

DIHAD 23

The Impact of Rapidly Changing Sources and Costs of Energy on
Humanitarian Aid and Development

PRESENTATION

1. Access to Energy and Human Rights
2. Energy in the Development Agenda
3. Worldwide Access to Energy
4. The Case of Africa
5. Humanitarian Impact of Poor Access to Modern Energy
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Access to energy is indispensable for the enjoyment of the economic, social and cultural rights, the right to development and for the achievement of development goals, including the Sustainable Development Goals.

Lack of access to modern energy has humanitarian consequences.

THE SUSTAINABLE DEVELOPMENT GOALS



IMPORTANCE OF MODERN ENERGY

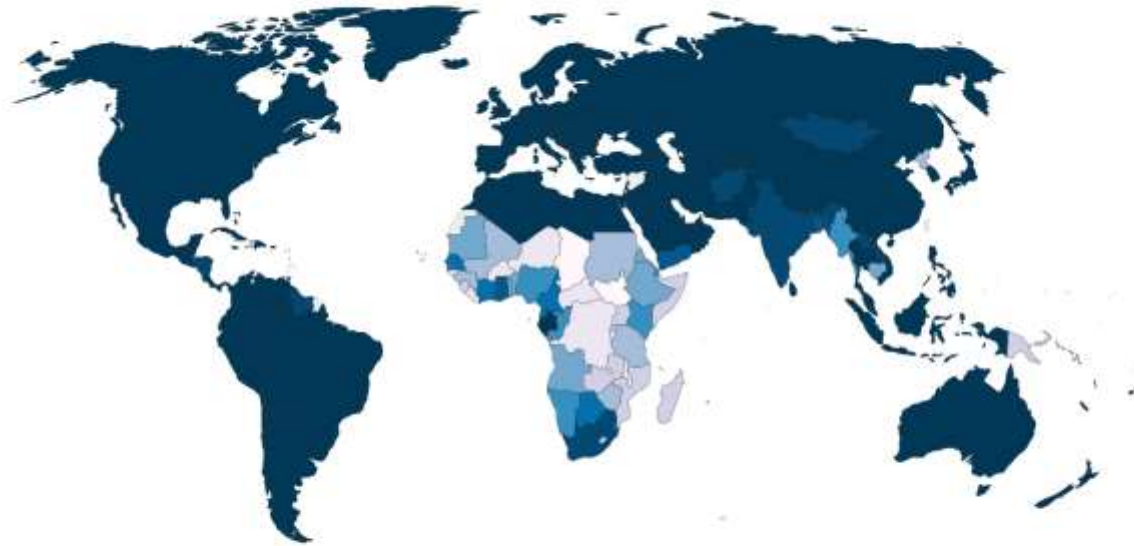
- Energy is a key resources which drives economy and development of any programme.
- Therefore, to strengthen and develop the economy, it is important to ensure the energy sector challenges are fully addressed to support all sectors.

WORLDWIDE ELECTRICITY ACCESS 2016

Electricity access, 2016

Share of the population with access to electricity.

Our World
in Data



Source: World Bank

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ACCESS TO ELECTRICITY

- 789 million people are living without access to electricity, and hundreds of millions more only have access to very limited or unreliable electricity;
- Sub-Saharan Africa, has the worst access to electricity
- It is estimated that only 22% of Sub-Saharan Africa has access to electricity

THE CASE OF AFRICA

AFRICA'S BLUEPRINT FOR DEVELOPMENT

- In addition to the 2030 Sustainable development agenda:
 - Agenda 2063 – compatible with the Sustainable Development Goals
 - NEPAD

THE CASE OF AFRICA

ENERGY SUPPLY POTENTIAL

- Africa has huge supplies of coal oil and gas;
- Africa is also rich in renewable energy resources, with well over 10 terawatts of solar potential, 350 gigawatts of hydroelectric potential, 110 gigawatts of wind potential, and an additional 15 gigawatts of geothermal potential.

HOWEVER

Africa remains “power poor,” and social and industrial needs remain unmet.

