

# Energy innovations to bring prosperity to Africa

Africa is on the brink of an energy revolution which will transform lives across the continent

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An energy revolution which will transform lives across the continent is on the cards for Africa if decision-makers can fully grasp and advance the technological and other innovations on our doorstep. Rolling back poverty and boosting growth by getting affordable electricity to all households is now a more realistic possibility than ever before, especially with fast-developing renewable energy technologies to build upon.

## Developmental impact

Access to electricity at household and community level has a developmental impact, especially in the era of mobile and digital communication. Electricity is the first step into the digital age, facilitating improved levels of learning, enterprise, healthcare and communication.

## Culture of efficiency

In many remote areas, electricity in the household also heralds a new culture of efficiency in which people can spend time on more productive activities instead of fetching firewood or water.

Electricity makes a vital contribution to improving to education access and quality, which are, in turn, linked to economic performance, employment and more sustainable levels of population growth.

## Africa vs. America, Europe

According to the African Development Bank (ADB), the continent loses 4% of its gross domestic product due to lack of electricity – with over 645-million Africans living without it.

Electricity use per capita averages 181 kWh in Africa compared to about



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13 000 kWh in the US and over 6500 kWh in Europe.

Electricity is also often unaffordable to many Africans, according to the ADB, which estimates that a person living in northern Nigeria pays up to 80 times more per unit of energy than a resident of London or New York.

## Government expenditure

The urgency of this challenge is clear from the ADB's plan to spend \$12-billion in the energy sector over the next five years and leverage a further \$40 to 50-billion.

In South Africa, government expenditure on energy projects – mainly from Eskom – is expected to exceed R180-billion over the next three years, making up more than 20% of public sector infrastructure spending. In addition, government is also considering potential investment in nuclear power.

## Renewables

Renewable energy sources will be a

cornerstone of this economic revolution, as Africa's potential in wind, solar and hydropower is released by the quick pace of technology.

## Support for investors

We also need to innovate our models of energy generation and distribution, providing legal, policy and technical support for private sector investment and exploiting opportunities in locally-focused energy schemes alongside a national grid.

Engineering studies must integrate closely with social and environmental requirements to ensure that projects proceed smoothly.

Governments must facilitate with a conducive regulatory framework and efficient permitting processes.

Renewable energy's share of South Africa's installed electricity capacity has leapt from zero to 4,5% since 2010, on the strength of government's Renewable Energy Independent Power Producer Procurement Programme (REIPPPP).

## Public-private partnerships

This initiative breaks new ground and proves that renewable energy is both affordable and well-suited for public-private partnerships in Africa.

It also showed that solar and wind power offer unprecedented opportunities to reach remote areas with electricity, without necessarily being linked to a national grid.

South Africa has recently become one of the world's top ten countries generating power from solar PV sources, and is now the largest wind-energy producer in Africa with capacity exceeding 1000 MW.

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