



Kenya's Climate Change Action Plan

Low-carbon analysis

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Presentation contents

1. Background and aim of the low-carbon scenario analysis
2. Highlights of the low-carbon scenario analysis:
 - GHG emissions reference case
 - Examples from the agriculture and forestry analysis
 - Examples from the electricity sector analysis
3. Next steps & lessons learned

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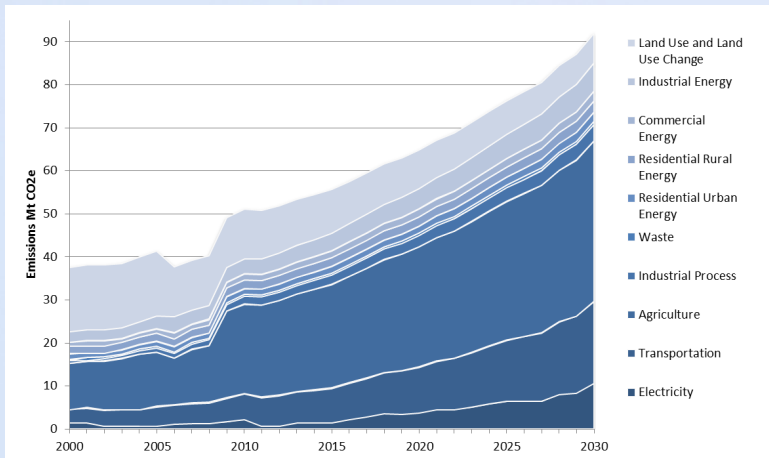
Mitigation subcomponent of Kenya's Climate Change Action Plan

- Low-carbon scenario assessment of potential NAMAs and REDD+ actions across six sectors of UNFCCC, Article 4.1: energy, transport, industry, waste, forestry and agriculture
- Identifies potential emissions abatement actions that can bend down emissions from the proposed reference case emissions
- Work builds on priorities and planning processes of the Government of Kenya
- Local validation meetings to engage Kenyan experts and stakeholders to ground-truth and validate assumptions
- Analysis undertaken by a consortium of IISD, ECN and ICRAF



Output: Low-carbon scenario assessment

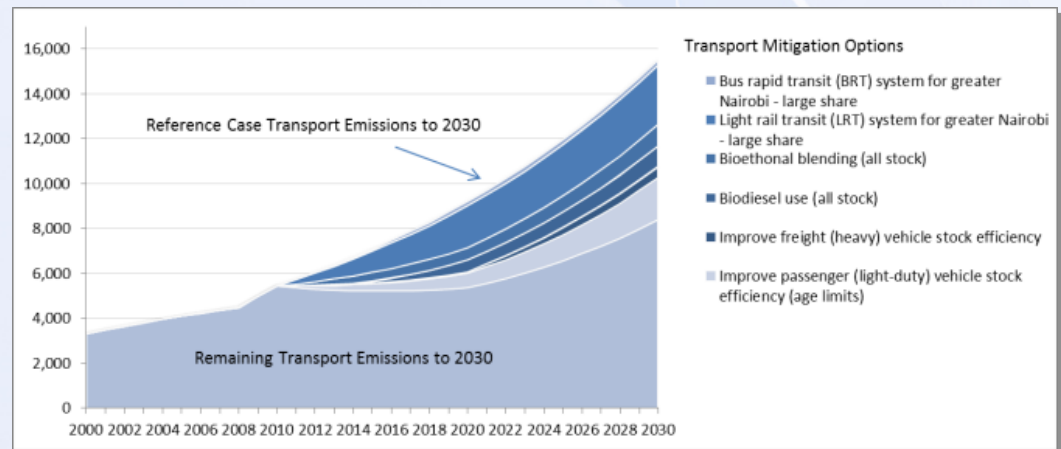
1) Emissions projection to 2030 (reference case / business as usual)



2) Wedge analysis: Demonstrates how low carbon options / potential NAMAs can bend down emissions

