List of Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>AfDB</td>
<td>African Development Bank</td>
</tr>
<tr>
<td>CDM</td>
<td>Clean Development Mechanism</td>
</tr>
<tr>
<td>CIF</td>
<td>Climate Investment Funds</td>
</tr>
<tr>
<td>CoP17</td>
<td>17th Conference of Parties</td>
</tr>
<tr>
<td>GDP</td>
<td>Gross Domestic Product</td>
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<tr>
<td>GEF</td>
<td>Global Environment Fund</td>
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<tr>
<td>GWh</td>
<td>Giga-Watt hour</td>
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<tr>
<td>MW</td>
<td>Mega Watt</td>
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<tr>
<td>ONEC</td>
<td>Energy, Environment and Climate Change Department</td>
</tr>
<tr>
<td>SEFA</td>
<td>Sustainable Energy Fund for Africa</td>
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</table>
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Introduction

INNOVATION + EXPERTISE + IMPACT
Despite over a decade of consistent economic growth across the African continent, the majority of Africans today light their houses with expensive, dirty kerosene, cook their food with hand-gathered wood and spend much of their working time on small food plots ensuring their own subsistence. With only three years remaining before the 2015 deadline of the MDGs, a large amount of outstanding work to ensure growth in African energy access while mitigating environmental and social risks and the impacts of climate change remains.

It is within this context that the African Development Bank’s management created the Energy, Environment and Climate Change Department (ONEC) in May 2010. The creation of this department brought these three interlinked themes under one operational unit, thereby dedicating human and financial resources to tackle these operational priorities ramping up impact.

The creation of ONEC brought together existing and new expertise into one team so that operational and strategic new thinking—innovation—could lead the Bank towards the effective development of Africa. Integrating a Bank-wide strategy for energy sector intervention with a complementary framework on green growth mainstreaming within the context of the Bank’s statutory, special and thematic resources has become the operational mandate of ONEC. The work of ONEC responds directly to the call of Bank shareholders in their pursuit of a more powered, more climate resilient, greener Africa.

This report summarizes the work undertaken by the Bank in the areas of energy, environment and climate change, drawing primarily from the work of ONEC, to demonstrate the results achieved, the lessons learned and the way forward on this topic. Moving across three themes—innovation, expertise and impact—this report will demonstrate that the Bank is at the forefront of international agencies and institutions seeking to support both the development of African energy infrastructure and the alleviation of climate change and environmental degradation on the African continent.
Innovation /ˌɪnəˈvæʃən/

*n.* Le processus d'amélioration, d'adaptation ou de développement d'un produit, d'un système ou d'un service pour offrir de meilleurs résultats et créer de la valeur pour les personnes.
Africa is dependent upon its natural resources to grow and develop. It has contributed the least to greenhouse gas emissions but stands to lose the most. Droughts, floods and other water-related phenomena are among the clearest signs of climate change. And it is water, energy, and food security that will play the largest role in Africa’s ability to build its economy, secure livelihoods for its people, and preserve the environment.

In December 2011 at the 17th Conference of the Parties (CoP17) to the United Nations Framework Convention on Climate Change (UNFCCC) and the 7th Session of the Meeting of the Parties to the Kyoto Protocol that took place in Durban, South Africa, the Bank along with other African Leaders used one voice to increase awareness of climate finance issues as well as to broaden African countries’ understanding of the need to increase their access to global climate change financing mechanisms in order to effectively mainstream climate change into their development frameworks.

With the follow up to CoP17, the Bank alongside other African leaders had their voices heard at Rio+20 in Brazil with a strong message focusing on delivering the means to fulfill international commitments, especially for Africa. This does include financing. It also includes external debt, trade investments, capacity building, and technology transfer.

Unfortunately, Africa has not been able to capture a significant portion of international climate funding. Recent assessments show that Africa received only US$132 million between 2004 and 2011 from dedicated climate financing instruments to support adaptation (Climate Funds Update Portal). This is paltry when set against Africa’s needs of $30 billion per year in 2015 and up to $50 - $100 billion by the 2020s if current trends remain unchecked.

The Bank argues for the urgent need of flows of funds and instruments that can meet Africa’s unique climate change mitigation and adaptation needs. The Energy, Environment and Climate Change Department (ONEC) has developed a platform of implementation teams to access a suite of innovative climate financing instruments to support both Bank operations and Bank departments with climate change concerns, ultimately providing Africa with the investment to combat climate change and allow for energy access for all.

