STRATEGIES FOR SUSTAINABLE DEVELOPMENT OF ENERGY IN AFRICA*

By

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Outline

• Introduction
• Energy Access in Africa: Issues, Challenges and Opportunities
• The Way Forward
• Conclusion
Introduction

- Africa is endowed with energy resources of oil, natural gas, coal, hydropower, solar, wind, geothermal, biomass, tidal and wave energy in its territorial waters, which are unevenly distributed.

- For example, oil and gas was mainly in North Africa and the Gulf of Guinea but now in East Africa and parts of Southern Africa; hydropower in Central and Eastern Africa; coal in Southern Africa; Geothermal energy mainly in East Africa; and highest winds in North and Southern Africa. There is also uranium in West Africa and Southern parts of the continent.

- Africa is a continent of 55 countries, covering a land area of 30.1 million sq km constituting about 20.3% of total land area on Earth, and with a population of about 0.9334 billion people.
Introduction

- While Sub-Saharan Africa (SSA) makes up about 14% of the total population of developing countries, it accounts for about 40% of the world population without electricity access.

- About 585 million people in SSA (about 70% of SSA’s population and 58% of Africa’s population) still lack access to electricity.

- Additionally, about 653 million people (80% of SSA population) are relying on traditional biomass for cooking. (IEA, WEO 2010).

- Despite all efforts to date the lack of modern energy services persists in Africa.
Energy Access in Africa: Issues, Challenges and Opportunities

In SSA, only 4 countries have provided electricity access for more than half of their populations – Many countries have not yet reached 15% of electricity access.
Low electricity consumption is a critical issue for Africa.

The world average electricity consumption per capita is 2782 kWh but for Africa it is 571 kWh.

A US citizen consumes 24 times more electricity than an African.
Energy Access in Africa: Issues, Challenges and Opportunities

Access to electricity by world regions - 2009

Source: IEA WEO 2010
35% of SSA’s population without access to electricity are living in 3 countries, namely: Nigeria (76M), Ethiopia (69M) and DRC (59M).

The above 3 countries along with Tanzania (38M), Kenya (33M) and Uganda (30M) make up 52% of SSA’s population without access to electricity.
Energy Access in Africa: Issues, Challenges and Opportunities

**Challenges:**

- Inadequate energy infrastructure on ground and its low local contents.

- Inadequate indigenous human and manufacturing capacities.

- Shortage of funds for the investments in energy development.

- Inadequacy of appropriate national energy policies, plans and laws as well as regulatory mechanisms.

- Lack of good governance, non-transparent government transactions and scarcity of political will at the highest level.
Energy Access in Africa: Issues and Challenges

**Opportunities**

- Africa with a huge population of about 1 billion people is a very large market for energy developers.

- Demand for energy would continue to rise due to demand for improved energy services in Africa. This would require heavy financial investments in energy infrastructure. Opportunities for business in the energy sector are enormous.

- Opportunities exist for national and regional cooperation.
THE WAY FORWARD

The economic transformation of Africa can only materialise when there is adequate and reliable supply of modern energy services namely electricity and fuels for agriculture, industries, transport and for the services sector. This will need the various African nations to:

- Produce a comprehensive scenario-based energy demand projections using modern energy modeling tools on short, medium and long term time horizons and covering the major economic sectors. An example of this is the use of the IAEA developed Model for the Analysis of Energy Demand (MAED).
THE WAY FORWARD

- Produce comprehensive energy supply strategy based on:
  - The outcome of the scenario-based national energy demand projections on all the economic sectors namely: industrial, transport, services and household
  - The United Nation’s Sustainable Energy for All Initiative that calls for:
    * Universal access to modern energy services by 2030
    * Doubling the share of renewable energy in national energy mix by 2030
    * Doubling the energy efficiency thereby reducing energy intensity by 2030
  - Support the trans-boundary projects of the African Union Commission under the aegis of the New Partnerships for African Development (NEPAD) which cover large-scale hydropower projects and regional interconnections.
  - Support regional energy projects that are being conceived and implemented by regional groups like ECOWAS, ECCAS, EAC, SADC and AMU.
  - Utilise reports of studies of the World Energy Council such as Issues Monitor and Energy Leaders Summits.
  - Other national aspirations such as Nigeria’s commitment to be amongst the top 20 strongest economies of the world by year 2020.
THE WAY FORWARD

Review national energy policies to:

- Ensure that remote rural communities are catered for while reforming the energy sectors to make them market oriented with ample encouragement of private sector investments in the development of the national energy infrastructure.

- Adopt appropriate frameworks to promote the practical adoption of new energy technologies. This will include incentives to users and producers of new energy technologies as well as feed-in-tariffs as may be required.

- Strengthen the national energy regulatory frameworks to ensure orderly development of the sector and also to ensure international best practices are adopted for licensing new plants as well as evolvement of both cost-reflective tariffs and practical provisions for indigent groups.

- Ensure that the reviewed energy policies are passed into law by parliaments. This is necessary for the majority of African countries in view of the frequent unnecessary policy changes from one elected administration to the next one.
5. THE WAY FORWARD

- Conduct annual monitoring of the effectiveness of the national energy supply strategy by computing the Energy Development Index (EDI) to enable appropriate adjustments of the national energy strategies. The EDI was developed by the IEA to measure the role played by energy in human development and to better track progress in respective countries' transition to modern energy services. The EDI is composed of the following:
  * Per capita commercial energy consumption
  * Per capita electricity consumption
  * Share of modern fuels
  * Share of population with access to electricity
## The Way Forward

### Africa - Energy Development Index (2010)

<table>
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<tr>
<th>Countries</th>
<th>EDI Rank</th>
<th>EDI Index</th>
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<tr>
<td>Libya</td>
<td>1</td>
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CONCLUSION

- Economic transformation of Africa will require sustainable development of the continent’s energy resources which will in turn require:
  - Production of scenario-based energy demand projections covering all sectors of national economies and on short, medium and long term time horizons.
  - Production of comprehensive energy supply strategies using the demand projections and also using the UN’s Sustainable Energy for All Initiative, the AU’s NEPAD initiatives, the regional projects, WEC’s studies as well as other national visions.
  - Making national energy policies robust, market oriented but with provisions for the under-privileged and with practical incentives and feed-in-tariffs where necessary.
  - The reviewed energy policies should be passed into law to minimise disruptions from one elected government to the next.

- There is the need for all African counties to compute their Energy Development Indices so as to know the effectiveness of the energy development strategies and thereby to effect appropriate amendments for future improvements.

- Lastly, the critical requirement for sustainable development of energy in Africa is Good Governance which will in turn require genuine democracy, transparent government transactions and political will at the highest level.
THANK YOU
AND
GOD BLESS