Technical analysis of four possible NAMAs in South Africa

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Possible NAMAs in South Africa, incremental costs, relative reductions and sustainable development benefits

- South Africa has studied its mitigation potential
- Some further work on possible NAMAs to realise some of that potential
- Understand better the support required, the mitigation result and the benefits for local sustainable development
- Four examples – electric vehicles, solar power, sustainable housing, wind

Rollout of electric private passenger vehicles in South Africa

Description of NAMA	• Production and use of private passenger electric vehicles • 10% penetration of electric private passenger vehicles by 2015, increasing to 27% in 2020, 60% expected by 2030		
GHG reductions from baseline ($MtCO_2$ eq)	2011-2020	2011-2030	2011-2050
	10.6 Mt	92.3 Mt	450.0 Mt
International support sought	• Funding to cover incremental costs of US$344.7 billion from 2011-2050 to manufacture electric vehicles. It excludes costs for infrastructural reform. • Technical support in establishing battery charging stations and battery swapping facilities.		
Indicators to track implementation of action	• Sales of electric vehicles to assess take-up by consumers. • Sales of petrol and diesel vehicles • Sales volumes of petrol and diesel-displacement of vehicles that use these fuels.		
Information which would add value	• Prototypes of wholly South African-designed electric vehicle models have been developed • SA's Council for Scientific and Industrial Research has extensively researched lithium batteries; current studies are evaluating feasibility of developing and producing batteries locally • Sustainable development benefits of the NAMA include lower local air pollution, employment creation and potential balance of payment benefits.		

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Incremental funding of 5GW of CSP up to 2020

Description of NAMA	• Two phases: Prepare (2010-2012) and rollout (2013-2020) • First plants coming into operation from 2015 and 5GW capacity online by 2020 • Incorporate plan into IRP, conclude IPP/solar park regulatory framework and establish funding mechanism		
GHG reductions from baseline ($MtCO_2eq$)	2011-2020	2011-2030	2011-2050
	232 Mt	663 Mt	1518 Mt
International support sought	• Finance – $2 billion by 2020 as grant / concessional loan to the REFIT or Solar Park • Technology – initially parabolic trough, then CSP central receiver and dish designs. Water saving technology will become important • Capacity – REFIT & independent systems operator capacity support required		
Indicators to track implementation of action	• Establishment of funding mechanisms - institutional • Finance disbursed to utilities in CSP programme • Capacity of CSP installed through programme • Electricity produced from funded CSP installations		
Information which would add value	• Pioneering RE in electricity system, developing industrial capacity in CSP as a basis for further expansion • Incremental employment benefits, especially with localisation • Regional development, local air pollution benefits		

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Financing upgraded energy specifications of new low-income housing

Description of NAMA	• Financing the inclusion of solar water heaters and thermal efficiency measures in one million new-build low-income houses by 2020		
GHG reductions from baseline ($MtCO_2eq$)	Annual	2011-2020	2011-2030
	3Mt	30Mt	95Mt
International support sought	• Development of fund, programme and institutional capacity: €1m • Capital costs of interventions: US$2.8 billion		
Indicators to track implementation of action	• Number of new-build houses including upgrades • Number of low-income housing solar water heaters remaining in operation in 2020/30		
Information which would add value	• Significant health, safety and energy service delivery co-benefits through delivering improved quality housing to poor households • Education and awareness-raising around clean energy issues in a sector of the population anticipated to drive emissions growth into the future • Currently in advanced design phase, led by the Development Bank of Southern Africa		

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Incremental funding of 10 GW of Wind Power up to 2020

Description of NAMA	• Provide incremental financing for 10 GW of wind power integrated into the South African electricity system by the beginning of 2010 • 3500 MW to be developed by state utility Eskom; 6500 MW to be developed by IPPs • Incorporate plan in the IRP, develop revised REFIT funding model, establish funding agency and fund.
GHG reductions from baseline ($MtCO_2eq$)	2011-2020: 92 Mt; 2011-2030: 329Mt; 2011-2050: 469Mt
International support sought	• Full incremental cost of programme will be USD 3.4 billion (discounted at 8% to 2010
Indicators to track implementation of action	• Establishment of funding mechanisms - institutional • Finance disbursed to utilities in wind programme • Capacity of wind power installed through programme • Electricity produced from funded wind installations
Information which would add value	• Pioneering RE in electricity system, developing industrial capacity in wind power as a basis for further expansion • Incremental employment benefits, especially with localisation • Regional development, local air pollution benefits

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