**Until 2030, the estimated costs of climate change are around 3% of the continent’s GDP, or US$40 billion each year.**

United Nations Environment Programme
By 2050 we can expect 24 million more malnourished children as a result of climate change. Almost half of this increase, 10 million children, will be in sub-Saharan Africa. With climate change, two thirds of the arable land in Africa could be lost by 2025.

UN Food and Agriculture Organization

Photo Courtesy of Sherry Lachelle/http://travelspirit333.wordpress.com/
Climate Investment Funds (CIF)

The AfDB is implementing the Climate Investment Funds (CIF), a group of funds to help developing countries pilot low-emissions and climate-resilient development.

A third of all CIF financing to Africa, approximately US$930 million, will be channeled through the Bank to support 15 nations and 1 region implement investment plans to pilot transformations in clean technology, sustainable management of forests, increased energy access through renewable energy, and climate-resilient development. The implementing arm for the CIFs is held in the Energy, Environment and Climate Change Department (ONEC).

The Bank’s ongoing technical support and guidance has helped propel these country-led investment plans under the CIFs’ four programs: the Clean Technology Fund, Program for Scaling-Up Renewable Energy in Low Income Countries, Forest Investment Program, and Pilot Program for Climate Resistance.

Between 2009 until May 2012, the Bank helped see 13 CIF investment plans to approval and several projects launched. By leveraging CIF resources alongside the Bank’s own resources, two renewable energy projects were approved by the Board in 2011: the Eskom Renewable Energy project in South Africa (US$265 million from the AfDB and US$100 million from the CIF) and the Menengai Geothermal Project in Kenya (US$80 million from AfDB and US$25 million from the CIF). In May 2012 the Board approved the concentrating solar power complex in Ouarazate, Morocco (US$240 million from AfDB and US$100 million from the CIF). In June 2012 there was approval of Morocco’s integrated Wind / hydro and rural electrification programme (US$450 million from AfDB and US$125 million from CTF).

Coming up in summer 2012, Board approval will be sought for two projects in Niger and Mozambique that aim to strengthen their populations’ resilience to climate change by improving hydro-meteorological methods and communication in Niger (US$ 13 million from the CIF) and climate-proofing agricultural supply chains in Mozambique (US$ 15.75 million from the CIF).

“It feels great at the end of the day when we have things accomplished and approved. It feels like we will contribute to something meaningful. It’s quite exciting.”

Mafalda Duarte, CIF Coordinator and Chief Climate Change Specialist, Environment
In 2011 Climate Financing was responsible for 23% of total financing of the renewable energy projects at the African Development Bank with an expected 30-32% in 2012.

...with clean energy (Kenya’s Menengai Geothermal project)
Global Environment Fund (GEF)

The Global Environment Fund (GEF) unites 182 countries in partnership with international institutions, civil society organizations, and the private sector to address global environmental issues while supporting national sustainable development initiatives. Today the GEF is the largest public funder of projects to improve the global environment.

Since 2010, the Energy, Environment and Climate Change Department has housed the Global Environment Facility Secretariat Team. ONEC has been increasingly instrumental in supporting diverse operations through the use of GEF resources.

Recent trends in GEF outputs have been remarkable. The approval in November 2011 of a programmatic approach, which includes 6 projects, 3 of which were approved in June 2012 by the GEF council, sums up US$43 million, that compared with the US$ 17.8 million of the 6 projects approved between 2007 and 2010, reflects an increase of 240% in one year on the resources to be administrated by ONEC.
Africa Carbon Support Project (ACSP)

ACSP was created by the Bank and is housed in the Energy, Environment and Climate Change Department to assist project developers and governments overcome the substantial information hurdles to accessing financing through the Clean Development Mechanism.

The African Carbon Support Project was operationalized in 2011 and since has screened 51 projects in the Bank’s pipeline, with 11 being identified as candidates for carbon credits under the Clean Development Mechanism (CDM). Currently ACSP is closely following and providing technical assistance to 6 of these projects to help them benefit from the CDM. They have also developed systems to build capacity and assist with CDM.

“11 Projects could benefit from 12-28 million Euros per year from carbon credit revenues in view of current market prices.”

