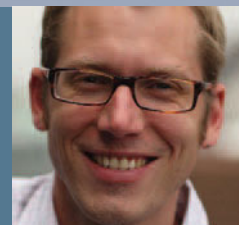


AFRICA'S POTENTIAL TO LEAPFROG

Ansgar Kiene, *right*, Co-ordinator, African Renewable Energy Alliance, and director of World Future Council Africa, on why the continent cannot afford to ignore the vast opportunities presented by renewable energy



The access to energy is one of the cornerstones for social and economic development and poverty alleviation.

In the rural areas of some African countries, the share of people with access to modern energy services is as low as 1 percent. In order to reach these rural poor, sustainable concepts for energy services will have to be developed.

By now, many renewable energy technologies have reached competitive levels with conventional energy sources; they provide social stability through local empowerment and public participation, and protect the environment.

Renewable energies can contribute to a large number of political objectives, such as poverty eradication, a sustainable use of resources, the protection of human health and the ecosystem. This is particularly true for small to medium scale renewable energy systems that provide affordable energy to livelihoods currently defined by energy poverty, and help in creating employment by powering enterprises for rural and urban populations. The shift from



fossil fuels to renewable energies across Africa also has the potential of giving a boost to the achievement of all eight UN Millennium Development Goals (MDG).

According to the International Energy Agency (IEA), almost two thirds of the African population of one billion people have no access to electricity. Only 4 percent of the worldwide produced electricity is generated on the continent.

On average, Africa consumes about 492 kWh per capita compared to the EU, with over 3,000 kWh, and the US, which consumes 7,700 kWh per capita. With a total installed capacity of 103 GW, Africa has less power generation capacity than Germany with 120 GW. Of these 103 GW, 46 percent are located in South Africa and 34 percent in North Africa [JRC 2008].

Despite its fast growing population and economies demanding ever more energy, the high and ever increasing costs of fossil fuels lead to a situation where 80 percent of the African population relies primarily on traditional biomass, including fuel wood or charcoal, agricultural waste and animal dung to fulfil their daily energy needs.

The consequences of the lack of

access to modern energy technologies are severe. Because of the inefficiency of traditional energy forms, the poor often pay higher unit costs for energy in comparison. In many cases, fuels are burned in poorly ventilated or enclosed spaces leading to indoor air pollution.

The World Health Organisation estimates that 400,000 mainly women and children in Africa die of indoor air pollution every year.

Through unsustainable use of biomass, Africa is losing more than four million hectares of forest every year – twice the world's average deforestation rate, which makes the continent even more vulnerable to the effects of climate change.

A large percentage of household incomes is spent on energy for electricity and cooking (diesel, kerosene, charcoal, etc.). At the same time, women invest a substantial amount of productive time in collection and transport of fuel wood.

In order to meet the energy needs of African people in the future, massive new investments are required in the coming decades. The investment decisions will decide upon the structure of their energy systems in the next 30 to 40 years.

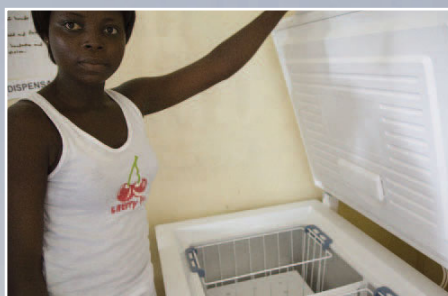
Therefore, we will have to use this window of opportunity to transform the national energy systems from large-scale conventional power plants to

AHEAD ...WITH RENEWABLES

decentralised renewable energy technologies. These offer great economic potential in a big potential market, as the renewable energy resource potential in Africa has hardly been exploited, mainly due to limited policy interest and investment levels.

The rapid expansion of renewable energies across Africa will have a positive impact not only on the African people, its economical progress and the protection of its environment and ecosystems, but also on the world at large, leapfrogging the fossil fuel-based development of the industrialised countries.

Energy services have a significant role in facilitating both social and economic development – energy underpins economic activity, enhances productivity, and provides access to markets for trading purposes. In addition, it enables fulfillment of the basic



Here comes the sun: Above, a solar-powered fridge, and, left, a mobile phone station that works on solar power

human needs of nutrition, warmth, and lighting; and enables access to education, health, information and communication services.

Generally, almost all African countries are going through severe energy crises, as energy demand increases more rapidly than supply. The continent's future energy production and consumption are expected to soar. However, infrastructure is poor and outdated, resulting in high efficiency losses. Deficient power infrastructure dampens economic growth and

weakens competitiveness by having a disadvantageous effect on productivity.

In addition, skyrocketing prices for fossil fuels and huge costs for nuclear power plants (as well as issues of hazardous waste, mining and operations) leave politicians with little alternative to renewable energies. In many cases, large scale hydro power projects are no recommendable alternative considering their negative environmental and social impacts. Since an overall energy scarcity has resulted in high costs for transport and industrial/commercial sector operations in most African countries, sustainable economic growth can only be achieved on the basis of renewable energy provision for industries.

Also, empirical evidence has shown that the diversification of electricity production in African countries such as Kenya or Mauritius, resulted in a stabilisation of the power sector. Typical risks related to volatile prices for fossil fuels and droughts in the case of large hydro power capacity were reduced without high subsidies or increases in the electricity price.

Africa's energy challenges require a radical scaling-up of access which calls for an improved enabling environment, effective policy and regulatory frameworks, improved management capacities and financial services. Keeping in mind the unlimited renewable energy availability, there is a huge opportunity in directing investments into clean, efficient, renewable energy for the growth of a green economy in Africa.

African Renewable Energy Alliance AREA (www.area-net.org)