HUMANITARIAN IMPACT OF POOR ACCESS TO MODERN ENERGY

- Negatively affects health - Over 30% of energy consumed in Africa, (80% in Sub-Saharan Africa) is biomass for cooking – indoor pollution and respiratory problems severely affecting health;
- Restricts access to social services, including health;
- Limits agricultural production;
- Limits industrialization and economic growth (electrical power is the biggest infrastructural bottleneck for industrialization).

All these lead to a low quality of life of the population at large – high morbidity and mortality rates.

Population displacements to look for greener pastures abroad, at great risk to lives as we see in the Mediterranean Sea.

Competition for scarce resources could also lead to war and conflicts

According to ADB, if present trends continue, it will take up to 2080 for Africa to achieve full access to modern energy – hence the need to aggressively address electricity generation.

DILEMMA IN MEETING ENERGY NEEDS

- Higher costs of fossil fuels as subsidies are removed;
- Need for shift to renewable energy in the light of reduction of carbon dioxide emissions (even if Africa only contributed to 2% of carbon dioxide emissions);
- Need to move to renewable energy for power generation – currently only 1% of energy consumption in Africa, is from renewable sources. Limiting factor remains capital costs of exploiting renewable;

INVESTMENTS IN THE RENEWABLE ENERGY SECTOR IS CRUCIAL FOR ADDRESSING HUMANITARIAN PROBLEMS AND DEVELOPMENT.

FINANCIAL CONSIDERATIONS

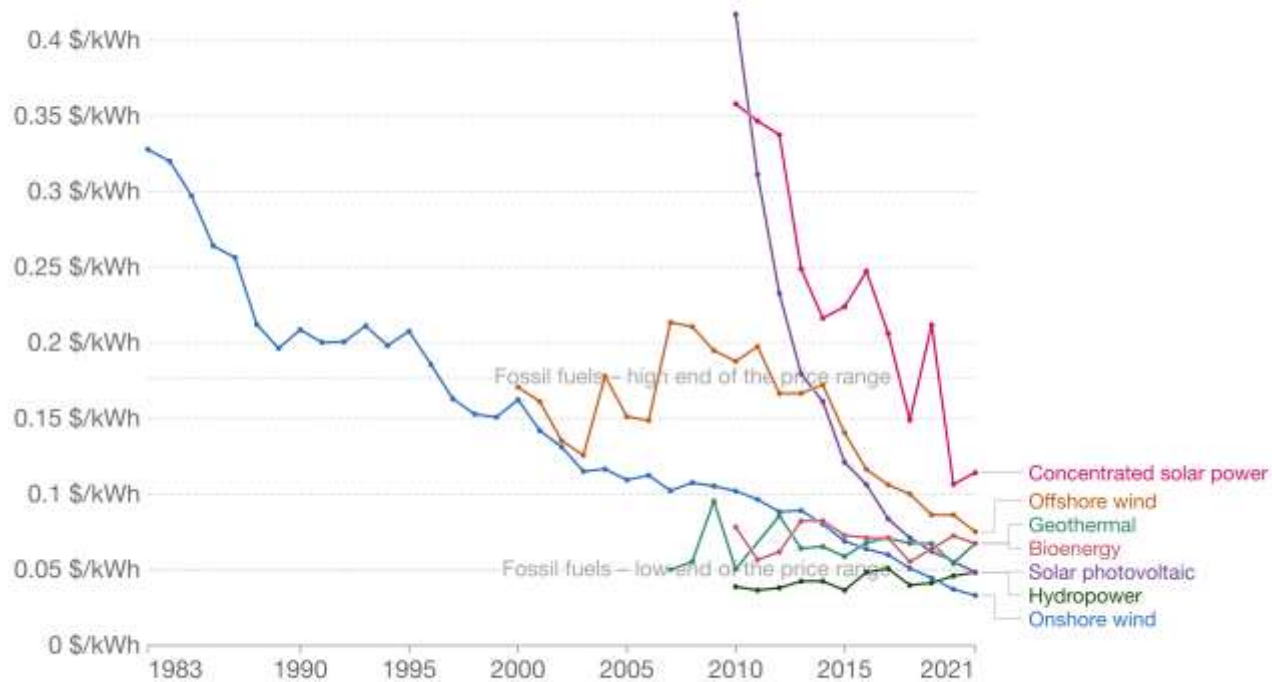
- The price of electricity generated from renewable energy sources have decreased substantially over the past 10 to 20 years and compare favorably with those from fossil fuels.
- However the capital costs for exploiting renewable technologies are high. (For example, the development of the Inga Falls , in the Democratic Republic of the Congo, which could generate up to 39,000 MW of electricity for the continent of Africa has an estimated cost of US\$80 billion)