Uche Duru, Senior Environmental Specialist, Environment and Climate Change Division, ONEC
The Energy, Environment and Climate Change Department was instrumental in the establishment of the Sustainable Energy Fund for Africa (SEFA), a technical cooperation fund with the Government of Denmark anchored in a US$ 56 million commitment, for preparation grants and equity investments in sustainable energy projects, as to enhance their commercial viability as well as bankability.

SEFA opened for business in January 2012, the international year of Sustainable Energy for All, and brings together energy experts and investment officers around concrete private sector projects. Over 60 projects have been screened so far, five are currently in the pipeline and one grant request has already been approved.

SEFA positions the Bank to be Africa's primary advocate in supporting the growth of African-owned renewable energy and energy efficiency enterprises throughout the continent. SEFA is structured to evolve as a multi-donor platform and leverage public and private resources for catalytic investments in the sector.

"SEFA endows the African Development Bank with the right tools to engage in increasingly smaller clean energy projects. This can be a real game changer in terms of enhancing electrification rates on the continent while creating much needed employment opportunities for women and youth.”

Joao Cunha, SEFA Coordinator and Senior Economist, Environment and Climate Change Division, ONEC

Sustainable Energy Fund for Africa (SEFA)

An innovative new fund to support small and medium-scale private sector projects in renewable energy and energy efficiency, through project preparation support and equity capital.
Conclusion

In order to address the demands of its shareholders arising from CoP17, Rio+20, the anticipated CoP18 and other international dialogues on climate change, the Bank has conceived, funded or otherwise brought an array of innovative, tailored financing mechanisms that provide solutions to obstacles faced by classical development finance instruments. In the African context, the Bank is leading the way in piloting new means to ensure that much-needed climate finance is put to work in order to make certain that both alleviation of poverty and climate resilience can be achieved by its Regional Member Countries.

The future promises to bring more innovation. The energy, environment and climate change department will continue to implement and fine-tune the aforementioned instruments. ONEC will also seek bank-wide collaboration so that sufficient resources are allocated to or through these instruments to ensure a “critical mass” of climate-focused funding sufficiently complements classic Bank financing. Finally, additional instruments and sub-instruments that address key risks or obstacles in the path to properly-funded climate projects and programs are anticipated. Overall, ONEC and the wider Bank are leading the way in unlocking innovative climate financing for African economies.
Expertise /ˌɛkspəˈtɛz/  
*n.* special skill, knowledge, or judgment
The Energy, Environment and Climate Change Department (ONEC) has taken very seriously its mandate for knowledge generation and capacity building. The department provides significant technical guidance and support in the areas of mainstreaming environmental and social concerns in public sector and private sector operations. It has also increased the Bank’s intellectual leadership through investments in research, analysis and expert staff.

“Knowledge generation and capacity building are core mandates of the African Development Bank and also pillars of our Climate Change Action Plan 2011-2015. In supporting climate change initiatives across the continent, we are learning what works (and what doesn’t), and we are sharing these practical lessons to keep on improving our teams, strengthening our partnerships and informing global climate decision-makers.”

Hela Cheikhrouhou, Energy, Environment and Climate Change Director

International Leadership and Knowledge Sharing

The Energy, Environment and Climate Change Department (ONEC) has taken very seriously its mandate for knowledge generation and capacity building. The department provides significant technical guidance and support in the areas of mainstreaming environmental and social concerns in public sector and private sector operations. It has also increased the Bank’s intellectual leadership through investments in research, analysis and expert staff.

“We work in a professional environment where we are encouraged to take forward initiatives that are new or existing that match our interests, motivation and capacity.”

Mafalda Duarte, CIF Coordinator and Chief Climate Change Specialist, Environment and Climate Change Division, ONEC
Early on in its existence, the Energy, Environment and Climate Change Department was criticized for its lack of experts. Throughout the last two years it has grown to a permanent staff of almost 60 with a wide range of relevant expertise.

28 Energy Experts

10 Environmental and Social Experts

8 Climate Change Experts

12 Support Staff (Including Management Team 4)

“I am surrounded by a team of dynamic, talented and motivated experts in their field.”

Kurt Lonsway, Manager of Environment and Climate Change, ONEC

Photo courtesy of Kurt Lonsway
Green Growth

Promoting green growth in Africa means addressing existing and emerging development challenges without locking into development pathways that deplete Africa’s natural capital and leave economies and livelihoods more vulnerable to climate change and other environmental, social and economic risks.