3) Qualitative analysis of sustainable development impacts of low-carbon options

4) Concrete next steps for the Climate Change Action Plan



Potential added value of the low-carbon analysis

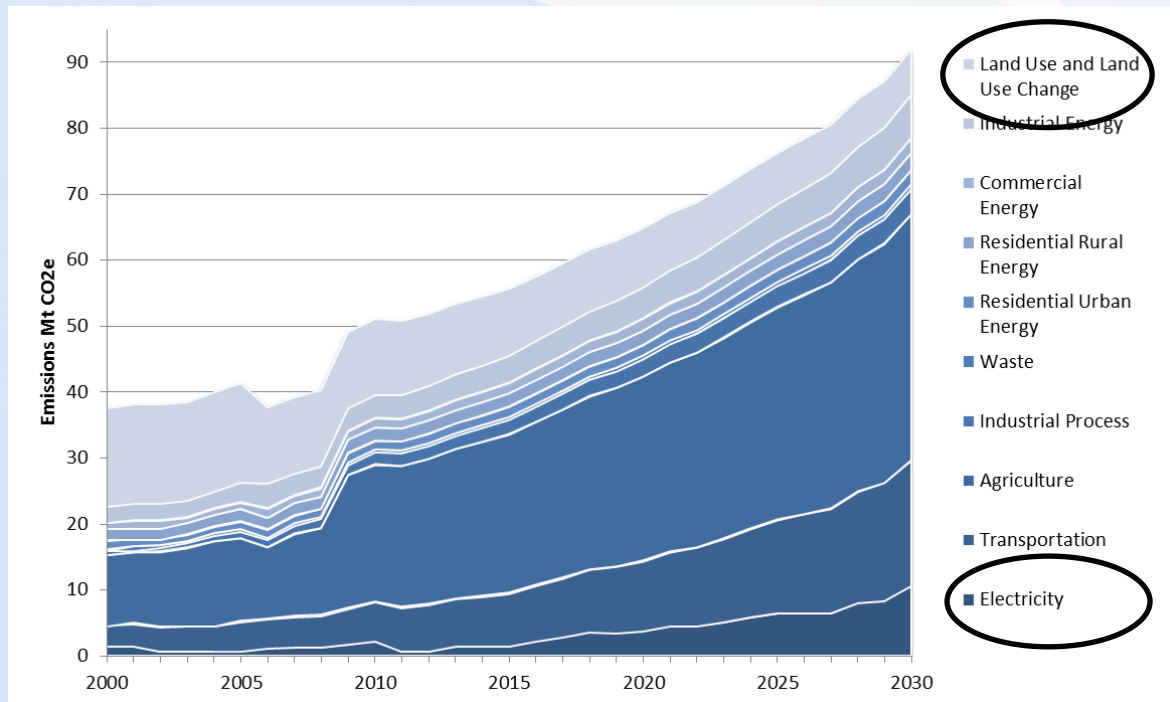
- Provides Government of Kenya with an overview of GHG emissions and low-carbon development opportunities in all sectors of the economy
- Provides an analytical and evidence base for identifying and prioritizing mitigation actions / NAMAs
- Can be used as supporting information in proposals to international donors and other financing organization
- Can be used to mainstream low-carbon considerations into development planning
- Stakeholder involvement builds capacity and buy-in



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Draft GHG emissions reference case



DRAFT DATA – DO NOT DISTRIBUTE, CITE OR QUOTE

Total Emissions rise 3% annually

- 50.9 MT in 2010
- 91.8 MT in 2030

Note: Draft data – do not cite or quote

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Low-carbon options in forestry: Reforestation

Current situation: Forest cover is currently at 5.9% (FAO, 2010), but still declining. Only half of Kenya Forest Service's annual planting target of 6,000 ha/year achieved due to lack of resources.

Low carbon scenario: GoK target of 10% tree cover amounts to 4 million ha of land. Assuming half that target is achieved by 2030.

Development benefits: Improved groundwater retention; provides source of fuelwood, charcoal, and medicines; potential for enhancing biodiversity.

Abatement potential & costs: 2.0 Mt CO₂e in 2015, rising to 30 Mt CO₂e in 2030. Abatement costs of \$404.69/ha/year and \$11.66/t CO₂e/year.

Adaptation co-benefits: Foresting water catchments generates and sustains water supplies, aids hydropower generation, and helps prevent flooding. Also reduces erosion and sediment discharge in rivers, and improves the health of soil.

Feasibility of implementation: Key barriers are weak government capacity and land tenure issues.

