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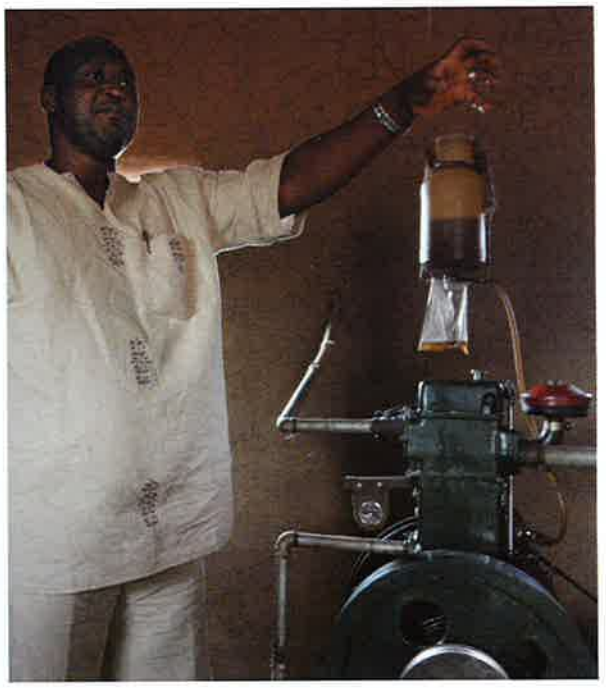

Heart of darkness

Africa's energy gap is vast. If it is to meet the future energy needs of its rapidly growing population, it will need to find radical solutions fast

By Jean-Michel Severino and Donald Kaberuka

Oil prices have been rising for most of the past three years, and global demand/supply conditions suggest they will probably remain high. As oil prices have surged to record levels, protest action has spread across the world – the destabilizing effects of high prices add immeasurably to the burdens imposed by the dramatic rise in food prices.

For sub-Saharan African countries, this trend exacerbates a long-standing energy crisis. More than 30 countries of the subcontinent's 48 are facing an unprecedented shortfall in power supply, and regular blackouts are the norm. Entire regions are without electricity for hours every day; companies have to stop production; school children have to wait till after nightfall to study; and clinics cannot refrigerate vaccines safely. Some 400,000 deaths from respiratory diseases every year are linked to exposure to indoor pollution from 'dirty fuels' in poorly ventilated dwellings. The impact on the continent's progress is very clear, shaving growth for sub-Saharan African countries by 1.8 percentage points, and most notably slowing South Africa's growth to its lowest level since 2001.

The reasons for this crisis are manifold: decades of under-investment in the electricity sector have led to ageing and unreliable power infrastructures. The demographic explosion, together with a rapid urbanization, has strongly impacted energy demand. The IMF recently estimated that currently, sub-Saharan Africa can generate 63 gigawatts of power for a total of 770 million people – roughly what Spain produces for its population of 45 million. Today, strong and generally sustained economic growth on the continent is raising additional challenges for the energy sector. Power supply has been unable to meet with growing consumption in the past 20 years: while GDP growth reached an average of 5%, power supply never rose above 2.9% per year in the same period.

By 2030, Africa's urban population is expected to double. What possible energy projections can be envisaged to meet this dramatically increasing need? The 'business-as-usual scenario', with fossil fuels accounting for more than 80% of current energy, raises critical issues of supply security and carbon impact. Continuation of current trends is not only unsustainable but unacceptable.

Energy lies at the heart of the economic dilemma African countries face today: how can the growing demand for energy be reconciled with longer-term environmental concerns, while coping with inadequate financial resources? In other words, how can energy production be increased while reducing oil dependency?

Africa urgently needs a new energy paradigm, one that will place the continent on a sustainable energy path. But can this be done without sacrificing short-term growth? In order to deal with the more pressing needs, part of the solution must rest in policies that focus on demand, reduce waste and promote energy efficiency – as well as on the supply-side, restructuring the energy sector to attract private investment, and adapting its prices and services to the needs of the populations, in a context where three out of four households still do not have access to this fundamental need.

In the longer term, the diversification of energy sources and greater regional integration are imperative. Renewable energy solutions would help those countries not only diversify their energy supplies away from fossil fuels, but also support long-term economic growth by reducing the energy bill. After all, most African countries are richly endowed with natural resources. Africa only exploits 7% of its huge hydroelectric potential. Investments in this sector, provided that their social and environmental impacts are carefully taken into account, could prove highly profitable for both domestic and regional use.

The establishment of regional electricity networks and power pools is needed to off-take power from hydropower projects such as Rusumo Fall, Inga Hydropower Sites or the Nile Basin Initiative, to supply consumers with low cost renewable electricity. Africa should also take advantage of its great geothermal, wind and solar energy potential. Distributed power generation, which involves locating sources of power near demand, can be developed to optimize the use of local resources such as micro-hydro and biomass.

Finally, one ought to ask whether nuclear energy should not also have its share in the future African energy mix. Should African countries, whose energy needs are surging, not benefit from nuclear energy solutions in addition to renewable ones? Despite high initial investment needs, the use of carbon-free nuclear energy is becoming relatively more competitive. At the least, and if safety issues are properly addressed, this possibility must be considered amongst the many institutional, financial and political innovations needed to fill the gap.

Without doubt, 'business as usual' energy policies would lead to a development impasse. Let us not wait to reach the dead end before exploring alternative paths. EM

Jean-Michel Severino, a former World Bank vice-president, is CEO of the Agence Francaise de Developpement; Donald Kaberuka is president of the African Development Bank; both are members of www.ideas4development.org

Light fantastic
Working by candlelight during a blackout; the long-delayed Bumbuna hydro-electric project in Sierra Leone; the head of the National Centre for Solar and Renewable Energy explains a generator powered by oil from the seed of the jatropha plant in Simiji, Mali

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