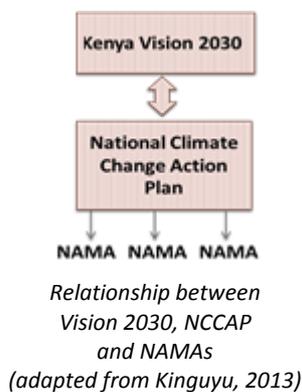


Kenya develops a NAMA to accelerate geothermal electricity development through increased private sector participation

Accelerating geothermal power generation was identified as a priority mitigation action in the context of the Kenyan National Climate Change Action Plan (NCCAP), launched in 2013. The NCCAP is a holistic plan to implement the National Climate Change Response Strategy (NCCRS), which was developed in 2010. The NCCAP aims to ensure that Kenya takes steps to reduce vulnerability to climate change and adopts a low-carbon development pathway. This NAMA proposal is a concrete step towards the acceleration of geothermal development and associated reductions in GHG emissions. The Energy research Centre of the Netherlands (ECN) and local partners have supported the Kenyan government in developing this NAMA proposal.

National context and rationale



According to the Business As Usual (BAU) scenario in the NCCAP, geothermal will continue to expand to 2,500 MW by 2030 (NCCAP, 2012). There is however an accelerated growth scenario which will lead to 5,000 MW of installed geothermal power by 2030. If this accelerated growth does not materialize, Kenya is likely to explore other options for power production, including developing more of its domestic coal resources (Falzon, 2013) than provided for in the Least Cost Power Development Plan, with a corresponding negative climate impact. The NAMA aims to support and expand on existing efforts undertaken by the Government of Kenya in the geothermal sector to create an enabling environment for a significant up-scaling of private investment necessary to achieve the desired accelerated growth.

Stakeholders and their involvement

This proposal was completed in a consultative process involving the key stakeholders in the sector. The process involved a detailed background study, several phases of iterations on the concept during stakeholder workshops and in-depth collaboration on the current proposal. Stakeholder consultations and further analysis suggested that the key challenges faced by the private sector in developing geothermal power could be addressed broadly by channelling additional support, facilitating its absorption and contributing to the development of an enabling environment for private sector participation.

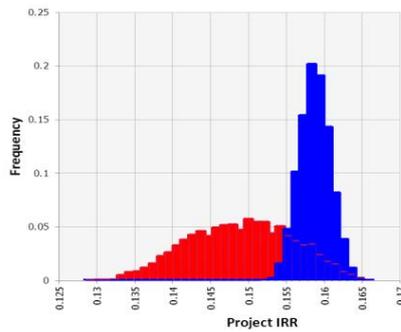
Barrier analysis and NAMA design

Research in preparation of the NAMA proposal has revealed that several key challenges and barriers exist that hinder private sector investment (Falzon et al., 2013). These barriers relate predominantly to financial issues and investment risks as well as technical and human resource constraints. The NAMA thus includes four instruments focused on addressing these barriers by delivering financial support and increasing capacity to facilitate increased private sector investment: drilling risk mitigation instruments, a premium payment mechanism, IPP engagement and transaction support, and a national geothermal capacity building programme.





Impacts: GHG and co-benefits



The financial instruments will improve (blue) the existing (red) return profile for geothermal investments according to a Monte Carlo simulation of the instruments

Approximately 1000 MW of geothermal developments could feasibly be enabled by the NAMA by 2020 and the corresponding total emissions reductions are estimated to be approximately 4.60 MtCO₂ per year in 2020.

The NAMA will however also have significant economic impacts, including contributing to lower average electricity tariffs, greater energy security and improved balance of trade. The fast-tracking of geothermal development is a top priority for the Government of Kenya, who recognise the potential contribution of geothermal energy to achieving Kenya's sustainable development aspirations.

Lessons learned and next steps

The NAMA concept has been validated by the key stakeholders in the sector, including the Ministry of Energy and Petroleum (MoEP), the Ministry of Water, Environment and Natural Resources (MEWNR), the Geothermal Development Company (GDC) and KenGen. The detailing phase of the full proposal is currently underway, and it is expected that this phase will be completed by the end of 2013. Broad national stakeholder involvement, from public and private sectors as well as multilateral organizations, was critical for the scoping and development of a NAMA that will play a catalytic role for geothermal development in Kenya. This inclusive process not only improved the relevance of the proposal, but also created momentum behind the set of proposed instruments. After completion of the proposal, validation and official approval and adoption of the NAMA will be sought within the Government of Kenya, and with international support the NAMA implementation will commence.

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