Should Africa take the renewable energy path?

**Editorial**

Modern energy services are essential for reducing poverty. Countries need energy to increase economic production, which improves livelihood options for women and men. Energy is also needed to increase agricultural productivity, provide clean water and improve human health, and energy enables girls and boys to go to school.

Increasing access to energy, particularly modern and efficient technologies, is a key challenge for achieving sustainable development. But climate change is complicating the energy situation in many parts of Africa.

For example, changing rainfall patterns have led to droughts, affecting hydropower generation in many countries. And climate change is likely to worsen desertification, reducing tree cover that is already threatened by deforestation in many places; communities that rely on traditional fuels such as charcoal and wood will face an increased burden as forests become scarcer. A further challenge is that fossil fuel energy is a major emitter of the greenhouse gases that cause climate change. Global efforts to reduce fossil fuel use reinforce the need for wider energy options in Africa.

One alternative is renewable energy. Renewable technologies give countries more freedom around their energy choices and reduce dependence on fossil fuels. But renewables in Africa do not always provide energy security.

- Renewable energy resources are abundant but unevenly distributed, causing supply issues for some communities.
- The underdeveloped nature of energy sectors, many of which are inherited from colonial times, and the slow pace of reform have inhibited the uptake and institutionalisation of renewables.
- Despite attempts to reform their energy sectors, many governments have failed to create the right incentives for companies to explore renewable energy options.
- Renewable energy offers multiple benefits, but can still be prohibitive in cost, even for people with disposable incomes.

Scale is a problem; many renewable energy options are pilot experiences, but renewables such as small mini-hydro and biogas digesters need to spread in ways that will reach energy-poor people.

Development priorities are closely associated with the uptake of renewables – especially when these are linked to productive end uses and the welfare and wellbeing of energy-poor communities. The articles in this *Joto Afrika* are rich in information on how renewable energy can serve multiple functions and how energy-poor communities are benefiting – from biogas digesters in Uganda to solar power in Malawi. It is clear that environmental benefits are not the main motivation; improving livelihoods and generating income are the key incentives.

Africa needs policies to expand countries’ renewable energy markets – ones that will translate into real benefits for small-scale entrepreneurs and end users. But the biggest challenge is not the limiting policy environment; the real problem is how to move from the micro to the macro. Africa needs to scale up and out successful renewable energy experiences to a magnitude that transforms the lives of millions of people – people who for too long have lived at the bottom of the energy ladder.

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**About Joto Afrika**

*Joto Afrika* is a series of printed briefings and online resources about adapting to climate change in sub-Saharan Africa. The series helps people understand the issues, constraints and opportunities that poor people face in adapting to climate change and escaping poverty.

*Joto Afrika* is Swahili; it can be loosely translated to mean ‘Africa is feeling the heat’. Please tell us what you think about this eighth issue of *Joto Afrika* and what you would like to read about in future issues. Contact details are on page 8.

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**See also**

Links between adaptation, mitigation and low carbon, or ‘climate compatible’ development, Powerpoint presentation by Fatima Denton, IDRC
Hydropower in East Africa

Research summary

East Africa depends heavily on hydropower for its electricity – it currently supplies around 79 percent of the region’s electricity. But changing weather patterns including the predicted decline in rainfall could be devastating for countries that lack diversified energy sources.

Increased droughts and shorter rainy seasons frequently cripple East Africa’s power sectors, leading to sharp drops in their economic activity. In addition, the ongoing encroachment of agricultural and commercial activities into water catchment areas appears to be making hydropower even more vulnerable to drought and the erratic weather being experienced across the region.

At the same time, the changes in rainfall intensity are leading to increased floods. These lead to the rapid build-up of silt in hydropower dams, reducing the amount of water for electricity generation.

Governments in East Africa have failed to plan adequately to tackle these crises in their power sectors. At present, their response during power crises is to buy emergency thermal electricity to meet the shortfall in power supplies. But this is expensive and the price is unstable; thermal energy is partly linked to world oil prices, which peaked at US$140 (£90) per barrel in September 2008.

To reduce the vulnerability of large-scale hydropower generation to drought and floods, governments and electricity companies need to adopt a more robust and resilient plan to deal with power shortfalls. This could be achieved in several ways.

i) **Diversify the mix of energy sources**

Countries using renewable energy sources to diversify their electricity appear better able to survive the impacts of severe droughts than those relying exclusively on hydropower. For example, Kenya is more resilient than Tanzania and Uganda to drought-induced power generation shortfalls, because Kenya uses a wider range of renewables, including geothermal power, biomass generation and, to a lesser extent, wind.

ii) **Promote proven renewable energy technologies**

East African governments are stuck in a vicious cycle of heavy investment in hydropower; they urgently need to break out of this. Investments in mature renewable energy options, such as geothermal, small-scale hydropower, biomass cogeneration and wind are ideal sources to complement large-scale hydropower generation. They are environmentally friendly and provide additional development benefits, such as jobs and reduced oil import bills.

iii) **Set renewable energy targets**

Renewable energy targets in the countries’ energy policies must be entrenched in power purchase agreements (PPAs). This will induce more private sector-led investment in renewable energy. The PPAs must be attractive to companies, with a pre-determined standard offer (or feed-in tariff) at which the national utility will purchase all energy produced by renewable energy plants.

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**See also**

Large scale hydropower, renewable energy and adaptation to climate change: climate change and energy security in East and Horn of Africa, by Stephen Karekezi,

John Kimani, Oscar Onguru and Waeni Kithyoma, AFREPREN/FWD Occasional Paper 33, 2009


Boiling Point is a practitioner’s journal with household energy and stoves. It deals with technical, social, financial and environmental issues and aims to improve the quality of life for poor communities living in the developing world. Articles are contributed by readers and peer reviewed; the journal is a forum for the sharing of information and experiences on household energy. Boiling Point reaches over five thousand addresses and has around five times that number of readers worldwide.

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