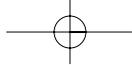


The African Development Bank and Energy: Meeting the Challenge of Energy Access for All Africans

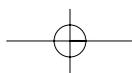
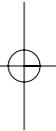
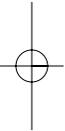




The African Development Bank (AfDB)

The African Development Bank is a multilateral development Bank established to help reduce poverty, improve living conditions for Africans and mobilize resources for the continent's economic

and social development. The Bank is owned by all the 53 countries of Africa and 24 countries across Europe, North and South America, the Middle East and Asia.



The whole continent of Africa today has the same installed capacity (560 TWh of electricity) as that of Spain. Sub Saharan Africa lives on less energy than Mexico. This stands out as a powerful brake on our economic prospects.

The pipeline of clean energy projects is long and growing, hydro, wind, solar, even geothermal. All sources of energy have to be tapped: doing it right of course, ensuring all safeguards, social and environmental are respected.

- African Development Bank (AfDB) President Donald Kaberuka, Opening Statement, Annual Meetings, May 2010

Increasing Energy Access: a Priority

With the prospect of growth of the energy market in Africa greater than ever due to a relatively strong economic growth in the past ten years, and with a projected growth of 5% in 2011 on the continent, the imperative to set the African continent on a sustainable energy production and consumption path is its assurance for economic resiliency.

And with very important natural resources including hydro (estimated around 1,750 TWh), geothermal (estimated at 9,000 MW), uranium (19% of world potential), wind and solar, the energy resources on the African continent are diverse and considerable.

But despite these abundant resources, energy access and consumption per capita remain very low. Outside of South Africa, power consumption averages 124 kilowatt-hours per person per year, or just about enough to power one light bulb per person for six hours a day.

Fast Facts:

- * Only one fifth of the population of Sub Saharan Africa has access to electricity compared with one half in South Asia and four fifths in Latin America.
- * Africa's power costs around USD 0.18 per kilowatt-hour on average to produce (about twice as expensive as elsewhere).
- * Frequent power outages force firms to rely on expensive back-up generators that cost USD 0.40 per kilowatt/hour.



- * Many countries rely on inefficient, expensive, small-scale, oil-based power generation.
- * Africa is well endowed with large-scale, cost-effective energy resources but they tend to be located a long distance from the major demand centers and their development is often too expensive for the countries where they are found.

Access to energy is closely linked to poverty reduction because insufficient energy is a central aspect of practically all core conditions of poverty, such as poor health, insufficient access to water, poor sanitation and inadequate education. Africa's infrastructure gap is a key constraint on the region's economic growth potential and efforts to reduce poverty.

AfDB Interventions in the Energy Sector

Between 1967 and 2008, 12% of the African Development Bank (AfDB) Group approvals amounting to more than USD 4.5 billion were allocated to the energy sector, with about 90% of this amount going to power supply.

Rural electrification has been the dominant objective, followed by multi-national grid interconnections and renewable energy development. In collaboration with other institutions, the AfDB has also supported energy sector reforms in a number of countries.

The Lake Turkana Wind Power Project in Kenya

Kenya's electricity sector services only an estimated 14 percent of the population. The generation of more electricity is necessary for energy to reach more people and support economic growth.

To meet its energy needs, the country will have to import nearly half of its energy by 2020. The Government of Kenya is seeking to reduce its reliance on imported energy and fossil fuels while ensuring a reliable supply of electricity, particularly clean, low-cost energy.

The Lake Turkana wind power project will build 365 wind turbines, reinforce 200 km of roads and bridges to transport the turbines from the port of Mombasa to northeastern Kenya, and add an estimated 426 km of transmission lines to supply power to the national electric grid. The reliable, continuous, clean power thus produced will provide the country with 300 MW of relatively cheap energy and increase Kenya's power by 30 percent.

The project is forecast to reduce carbon emissions by 16 million tons during its 20-year lifespan. Costs are projected at approximately Euros 459 million. The African Development Bank, which is the lead broker, will facilitate the entire debt tranche through the African Financing Partnership. The AfDB has also committed to a loan of up to Euros 100 million.

Examples of AfDB regional and multi-country operations include:

- The natural gas pipeline project sponsored by Sasol from Mozambique to South Africa
- The Algeria-Morocco-Spain power interconnection
- The Manantali dam project (Mali, Mauritania, Senegal)
- Studies under the Nile Basin Initiative, including the Rusumo Falls hydropower plant
- The interconnection of energy networks of Rwanda, Burundi and Tanzania
- The interconnection of the electricity networks of the Nile Great Lakes countries
- Studies on the Inga project in the Democratic Republic of Congo

- The Benin-Togo-Ghana interconnection project and the Zambia-Tanzania-Kenya interconnection
- Financing for the Ethiopia-Djibouti interconnection project.

