

ROUND TABLE II – Increasing power supply through cross-border networks

Facts and figures

Africa's energy paradox of plenty: high potential, large and increasing demand, low supply

- The continent is well endowed with all forms of fossil and renewable energy resources: hydropower (over 350 gigawatt (GW) of potential); solar (thousands of GW potential); wind (over 100 GW potential); geothermal (15 GW); biomass and even marine energy.
- Yet today, the total installed electricity capacity in Africa is only about 160 GW, with about 600 million people lacking access to electricity. By comparison, the installed electricity capacity in France is roughly 80 per cent of the total installed electricity capacity in Africa.
- Generation capacity is even lower, since many plants are not operating at nameplate potential due to degradation and lack of maintenance.
- Africa's energy supply mix is dominated by coal, which accounts for about 35 per cent of electricity capacity.
- In 2016, the average residential electricity consumption on the continent was only 162 kilowatt hour (kWh) per capita per year, compared to a global average of 2,800 kWh per capita per year.
- ECA projections indicate that if current trends continue, Africa will not achieve universal access to electricity by 2030, and it could in fact take up to 2080 to attain this goal.

Significant opportunity exists for energy transformation in Africa

- The Paris Agreement offers a framework for African countries to become global leaders in low-carbon energy in support of the 2030 Agenda for Sustainable Development and Agenda 2063.
- The Africa Renewable Energy Initiative that aims to add 300 GW of power capacity from renewable sources by 2030, along with the Programme for Infrastructure Development for Africa (PIDA), could also provide accelerating platforms for energy transformation in Africa.

- Energy transformation can also be supported through regional power systems. Many countries, such as the Democratic Republic of the Congo, Ethiopia and Mozambique, are already investing in hydropower generation for cross-border trade.
- The concept of clean energy corridors in Africa, as proposed by the International Renewable Energy Agency (IRENA) and supported by ECA, aims to link up African power pools to enhance cross-border trade and optimize deployment of the continent's renewable energy resources.

Political will, policy and investments are crucial

- In recent years, African countries have been investing on average only 0.3 per cent of gross domestic product (GDP) in the energy sector, compared to an average of 1.3 per cent for developing countries globally.
- ECA analysis of the nationally determined contributions (NDCs) to climate action of African countries under the framework of the Paris Agreement shows that these actions would require an investment of over \$2.6 trillion up to 2030, with a good proportion of this being in the energy sector.
- Public resources are not enough to cover the investment costs of Africa's energy transformation, highlighting the need to leverage additional investments from the private sector.
- Yet the role of the private sector in the continent's energy infrastructure is still very small. According to the Infrastructure Consortium for Africa, of the \$62.5 billion committed for infrastructure development on the continent in 2016, only 4.1 per cent was from the private sector.
- Domestic resource mobilization is also important, for example the resource mobilization for the \$4.7 billion Grand Renaissance Dam in Ethiopia targeted to raise about \$550 million from public, domestic and diaspora bonds.

Critical questions for discussion

1. How can public-private partnerships be used to establish concerted political will in Africa for regional integrated energy markets as the key driver of energy security?
2. How can Governments and the private sector work together more effectively to leverage the potential of cross-border energy infrastructure?
3. In what ways can African Governments facilitate private sector investment in energy infrastructure through providing a conducive investment environment, including access to affordable capital?
4. Against the background of increasing droughts owing to climate change and given the dominance of hydropower in cross-border electricity systems in Africa, how can Governments and investors factor in climate resilience in their investments?

5. What policy frameworks and technological innovations will be needed to take advantage of Africa's renewable energy resources, phase out the reliance on coal, and pursue a low-carbon development strategy?
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