COST OF ENERGY BY TECHNOLOGY

Levelized cost of energy by technology, World

Our World
in Data

The average cost per unit of energy generated across the lifetime of a new power plant. This data is expressed in US dollars per kilowatt-hour, adjusted for inflation.

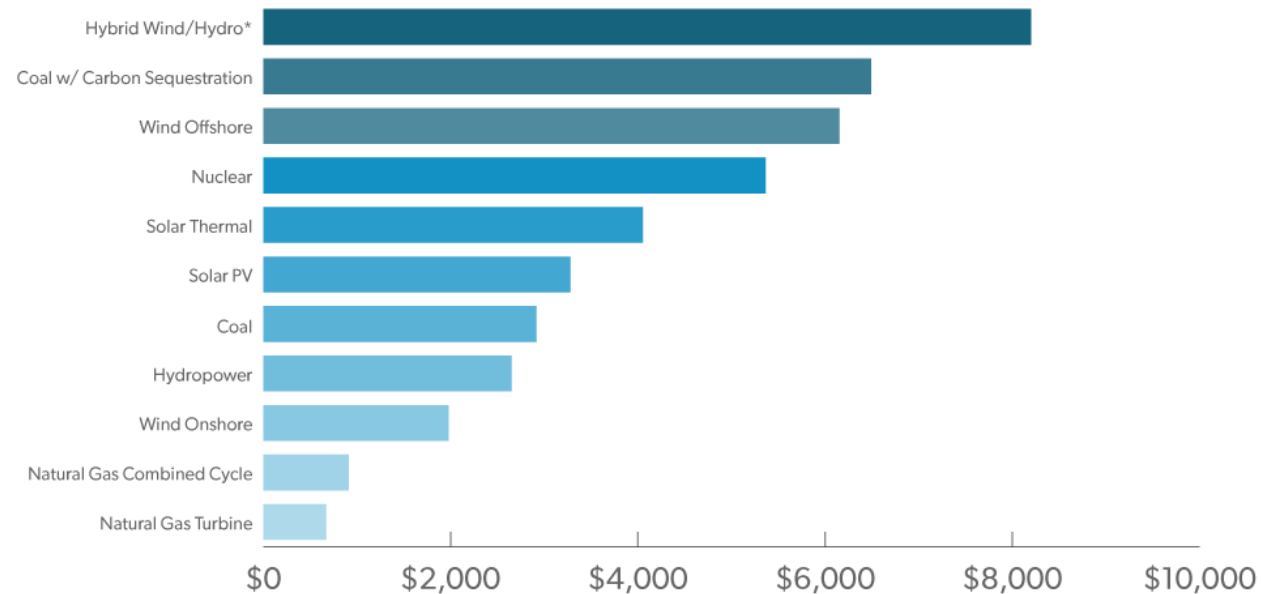


Source: International Renewable Energy Agency (IRENA)
Note: Data is expressed in constant constant 2021 US\$.

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CAPITAL COSTS OF GENERATING TECHNOLOGIES

Capital Cost of Generating Technologies
(2013 \$/KW)



*Year Dollars Unknown

Source: <http://euanmearns.com/el-hierro-januaryfebruary-2016-update/>; <http://www.eia.gov/forecasts/aec/assumptions/pdf/electricity.pdf>

CONCLUSIONS

- Urgent need for greater investments in developing renewable energy resources (it is estimated that in Africa alone, some US\$120 billion a year is required through 2040 to ensure that electricity requirements are met);
- Public/private partnerships are crucial in this regard