THE ROLE OF AUC FOR DEVELOPMENT OF RENEWABLE ENERGY IN AFRICA

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Energy Situation in Africa

• Africa has about 20% of the world’s land mass and 16% of the global population, yet uses less than 5% of globally electricity

• Only 30% of the population has access to electricity, compared to 70–90% in other parts of the developing world

• Africa contributes to 12.5% of global oil production but consumes only 3.5%

• Only 7% of hydroelectricity and 1% of geothermal potential so far are being used

• Over-dependence on the traditional biomass resources (583 million people in SSA)
Hydropower Potential

Current hydropower installed 26,721.8 MW
Wind Energy Potential

Promising wind power locations include Egypt, Morocco, Mauretania and coastal regions on the whole continent.

Grid integration is essential for the successful application of large scale wind power.

Current wind power installed 1,137.3 MW

Bioenergy Potential

The map shows the potential biomass density in Africa; the highest potential you find in central and western African countries.

Africa is endowed with a high potential of Solar Energy and an average irradiation of up to 6500Wh/m² (among the highest in the world).

Highest potentials are available in Niger and Chad – but generally all countries are favored for solar energy production (including large scale applications).

Current solar power installed 102.2 MW
Geothermal Energy Potential

Currently 257 MW are exploited in Africa against 14,000 MW potential (Kenya 250 MW, Ethiopia 7 MW).

Estimated potential in different countries:
- Kenya: 3-4,000 MWe
- Ethiopia: 2-5,000 MWe
- Tanzania: 230-650 MWe
- Uganda: 450 MWe
- Eritrea, Djibouti, Zambia, Rwanda, D.R. of Congo: large potential but lack of reliable quantitative assessment.
In order to achieve this strategic objective various programs have been initiated including:

- Africa-EU Energy partnership (AEEP)
- Solar Energy Development
- Regional Geothermal Programme
- Bioenergy Programme
- Hydropower
- Program for infrastructure Development in Africa (PIDA)
2020 Political Targets

Energy access

Bring access to modern and sustainable energy services to at least an additional 100 million Africans
2020 Political Targets
Energy Security

Double the capacity of cross border electricity interconnections, both within Africa and between Africa and Europe

Double the use of natural gas in Africa, as well as doubling African gas exports to Europe

Bring the current flared gas to the market
2020 Political Targets

Renewable Energy

Build 10,000 MW of new hydro-power facilities
2020 Political Targets
Renewable Energy

Build 5,000 MW of new capacity in wind farms
2020 Political Targets
Renewable Energy

Build 500 MW of new capacity in solar energy
2020 Political Targets
Renewable Energy

Triple the capacity of the other renewable energy resources
2020 Political Targets
Renewable Energy

Improve energy efficiency in Africa in all sectors, starting with electricity sector
Renewable Energy Cooperation Programme (RECP)

Objectives of the programme

• Accelerate the use of renewable energy in Africa
• Make Africa a prime destination for renewable energy
• Expand renewable energy in energy mix
• Increase energy access through renewable energy
• Increase energy security
• Foster private sector cooperation between Africa and Europe
RECP – Implementation and Institutional Set-up

Timeframe 2010-2020

Three-year Start-up Phase (2011-13)
- Implementation by EUEI PDF jointly with AFD

Financing
- Financing for Start-up Phase (2011-13) provided by European Commission

Institutional Set-Up
- Joint Experts Group (JEG) of the AEEP
  - Provides political guidance for RECP
SOLAR ENERGY DEVELOPMENT IN AFRICA

• The 14th AU Summit mandated the AU to prepare a study for exploitation of the solar energy potential in Sahara.

• The first phase of the study for Sahara and Shale region was completed and validated.

• The outcome of this study presented in the Energy Ministerial Meeting in Maputo, November 2010.

• The executive summary of the study adopted at the AU January 2011, Summit.