The Energy, Environment and Climate Change Department is co-chairing with the Climate Change Coordinating Committee and leading the Bank’s work on the exciting and challenging topic of green growth. A Green Growth Discussion Paper was prepared for Rio+20 and presented as part of two different consultation events in 2012. The final version of the Green Growth Framework is due by the end of 2012.

Conversations with various countries, including Mozambique, Mali, Sierra Leone and Cape Verde, have been initiated to identify at least three pilot countries for work to start in September 2012. The ONEC team has responded to the G-20’s call to action to create a green growth tool-kit and has been representing Africa’s voice during the tool-kit’s creation.

“How can we ensure Africa’s growth increases GDP and increases benefits for livelihoods but keeps manageable levels of the ecological footprint and green house gas emissions? There are different pathways to achieve the same goal. “Green Growth” means doing development smarter, doing upfront analysis and understanding the development pathways and understanding the economic, environmental and social costs. Putting this together is our challenge, and it is a very exciting challenge.”

Frank Sperling, Chief Climate Change Specialist, Environment and Climate Change Division, ONEC
Energy Strategy

This 5-year business plan will define the Bank’s public and private activities in Africa’s energy sector.

The strategy aims for the Bank to become Africa’s lead financier in supporting Africa to move to a lower-carbon growth path while ensuring access to energy for all Africans. The Energy Strategy rests on two pillars: ensuring access to modern energy, and fostering clean energy investments. These pillars will form the backbone of the Bank’s energy activities. In addition, the Bank has identified three key areas for action: (i) fostering regional integration, (ii) leveraging resources, and (iii) enabling public-private partnerships. The Bank will place particular emphasis on tailoring its assistance to countries’ and regions’ specific needs.

In designing its Energy Strategy, the Bank has sought out substantial input from a variety of stakeholders interested in finding sustainable solutions to Africa’s energy needs. It has placed different topics from the strategy on the Bank’s website for feedback and convened an event at CoP-17 in Durban, South Africa to present elements of the strategy.
Environmental and Social Due Diligence

The Energy, Environment and Climate Change Department is a unique division that provides technical guidance and support to many different departments in mainstreaming and addressing environmental and social concerns in operations at all stages. ONEC has been integral in ensuring the environmental and social sustainability of private sector and public sector operations as well as their adherence to the Bank’s relevant environmental and social policies, guidelines and safeguards.

In 2011 The Energy, Environment and Climate Change Department provided social and environmental due diligence support to 124 new and existing operations at the Bank. Technical guidance cuts across: transport, energy, water & sanitation, oil & gas, agri-business, and financial intermediaries.

“Our environmental officer’s expertise during the mission and throughout the environmental and social arranger role for the Gabon Fertilizer Company Project has been invaluable. The officer’s knowledge of all of the pertinent environmental and social issues distinguished the Bank as a quality Environmental and Social arranger. It has been an excellent example of partnership between the Private Sector Department and the Energy, Environment and Climate Change Department’s environmental and social team.”

Linda N. Oramasionwu, Senior Investment Officer, Private Sector Department
“Before environmental and social experts were in separate departments and were called upon just to “tick the box.” Now, we are in one place [ONEC] and have become organized. Colleagues are understanding the development value and are demanding that we are involved from the identification of the projects through to launching and supervision.”

Noel Kulemeka, Chief Socio Economist, Environment and Climate Change Division, ONEC

The Bujagali hydropower project and transmission lines affected 2,800 households, many of which had to be relocated. ONEC’s environmental and social team insisted that they all be compensated or relocated, and all but 6% have. Some of the compensation activities included: income generation activities, access to clean water, access to electricity, new school development and medical facilities.
Knowledge Generation

In order to mainstream climate change in Bank operations, it is integral that different stakeholders and the Bank are informed and trained about different climate change issues and that their capacities are developed.

Recently, the Energy, Environment and Climate Change Department has worked with six country programs to develop their capacities.

Morocco – Country strategy paper preparation is done and inputs on climate change and green growth have been included. A climate change fact sheet for Morocco was prepared and sent to feed into the new Climate Safeguard System.