AfDB Power Interventions Outcomes, 2006-2009

- Length of transmission and distribution lines rehabilitated or installed (km): 5,811
- Distribution substations and transformers constructed or rehabilitated: 685
- Service lines and energy meters installed: 42,500
- Street lights installed: 861
- People with a new electricity connection: 16,624,086

For the future

For the near future, African countries' energy development strategy geared to the goal of access-for-all should be anchored on two pillars:

- emphasize energy efficiency, to minimize losses and costs of power supplies
- encourage the development of low carbon economies, by maximizing clean energy options, such as wind, hydro, solar power, notably through increased regional integration and cooperation.



The Democratic Republic of Congo and the Inga Project

The potential role of the Inga hydroelectric development project is considered as a pillar in the power supply security and independence of the African continent, particularly at a time of steady increases of oil prices and growing interest in renewable energy.

Upon completion, the project should, through an interconnected electricity network and establishment of an energy market, help to satisfy the demand for electricity in the Democratic Republic of Congo and other regions of the continent.

- Existing power plants on the Inga site:
 - * Inga 1, started operating in 1970: 351 MW (6 turbo-alternator generating units)
 - * Inga 2, started operating in 1982: 1,424 MW (8 turbo-alternator generating units)
- Potential capacity of the site (Grand Inga): 39,000 MW.

AfDB involvement: rehabilitation of Inga 1 and Inga 2 power plants; financing of feasibility studies for the optimal development of the power capacity on the site.

The Role of the Private Sector

Infrastructure development, with emphasis on energy and power, is among the priority sectors outlined in the AfDB's Private Sector Development Strategy. The Bank's private sector activities in the energy sector embrace various aspects including corporate finance, project finance, public private partnerships and renewable energy.

The Bank promotes power development by providing financial support through direct equity investment and loans; advice to enterprises on the structuring of such projects; and advice to governments to introduce a conducive legal and regulatory framework and technical assistance to enhance their capacity to structure and handle public private partnerships program.

The Bank's private sector operations in the energy sector started in 1998 resulting in ten recently approved projects amounting to about USD 1 billion.

Examples of projects funded in the electricity sector include:

- Azito power thermal project in Côte d'Ivoire

This project involved the construction of a 288 MW power plant and electricity transmission system in

the Azito village near Abidjan, under a Build, Own, Operate and Transfer (BOOT) contract. The Bank's contribution amounted to USD 14 million.

- Sahanivotry hydroelectric power project in Madagascar

The Sahanivotry plant is Madagascar's first privately owned and operated hydro-electric power plant and the first hydropower plant to be built on the island since 1982. Located on the Sahanivotry River 30 km south of Antsirabe in the province of Antananarivo, the hydropower plant has an installed capacity of 15 MW and an average gross electricity generation of 90 GWh. It will produce 10% of the island's total supply of electricity. The African Development Bank provided about half the Euros 13 million to build the plant.

- Cabeolica wind farm in Cape Verde

The project comprises the construction, operation and maintenance of four onshore wind farms on four islands of the Cape Verdean archipelago (Santiago, São Vicente, Sal, and Boa Vista). The wind farms will have a combined installed capacity of 25.5 MW.

Climate Change and Africa

Fast Facts:

- Africa currently contributes only 4% of global greenhouse gas emissions
- Hydropower represents 45% of Sub-Sahara actual electric power generation, but only 4% of the sub-continent commercially exploitable potential has been tapped.

Climate change seriously threatens sustainable development, poverty reduction and the achievement of the Millennium Development Goals (MDGs), particularly in Africa. The adverse impacts of climate change affect Africa disproportionately and already manifest themselves in more frequent occurrences of climate extremes such as floods, droughts, and heat waves.

Climate change has major consequences for Africa's key economic sectors: a significant decline in agricultural productivity, heightened threat of food insecurity, expansion of diseases vectors, coastal erosion, and loss of biodiversity, increasing water scarcity, land degradation and desertification.

In East Africa, for example, major periodic droughts and floods have cost 5%-8% of GDP per event. Their regular frequency has a direct long-term fiscal liability of over 2% of GDP per year that is largely absorbed by national governments.

Whilst imposing new burdens, climate change also provides new opportunities.

Starting from a relatively low base, Africa has the opportunity to pursue a low carbon intensive development pathway as sustainable growth requires access to diverse, reliable, affordable clean and renewable energy sources.

The role of the Clean Development Mechanism

The role of the carbon financing mechanisms such as the Clean Development Mechanism (CDM) and carbon credits becomes important. Through them, energy projects can obtain the additional revenues necessary to make projects profitable and to bring energy tariffs down. The CDM should be a tool that helps make projects bankable. It thus provides an opportunity to shape Africa's infrastructure development in a more sustainable fashion than conventional technologies, and to build on experiences of other parts of the world.

The perceived risks in these projects are high due to the relative long-term maturity of such investments and the sometimes new or expensive technology. A key role for the Bank is to leverage financing from other sources, providing comfort to investors on the financial viability of projects.

AfDB's Actions in Climate Change

The African Development Bank supports its African member countries efforts towards clean energy in three specific ways:

- First, by encouraging countries to mainstream clean energy options into national development plans and energy planning.