• The second and third phases of study are on going for Kalahari and Ogden desert.
SOLAR ENERGY STUDY
Main Findings

• The study estimated that the average cost of energy produced by CSP is expected to be in the range of 10 to 15 US¢/kWh by 2030 and reduced to 5 to 7 US¢/kWh by 2050 depending on the geographical location;

• All of the countries analyzed in this study could achieve a full electrification status as early as 2035 (by 2040 as latest) through the proposed plan of disseminating Concentrating Solar Power (CSP) and other renewable energy technologies;

• The countries of North Africa could achieve the vision of exporting electricity to Europe by 2030;

• The study estimated that the deployment of CSP and other renewable energy technologies will directly support the efforts of preserving the environment and contribute to abatement of millions of tons of CO2 and other greenhouse emissions.

• The deployment of CSP and other renewable energy technologies in the region will accelerate the integration of electric systems among the countries in the region and between Africa, Europe and the Middle East.
The Ministers of Energy from the 11 countries of the EARS mandate AU on the Addis Ababa Declaration for development Geothermal Energy (June 2009);

- Action Plan and Road map Adopted to accelerate development of geothermal energy resources in the East African Countries
- Published geothermal report on status, strategy, gaps and support programmes.
- About 40 representatives of Eastern Africa countries trained on Geothermal Policy development and harmonization;
MEETING AUC-KFW
AUGUST 9-11, 2010
A.A, ETHIOPIA

GEOTHERMAL RISK MITIGATION FACILTY FOR EASTERN AFRICA COUNTRIES
OBJECTIVE OF THE FUND

“To encourage the public and private sector investors to develop geothermal power generation by providing grants”.

To SUPPORT ALL Countries of the EARS Initially the “FUND” WILL FOCUS Ethiopia, Kenya, Rwanda, Tanzania and Uganda
SIZE AND TIME FRAME OF THE FUND

• The initial size of the “Fund” is approximately €50m.

• KFW will provide grant funding up to Euro €20M and 30 M from Africa-EU Infrastructure Trust Fund.

• Time frame of the fund is for 4 years starting from 16 March 2012
Bioenergy Programme

The Expert Group Meeting (EGM) to validate reports on bioenergy policy and technology options in Africa was jointly organized by the Department of Infrastructure and Energy of the African Union Commission (AUC) and the Food Security and Sustainable Development Division and the Regional Integration, Infrastructure and Trade Division of the United Nations Economic Commission for Africa (UNECA). The meeting took place from 21 to 23 November 2011 at the United Nations Conference Centre, UNCC, in Addis Ababa, Ethiopia.
Bioenergy Programme

The main outputs of this EGM meeting are:

- Modern bioenergy development can help enhance energy access particularly in rural Africa
- The need to develop a continental policy and regulatory framework
- Bioenergy policies and strategies need to be based on science and be developed through processes that engage stakeholders
- The key outcome of the meeting will be a refined draft of Africa’s Bioenergy Policy Framework and Guidelines.
Hydropower potential, by continent

- **69%**
  - 693,361 GWh/y
  - 1,000,000 GWh/y
  - 31%
  - 12,143 MW

- **75%**
  - 813,277 GWh/y
  - 701,000 GWh/y
  - 255
  - 8,342 MW

- **7%**
  - 89,640 GWh/y
  - 160,000 GWh/y
  - 93%
  - 1,000 MW

- **22%**
  - 348,000 GWh/y
  - 3,440,000 GWh/y
  - 78%
  - 114,000 MW

- **33%**
  - 571,164 GWh/y
  - 1,000,000 GWh/y
  - 61%
  - 36,971 MW

- **70%**
  - 41,912 GWh/y
  - 101,000 GWh/y
  - 51%
  - 7,717 MW
Hydropower Programme

Africa has huge hydropower potential estimated 300 GW most of them concentrated at the four major rivers basin Congo, Nile, Niger and Zambezi, only 7 % of hydropower potential of the continent 1.1GW has been exploited.

African Union Elaborate a study fro development Major Hydropower projects in the continent this study validate at the workshop June 2009 the expert’s recommended to complete the study.

The African Union through the 10 million Moresby funded from the European side will prepare ToR to do the following:

- Elaborate Hydropower 2020
- Organize round table for resource mobilization
- Complete the study for development major hydropower projects
• PIDA covers 4 sectors: Energy, Transport, Information & Communication Technology (ICT) and Water (Trans-boundary).

• will be implemented in two major steps: study step and implementing steps of the results of the study.

• PIDA is a programme dedicated to facilitating continental integration through improved regional infrastructure
Thank you

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