Tunisia – Write-ups on environmental issues and climate change impacts. Green economy aspects were also considered has a means for job creation, with potential activities proposed including analytical work on “green” sectors and support to the Tunisian Solar Plan.

Mauritius – Inputs on climate change impacts, climate proofing recommendations for water and transport sectors and identification of new activities, such as a smart-grid study/pilot.

Mali – Climate change mainstreaming has been completed as well as inputs related to green growth. A climate change fact sheet has been prepared for Mali to feed into the climate safeguard system. The work is continuing to ensure green growth and climate change are fully mainstreamed in the final version of the country strategy paper.

Madagascar – Country strategy paper preparation on-going. Inputs provided so far include a comprehensive climate fact sheet, propositions for mainstreaming activities in proposed pillars and projects and identification of analytical work in the energy, water and health sectors.

Sao Tome and Principe – Inputs provided at project concept note stage including propositions for an environmental management component in the institutional capacity-building pillar and an integrated rural water/energy supply study.
The Energy, Environment, and Climate Change Department is also providing technical inputs in Bank-wide studies and tools related to climate change and other publications, namely

- The Department for Results and Quality Assurance’s climate safeguards system
- The Department of Transportation and Information and Communications’s “Study in Africa Transformation-Ready: The Strategic Application of Information and Communication Technologies to Climate Change Adaptation in Africa”
- The Human and Social Development Department’s study on “Weather Index Insurance for Rural Livelihoods Protection in Mozambique”
- “Energy Markets in Africa” (FIESP, Eletrobas, AfDB)
- Issue paper on environment and climate change in North Africa for the regional integration strategy paper
- Project Concept Notes and project appraisal reports: introducing the Clean Development Mechanism in the project assessment for those projects that are eligible for carbon finance.
- Support to the Guinea-Bissau and Mali Nationally Appropriate Mitigation Actions

“Energy Markets in Africa” by the Federation of Industries of the State of São Paulo (FIESP), in collaboration with the AfDB highlights the energy endowments in different parts of Africa and analyzes potential paths to increase energy access. It shows that Africa, with its largely untapped renewable energy potential, can move to a green economy if more investment is channeled into infrastructure and renewable energy and that this can contribute to energy security, especially against the backdrop of rising and volatile fossil fuel prices. This concern is most acute in oil-importing African countries, which spend 30 percent of their export revenues on imported oil - with some countries spending more than 50 percent.
Participation and Planning of International Events

The Energy, Environment and Climate Change Department has played an important role in several key international events that sought to identify solutions to the issues of energy access and climate change.

- Host of the 2011 International Social Expert Meeting in Tunisia brought together specialists working on social/environmental aspects with significant social implications in investments and operations.
- Host of the 2011 CIF Partnership Forum in South Africa and ensured the regional member country’s concerns and perspectives remained paramount throughout the discussions.
- Contributor with other AfDB departments to the 2011 Africa Pavilion at CoP-17 in South Africa and hosted side events ranging from green growth discussions to presentation and discussion around the Energy Markets in Africa Report.
- Other events included: co-host of the Africa Carbon Forum in Morocco, participant of the Global Green Growth Forum in Denmark, highlighting the Bank’s work on infrastructure during the 2011 G-20 discussions in Cannes, and many others.
Climate Finance Newsletter

Beginning in December 2010, the Climate Finance Newsletter provides information and updates on developments in climate finance in Africa and can be found at:


Conclusion

The Bank’s prioritization of climate change and inclusive green growth over the last two years has required mobilization of internal capacity that did not previously exist. Under the leadership of ONEC, a team of international experts, eager to lead the Bank in its new charge against the negative effects of climate change on Africa, has been drawn together. Together this team represents over two centuries of combined experience in environmental and social safeguards, climate change, climate financing, carbon markets, engineering, energy policy and good governance.

Over a relatively short period of time, this team has already led the Bank into the new frontiers of a strategic, Bank-wide recognition of climate change as a priority. Furthermore, ONEC has successfully contributed to the representation of Africa’s interest in the international climate change and energy discourses. Looking forward, the Bank will play an increasingly greater role in advocating, mobilizing resources and financing towards greener, cleaner development in Africa; the ONEC team will be at the forefront of this Bank-wide effort, leveraging their expertise to ensure the highest quality support is delivered to the Bank’s member countries and clients.
Impact /ˈɪmpakt/  
v. have and exert influence or effect
Impact

Sustainable Access to Energy

The United Nations Secretary-General has declared the year of 2012 as the year of Sustainable Energy for All with the goal of providing sustainable energy for all by 2030.