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Low-carbon option in electricity: Geothermal power

Current situation: 13% of electricity generation from geothermal power today, slow growth rate in the past, but significant efforts to scale up growth including establishment of GDC and SREP

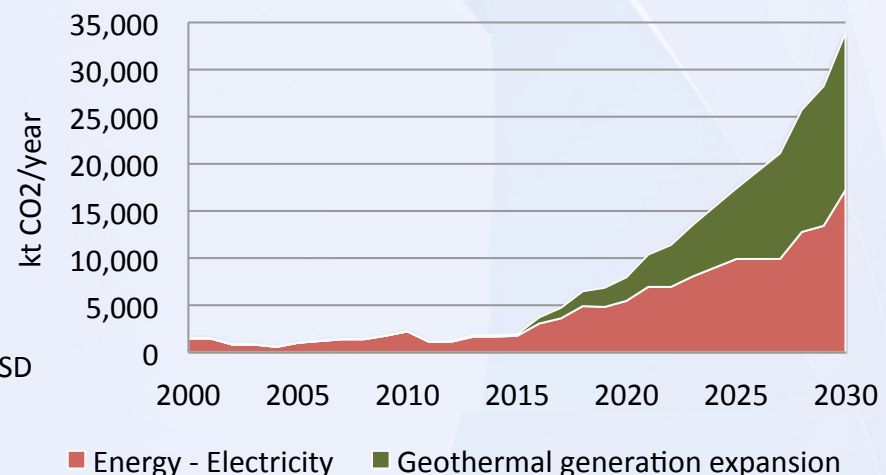
Low carbon scenario: geothermal generation grows from a business-as-usual projection (2.7 GW in 2030) and exploits the full capacity forecast in the Least-Cost Power Development Plan (5.5 GW in 2030)

Development benefits: Improved energy security, lower oil/coal imports, provides stable base load electricity as basis for economic growth, low environmental impact

Abatement potential & costs: 16,600 kt CO₂/year in 2030¹; marginal abatement cost of -12 \$/tCO₂ today and -22 \$/tCO₂ in 2030¹.

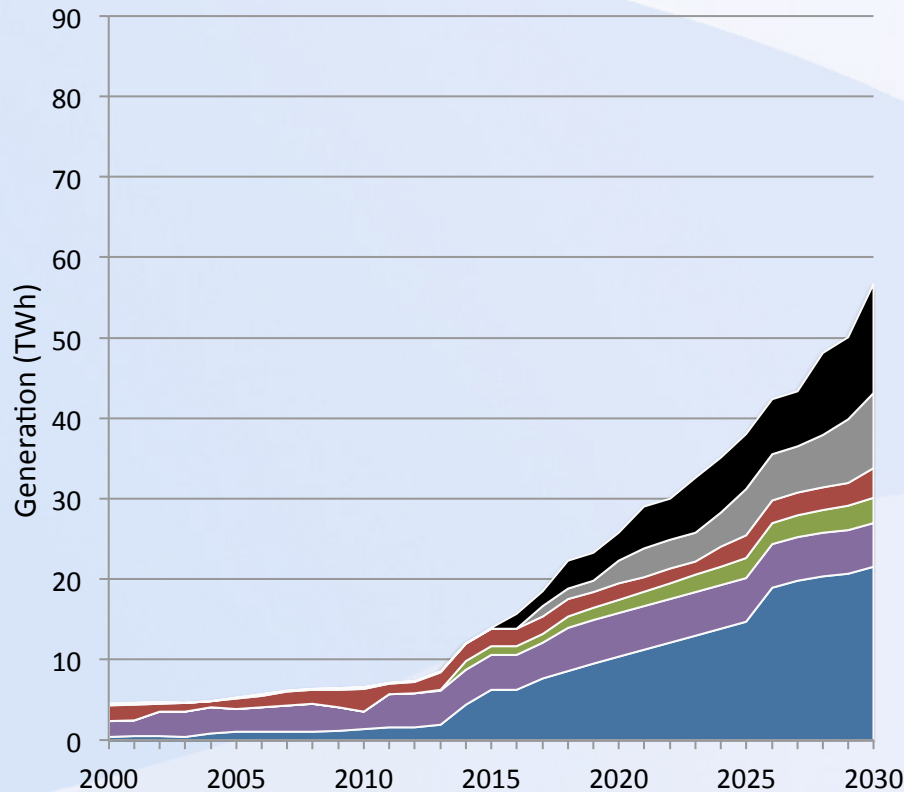
Adaptation co-benefits: less vulnerable to changing climate than hydropower