- Second, the Bank is promoting investment in clean energy, including wind-power, hydropower and thermal power, smoke-free stoves, low-light technologies, and extending, improving, subsidizing and connecting national power grids.
- Third, the Bank is working to boost energy access in Africa by using the huge energy potential of the continent and by addressing the need for a low-carbon economy.

Climate Risk Management and Adaptation Strategy

During 2009 the Bank approved the Climate Risk Management and Adaptation (CRMA) Strategy as a follow-up to the Clean Energy Investment Framework (CEIF) for Africa. The CEIF set the agenda for mainstreaming clean energy options, by promoting investments in accessing cleaner energies and strengthening energy efficiency in all sectors.

The CRMA Strategy on the other hand seeks to improve the effectiveness of Bank-financed investments by reducing their vulnerability and promoting their resilience to climate variability; and ensure sustainability by building African countries' capacity and knowledge to address the challenges of climate change through policy and regulatory reforms. Both the CEIF and the CRMA constitute the Bank Group's policy on climate change.

In 2009 the Bank reviewed about 170 projects in its 2010–2012 pipelines to identify those eligible for carbon financing from the Clean Development Mechanism (CDM) so that CDM components may be built into the qualifying projects at project design.

The Bank also carried out staff training to help identify projects suitable for carbon financing and to build relevant implementation measures into project design. The Bank has successfully offset its carbon footprint (compensated for global carbon emissions) attributable to air travel of its

participants for its 2009 Annual Meetings and for its participation at the Copenhagen Climate Change Conference.

In order to implement the CRMA during the year, the Bank undertook a preliminary assessment of 206 projects approved since 2007 in infrastructure, energy, water and sanitation, and agriculture in respect to their exposure to climate risks. Of these, about 66 (32 percent) were classified as susceptible to climate change. In 2009 the Bank secured USD 6 million from the Global Environment Facility (GEF) resources in order to "climate-proof" some of its projects.

Efforts are being made to find more resources to climate-proof all Bank projects. The Bank has collaborated with the World Bank's Climate Change Team to develop a computer-based, climate-risk screening tool for use at project/program design stage.

Climate Finance

The African Development Bank is leading the development of new financing tools to support climate change actions in Africa, such as the Sustainable Energy Fund for Africa, the Clim Dev-Africa Special Fund, the Fund for Private Sector Assistance or the Africa Green Fund.

It is also catalyzing private sector support to generate additional resources for green economy investments through clean energy bonds and through carbon finance. In addition, it is participating in the implementation of programs and projects funded by global funding platforms, such as the Climate Investment Funds (CIF's).

Under the Clean Technology Fund, projects will be implemented by the Bank in Egypt, Morocco, South Africa, Tunisia and pending confirmation of resource availability, Nigeria. Of the total CTF Africa allocation of USD 1.9 billion, around USD 625 million will be implemented by AfDB leveraging a much higher level of resources, including its own.

Under the Pilot Program for Climate Resilience, the Forest Investment Program and the Small-Scale Renewable Energy Program, projects will be implemented by the Bank in Burkina Faso, Democratic Republic of Congo, Ethiopia, Ghana, Kenya, Mali, Mozambique, Niger, and Zambia.

These investments will finance scaled-up demonstration, deployment and transfer of low-carbon technologies, including wind, solar, small hydro, geothermal. They will enable piloting new approaches to attract private sector investment

in clean energy and climate adaptation, and to expand access to energy in remote areas using decentralized off-grid systems.

Climate Carbon Support Project

The AfDB African Carbon Support Project is focused on the three pronged issues of adaptation to and mitigation of climate change impacts, as well as carbon finance. Its focus is on identifying and preparing Bank-sponsored private sector projects with potential for Carbon Emissions Reductions, allowing them to secure credit from the international finance market.

The Congo Basin Forest Fund

In June 2008, the multi-donor Congo Basin Forest Fund (CBFF) was created to take preventative measures to protect the Congo Basin forests.

Congo Basin forests cover an estimated 200 million hectares and constitute the second largest rainforest in the world. They provide food, shelter and livelihoods for over 50 million people living in the countries they cover: Burundi, Cameroon, the Central African Republic, Chad, Equatorial Guinea, the Democratic Republic of Congo, Gabon, Republic of Congo, Rwanda, and Sao Tome and Principe.

Until 2009, the Congo Basin forests have been storing an estimated 500 million tonnes of carbon dioxide per year. The significance of the Congo Basin forests as a sink for carbon dioxide, therefore makes their protection vital for regulating climate. Increased logging, changing patterns of agriculture, population growth and industrial activities are depleting the forests. Without the right policies and immediate action, the Congo Basin forests will be destroyed.

The future of the Congo Basin forests depends on the ability of governments, NGO partners, the private sector and the international community to consider the sustainable management of these forests as integral to achieving sustainable economic development and alleviating poverty in the Congo Basin.

Hosted by the African Development Bank

A governing council manages CBFF, defines strategic directions and actively reviews and endorses project proposals. The organization is chaired by former Canadian Prime Minister, the Rt. Hon Paul Martin and Nobel Peace Prize Laureate Wangari Maathai. The CBFF Secretariat is based in Tunis, at the African Development Bank.



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