Unlocking Africa’s massive potential in sustainable and renewable energy sources is key to achieving the combined objectives of increased energy access and cleaner generation of modern energy. In addition, increased energy efficiency on both supply and demand sides, allows existing and new infrastructure to reach more people by freeing capital resources for investment in the transition to cleaner sources of energy. This includes renewable energy and low greenhouse gas-emitting fossil fuel technologies, such as a shift from coal to natural gas, or the upgrading of conventional coal plants to combined-cycle and heat capture systems.

The Energy Policy and Energy Strategy lays out a path for the Bank to better play its role in delivering energy access to all through cleaner, smarter technologies. The Energy, Environment and Climate Change Department will play a key role in ensuring the action plan’s successful achievement.

In sub-Saharan Africa, at least 625 million people do not have access to modern energy services and still rely exclusively on traditional biomass for cooking, heating and lighting.
According to the International Energy Agency’s World Energy Outlook 2011, if Africa was to achieve the goal of energy access for all by 2030, it would require an estimated US$390 billion dollars from 2010 to 2030 or US$19.5 billion per year accounting for population growth.

“We [AfDB] are particularly clear that specifically in sub-Saharan Africa and low income countries, access to energy will continue for a while to be the top priority. Creating that access in the cleanest possible form is an opportunity on the continent.”

-Hela Cheikhrouhou, Director Energy, Environment and Climate Change


## Current Portfolio

Total Energy, Environment and Climate change Department’s portfolio is comprised of 58 projects for a total amount of UA 4,906.4 million at the end of July 2012.

### ACTIVE PORTFOLIO AT A GLANCE (UA m / %)

<table>
<thead>
<tr>
<th>By Window</th>
<th>ADB</th>
<th>ADF</th>
<th>NTF</th>
<th>Climate Finance</th>
<th>Trust Fund</th>
<th>“JICA” Through the Bank</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Approved</td>
<td>3,329.2</td>
<td>1,234.6</td>
<td>6.4</td>
<td>233.9</td>
<td>34.7</td>
<td>675.7</td>
<td>4,906.4</td>
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</table>

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<tr>
<th>By Region</th>
<th>North</th>
<th>South</th>
<th>Center</th>
<th>East</th>
<th>West</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Approved</td>
<td>1,568</td>
<td>32.0%</td>
<td>2,109</td>
<td>43.0%</td>
<td>219</td>
<td>4.5%</td>
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</table>

<table>
<thead>
<tr>
<th>By Income Group</th>
<th>Low Income Countries</th>
<th>Middle Income Countries</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Approved</td>
<td>1,187</td>
<td>24.2%</td>
<td>3,719</td>
</tr>
</tbody>
</table>

In 2011 the Bank helped finance the generation of 630MW of clean energy and expects to double that in 2012.

In 2011 the Bank completed US$ 555 million of clean energy projects with an expected US$ 725 million in 2012.
Africa has significant resources of hydro, solar, wind, biomass and geothermal energy but it produces only about 9.5 percent of the world’s total output, well below its potential.
Menengai: Kenya’s 400MW Geothermal Project

Africa’s Great Rift Valley has one of the greatest geothermal energy potentials in the world. The Menengai geothermal steam field development project will exploit a portion of this potential to provide power to equip 500,000 Kenyan households, 300,000 small businesses and nearly 1,000 GWh to industries. Exploration and design work is underway, and the generation capacity is expected to come online in 2016.

<table>
<thead>
<tr>
<th>Country</th>
<th>Kenya</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technology</td>
<td>Geothermal</td>
</tr>
<tr>
<td>Output</td>
<td>400MW</td>
</tr>
</tbody>
</table>
| AfDB Financing | USD 100 Million (ADF)  
|            | USD 25 Million (SREP/CIF)  |

“Geothermal energy in Kenya is plentiful, clean, unaffected by climate, and just waiting to be tapped. Development has been slow due to the high costs and risks of project preparation activities like infrastructure development, surface exploration and appraisal drilling. But change is on the horizon as Kenya begins to activate its recently approved investment plan under the Scaling Up of Renewable Energy Program in Low Income Countries. The promise of concessional financing to absorb start-up costs and risks is a signal to private investors that Kenya’s emerging renewables market deserves a closer look.”

