclusion:

- SA's climate question is both energy, carbon and a development question its response needs to be motivated by these concerns – its energy profile and access, its energy security, sustainable development and poverty eradication imperatives.

  Complicated by SA energy-mineral complex

  Given international mitigation pressure and related trading scenarios, South Africa will inevitably need to redefine its competitive advantage from attracting energy-intensive sectors on the basis of cheap but dirty electricity, to building a new advantage around climate-friendly technologies and systems.

Does SA government have the political clout to take on Eskom and Sasol? Can this be done without jeopardizing our economic growth plan? Change of industrial strategies and policies? Delicate balance between its national, regional and international interests

In this regard, SA lacks a nationally INTEGRATED energy policy that should further accelerate the demonstration, development and deployment of low-emissions technology – including RE's, smart grid systems and energy storage, refurbishing power generating facilities and cogeneration, sustainable mobility, advancing and CCS mechanisms