Energy and climate for development

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Contents

• SA emissions scenario
• SA Policy scenarios
• National approach – LTMS
• Local approaches
• Achieving buy-in
• NAMAS and dealing with future emissions
• Implementation issues

Reference: Many slides from the Energy Research Centre LTMS team & the KuyasaCDM team
South African emissions profile (estimated shares, 2010)

• Vast majority of emissions from the energy sector
• Mainly from coal – electricity, industry, synthetic fuels manufacturing process
• Smaller share from crude-based liquid fuels
• Therefore key mitigation problem is tackling coal, especially electricity
South Africa also has significant development challenges.
Climate policy process

- 2005 – national climate policy summit
- 2006-8 – Long Term Mitigation Scenarios process
- 2008 – Cabinet considers LTMS and adopts strategic direction that emissions should peak, plateau and decline
- 2009 – National Policy Summit initiates current policy process
- 2009/10 – SA proposes action of 34% deviation below BAU by 2020, conditional on support and a fair, binding and inclusive agreement
- in the meantime, national discussions, etc.
- also, the Copenhagen targets conditional on support, a legally binding agreement etc
Overview of the LTMS process

• Long-term view of economy-wide emissions – 2003-2050 – platform to project BAU emissions, and think about, and quantify, alternatives

• Two key components:
  – Technical – modeling – essential, but unimportant without political component
  – Political – stakeholder involvement, in process as well as expert capacity

• Consultations, followed by many technical iterations, followed by high-level consultations

• Cabinet endorsement, flowed into current policy process. The LTMS is NOT policy, and is NOT a strategy.
LTMS Technical Process

• Develop a Business as Usual baseline
• Define an aspirational emissions reduction scenario – ‘Required by Science’
• Explore the mitigation potential of all feasible interventions, by sector, and quantify these
• Combine these into a number of economy-wide mitigation scenario
• Iteration and review by a ‘Scenario Building Team’ – experts from range of stakeholders
BAU – Growth Without Constraints – emissions grow around 4 times by 2050 – huge gap
From Scenarios to Action

- LTMS scenarios, and wedges, point to potential areas for national action – they identify areas with most potential and least cost, and give some idea about timing – short, medium and long-term.

- Specific measures need more detailed analysis to develop NAMAs, within this context / framework – updated cost and emissions data, coherence with national developments, policy processes, planning frameworks, etc.

- Options for implementation need to be explored, within existing policy / institutional context, also potential for institutional innovation, and international context.
<table>
<thead>
<tr>
<th>NAMA</th>
<th>Discounted cost (2011)</th>
<th>Mitigation</th>
<th>Simple carbon cost</th>
<th>Finance</th>
<th>Technology</th>
<th>Capacity-Building</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fast Start</strong></td>
<td>955 M USD</td>
<td>53 Mt</td>
<td>18 USD / ton</td>
<td>REFIT subsidy</td>
<td>Limited – wind integration issues. Solar – demonstration plant.</td>
<td>REFIT regulation, grid management</td>
</tr>
<tr>
<td><strong>Wind</strong></td>
<td>3355 M USD</td>
<td>505 Mt</td>
<td>7 USD / ton</td>
<td>REFIT subsidy</td>
<td>Limited</td>
<td>Technical and regulatory</td>
</tr>
<tr>
<td><strong>Solar</strong></td>
<td>1891 M USD</td>
<td>109 Mt</td>
<td>17 USD / ton</td>
<td>REFIT subsidy</td>
<td>Significant opportunities for collaboration / technology</td>
<td>Development of technological</td>
</tr>
</tbody>
</table>
Other possible NAMAs

- Rapid bus transport and fuel switching
- Industrial cogeneration
- Industrial efficiency
- Standards and labeling
- National Sustainable Settlements Facility
Why sustainable settlements?

- Health benefits
- Affordability - lower cost energy services
- Employment opportunities
- Lower peak demand for electricity
- Local participation in decision making
- Green House Gas mitigation

- Where is it better to invest upstream in the concrete and steel of power stations or in people and their homes? Somewhere in between… I think…
NSSF

- Blend of carbon (either DSM or NAMA) and EEDSM finance flows
- Located within the Development Bank of Southern Africa
- Pilots already undertaken
- Buy-in at local, developer and city level as well as at high institutional level
- Dealing with energy upgrades in new and existing publicly funded structures
Ceiling installation - Public Works
Suppressed demand

- Energy demand is constrained as a result of poverty or lack of infrastructure
- Suppressed demand can be included if proof of livelihoods improving can be shown
- Paragraph 46 of the Modalities and Procedures: “The baseline may include a scenario where future anthropogenic emissions by sources are projected to rise above current levels, due to the specific circumstances of the host Party.”
- Restated in the COP 15 outcomes: para 35 of “Further guidance related to the CDM.” Encourages the EB to further explore
- Precedent AMS ID and Kuyasa CDM project #0079
Energy services and energy consumption – business-as-usual

- Energy Service
- Baseline Energy
Energy Services and Consumption that take Suppressed Demand for service into account

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Energy Service
Baseline Carbon emissions
Energy Service intervention
Carbon emission after clean energy service intervention
A are Existing Emissions
B are Existing Emissions + Future Avoided Emissions

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energy service

energy consumption

time

A

B
The big picture - strategic points in the SA electricity transition – need to start now

Initial programme
Scaling up

full transition away from coal

existing coal plants
planned coal plants
total demand
Principles

- Real and measurable emissions reductions
- Include the suppressed demand for warm water and space heating services
- Reduced requirements for monitoring and verification
Limitations to implementation

• Policy shopping lists and window dressing…
• Renewables targets …
• REFIT – no PPAs.
• EEDSM – ability to recoup losses/incentivise conservation.
• Corporate culture - the big centralised thing versus decent.
• Development/environment and climate - crowding out… New alignments with priority issues.
• Leadership – resources – capacity.
• Governance – players, referees and conflicted interests.
• Fiscal implications of fossil fuels and LDCs…
• Institutional readiness and investment in process…