Hela Cheikhrouhou, Energy, Environment and Climate Change Director

In Kenya 44 million or 84% of the population do not have access to electricity.

Photo courtesy of Youssef Arfaoui
“This project has been a great learning experience. I have learned about South Africa’s renewable energy potential and an exciting unconventional technology.

Obiora Collins Okoye, Senior Energy Engineer, ONEC 2

The Eskom project falls into South Africa’s integrated resource plan for 2010-2030 which calls for doubling of electricity by 2030 with a reduction of coal generation in the power mix from 86% to below 50%.

Eskom: South Africa’s 100MW solar and 100MV wind project

South Africa has committed to reducing coal-based energy production to less than 50% of its power mix by 2030. In order to help reach this goal, the Bank is mobilizing a combination of its own resources and CIF resources to finance a combined US$1.3 billion renewable energy project. By utilizing two technologies, Eskom will be able to deploy diversified energy across the Western and Northern Cape areas of South Africa.

<table>
<thead>
<tr>
<th>Country</th>
<th>South Africa</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technology</td>
<td>Solar-PV &amp; Wind</td>
</tr>
<tr>
<td>Output</td>
<td>100 MW Solar &amp; 100 MW Wind</td>
</tr>
</tbody>
</table>
| AfDB Financing| USD 265 million (AfDB)  
USD 100 million (CIF) |
Bujagali: Uganda’s 100km transmission line from the 250MW Hydroelectric Power Project

After the completion of the power project, ONEC funded the transmission line that was commissioned in June 2012 and energy started to flow. The transmission system is now delivering much needed energy to Uganda's grid for the prevention of black- and brown-outs in Kampala and the surrounding area.

<table>
<thead>
<tr>
<th>Country</th>
<th>Uganda</th>
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<tbody>
<tr>
<td>Technology</td>
<td>Hydroelectric (run-of-river)</td>
</tr>
<tr>
<td>Output</td>
<td>250 MW</td>
</tr>
</tbody>
</table>
| AfDB Financing| USD 110 million (AfDB private loan)  
USD 30 million (ADF concessional sovereign loan) |

“The loss we incur on fuels to run our generator are over 100 million [Ugandan] shillings per month and inconsistent power leads to under-baked products, a huge loss in productivity. We need more power and consistent power.”

Cosmas Agonya Olwoch, Manager, Uganda Clays Ltd.
Ouarzazate: Morocco’s First phase 125MW to 160MW of concentrating solar power complex

Putting Morocco’s considerable solar energy potential to use is a high priority for the government and the Bank. The Ouarzazate concentrated solar power complex will harness the energy of the sun with a cutting edge technology, thereby providing a significant contribution to Morocco’s energy supply.

<table>
<thead>
<tr>
<th>Country</th>
<th>Morocco</th>
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<tbody>
<tr>
<td>Technology</td>
<td>Solar-Concentrated Solar Power</td>
</tr>
<tr>
<td>Output</td>
<td>126-160 MW</td>
</tr>
<tr>
<td>AfDB Financing</td>
<td>USD 240 million (AfDB)</td>
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<td></td>
<td>USD 100 million (CTF/CIF)</td>
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</tbody>
</table>

“With unusual and innovative public-private partnership projects, come some difficulties and key learnings to be used for future innovative projects. Because this project was so innovative it was difficult to follow traditional methods. We had to work closely with all parties involved.

In the first phase of procurement there were 11 private sector firms showing interest. This demonstrated the promise of the private sector and renewables in Africa.”

Ibrahima Konate, Chief Power Engineer, ONEC

“Now, we have more resources and more support from other departments, which enables us to have more innovation. We have new financial instruments that are in place which provide more opportunities to exit from the routine.

Amadou Zakou, Division Manager, Energy Sector Development, North, Central and South-west Africa, ONEC

Photo courtesy of Kurt Lonsawy
Itezhi Tezhi: Zambia’s 274km Transmission line and 120MW Power station from hydropower

The Itezhi-Tezhi hydropower plant, Zambia will be located at the site of the existing dam on the Kafue River. It is the first public private partnership in the energy sector in Zambia and will have a base load of 120 MW.