Feasibility of implementation: Needs significant up-front capital for drilling. Need for guarantee or insurance for IPPs

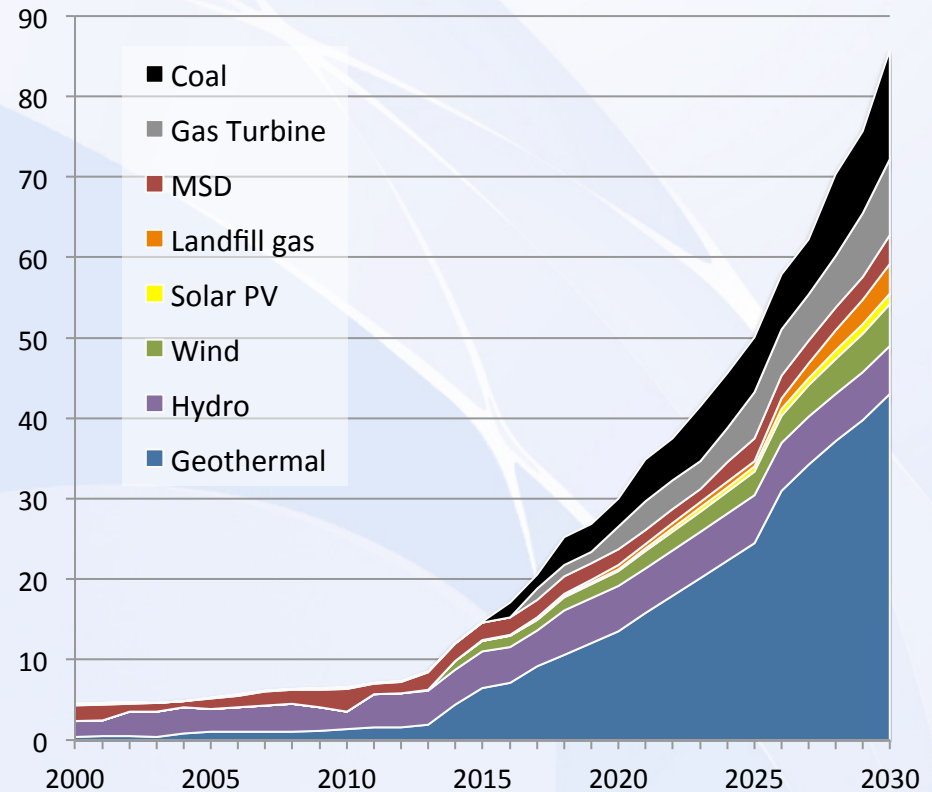


¹ based on own calculation of green growth effectively replacing coal and MSD

Electricity generation: BAU versus low-carbon scenario



BAU scenario






































Low-carbon scenario



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Visualization of sustainable development impacts

Low-carbon options	Abatement potential and costs		Economic Impacts			Environmental Impacts	
	Abatement potential (Mt C O2)	Abatement costs (USD/t CO2)	Energy security	GDP growth	Employment	Environmental impact	Adaptation impact
<div><div><div> High Positive</div><div> Positive</div><div> Neutral / Minor impact</div><div> Negative</div><div> Uncertain</div></div></div>							
Electricity generation							
Expanding geothermal electricity generation	16.6	-12					
Expanding wind power	1.6	8					
Expanding hydro power	0.4	-24					
Distributed solar PV	1.0	210					
Electricity generation from landfill gas	2.8	-2					
Clean coal	1.9	0					

Visualization approach developed under CLEAN / LEDS GP

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Next steps

- Finalize low-carbon scenario assessment and technical reports for all sectors by June 2012
- Develop summary for policy makers and concrete actions for the Kenya Climate Change Action Plan
- Validate results with Government of Kenya representatives and other stakeholders
- Potential basis for prioritizing low-carbon options / NAMAs
- Basis for work with Ministry of Planning on mainstreaming low-carbon and climate resilience considerations into the next Medium Term Plan

Reflections on approach and preliminary results

- There are real win-win opportunities for low-carbon development
- Reference case for GHG emissions needs to be revisited regularly due to uncertainty about structural changes in the economy (industrialization, urbanization, impact of oil discovery, etc.)
- Modeling low-carbon growth instead of “lowering emissions versus BAU”
- Lessons learned on tailoring stakeholder consultations to different target groups

Thank you for the attention!

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