<table>
<thead>
<tr>
<th>Country</th>
<th>Zambia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technology</td>
<td>Hydroelectric &amp; Associated Transmission</td>
</tr>
<tr>
<td>Output</td>
<td>120MW</td>
</tr>
<tr>
<td>AfDB Financing</td>
<td>USD 35 million (AfDB private loan)</td>
</tr>
</tbody>
</table>

“Some of the projects we are undertaking require creativity and innovation. Processing jointly with the Private Sector Department in a one-Bank approach to a public-private partnership hydropower scheme and public utility owned transmission line, using a mix of public and private sector funding as well as national trust funds, where African Development Fund resources will be used for the first time to finance government’s equity participation in a public-private partnership scheme. This has been a learning experience to all who were involved and those approaches are replicable to future similar projects.”

Engedasew Negash, Manager ONEC 2

Other Projects

Inga hydropower, Democratic Republic of Congo is the largest hydropower potential on the continent, (an estimated 39,000 MW). Inga has two installed plants that represent only 4% of its potential. The Bank is helping to upgrade the existing plants and financing feasibility studies to determine how best to phase the development of the site’s capacity. Inga could provide hydroelectricity to many African regions with an interconnected electricity network and energy market.

The Lom Pangar Hydroelectric Project in Cameroon (UA 44.9 million), which includes the construction of a 30 MW hydroelectric plant to address the country’s ongoing energy deficit and accelerate economic growth in an environmentally sustainable manner. It will transmit electricity to an additional 150 communities.

The Rural Electrification Project (UA 15.0 million) in Guinea will bring energy to 60,000 households in 31 more communities. This will lead to greater employment opportunities and reduce the current polluting effect of the single combustion engines on which rural households currently depend.
Hydropower represents 45% of Sub-Saharan Africa’s actual electric power generation, but only 4% of the sub-continent commercially exploitable potential has been tapped.

Conclusion

With an ever-growing portfolio spread across the African continent, the Bank is making a substantial impact on the generation, transmission and distribution of energy across the African continent. Looking forward under the auspices of the proposed energy strategy, the Energy, Environment and Climate Change Department will be developing projects that bring together public and private players to ensure greater energy while encouraging growth of energy supply that is not at the cost of the environment. Buttressed by the growing toolkit of additional financing instruments, ONEC is on target to invest in African renewable energy and energy efficiency projects with financing that is tailored to mitigate financial, economic and climate risks. ONEC’s team of experts will collectively strive to deliver sound projects based analysis of best alternatives for the advancement of African energy.

“When I see Africa’s huge potential in renewables, specifically in geothermal and wind which are not exploited, it makes me sad. That is why one of my recommendations to my colleagues and investors is to exploit better our natural resources.”

Youssef Arfaoui, Chief Renewable Energy Specialist, Environment and Climate Change Division, ONEC
Conclusion

INNOVATION + EXPERTISE + IMPACT
Conclusion

The Bank’s efforts to mainstream climate change in its operations, through the inception of ONEC, was very timely, but there is still more work to be done in responding adequately to the requests of regional member countries. Within a dynamic international context—with the UN declaring 2012 as the year of Sustainable Energy for All and the uncertainty around post-Kyoto access to carbon markets—ONEC and the Bank stand ready to provide the leadership and resource mobilization necessary to advocate, build and maintain sustainable, green growth on the continent.

In an effort to address the dearth of financial and technical resources available to unlock climate financing, the Bank has assembled a growing toolkit of tailored instruments and support programs. These innovative tools allow the Bank to address specific obstacles and risks along the path to sound, climate friendly investment across the public and private spheres. Furthermore, these relatively modest tools have been designed in such a way that scarce resources allocated to them—both financial and human—have a scaling effect that will yield leveraged investments larger than their own resource pools.

Success in diligently and adeptly designing, implementing and supervising resources with such potential requires a new standard of expertise. By assembling a seasoned team, the Bank and ONEC have the expertise to execute. This expertise has turned “innovation” from a sought-after idea to a daily practice. As the ONEC and wider climate finance team grows, the Bank will continue to recruit, nurture and expect the best from its experts.

With the right tools and the right team, the Bank is poised to have an ever-growing impact on energy, the environment and climate change in Africa. The time is, now. The Bank through ONEC should be proactive and possess foresight about the coming issues in the areas of energy, environment and climate change and respond adequately to the growing needs of the continent.