



THE ROLE OF AUC FOR DEVELOPMENT OF RENEWABLE ENERGY IN AFRICA

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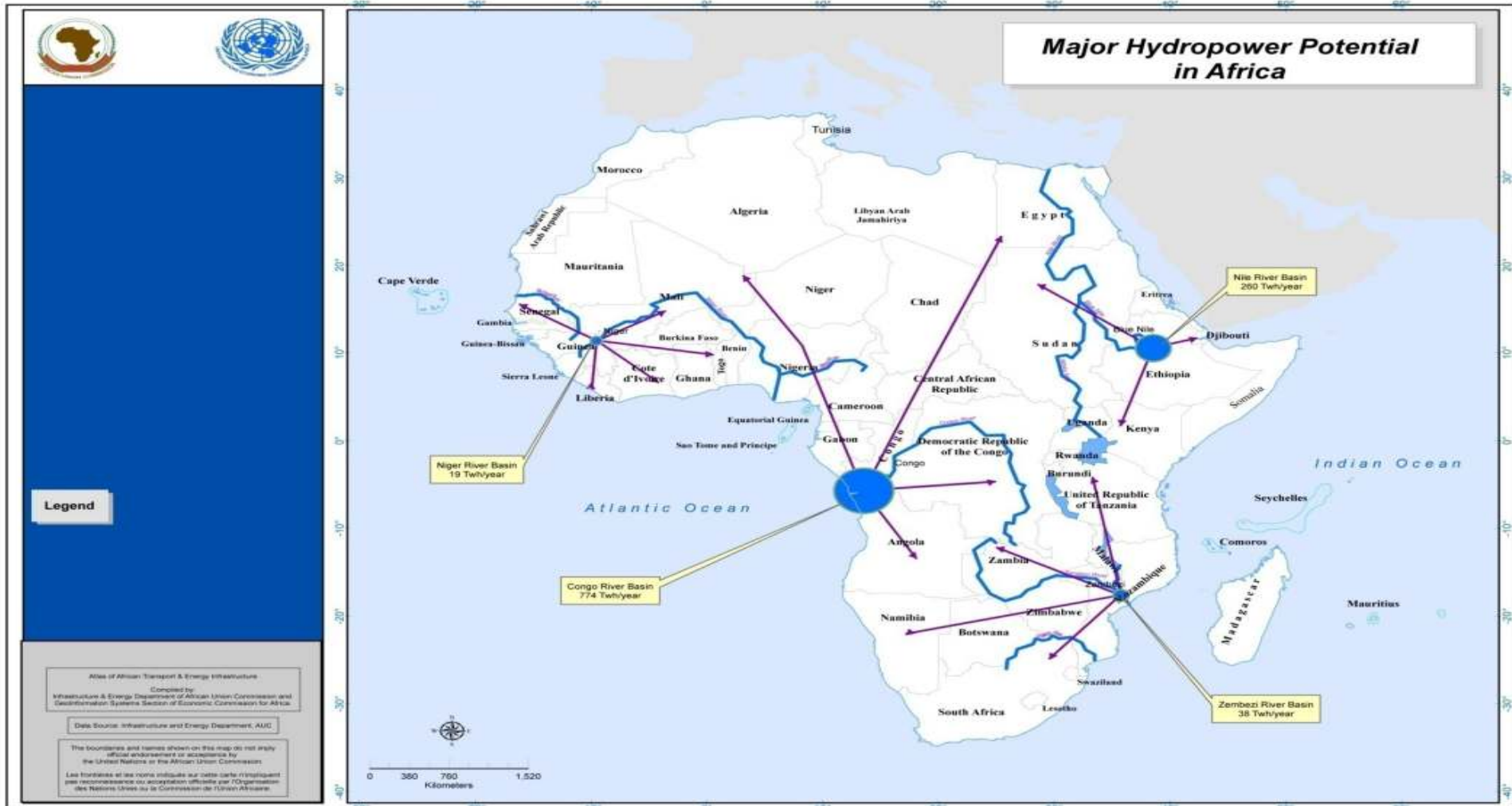


Energy Situation in Africa

- **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)**



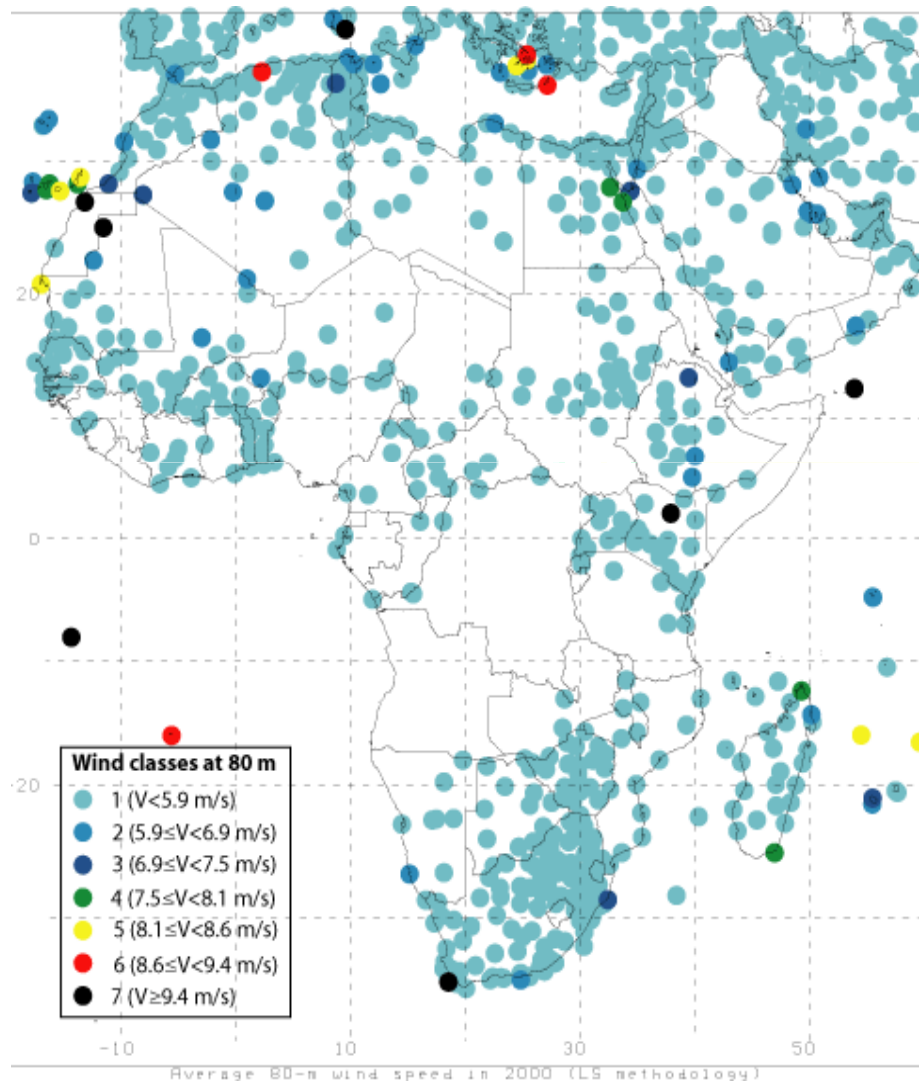
Hydropower Potential



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.

Source: GENI – Global Energy Network Institute, www.geni.org

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

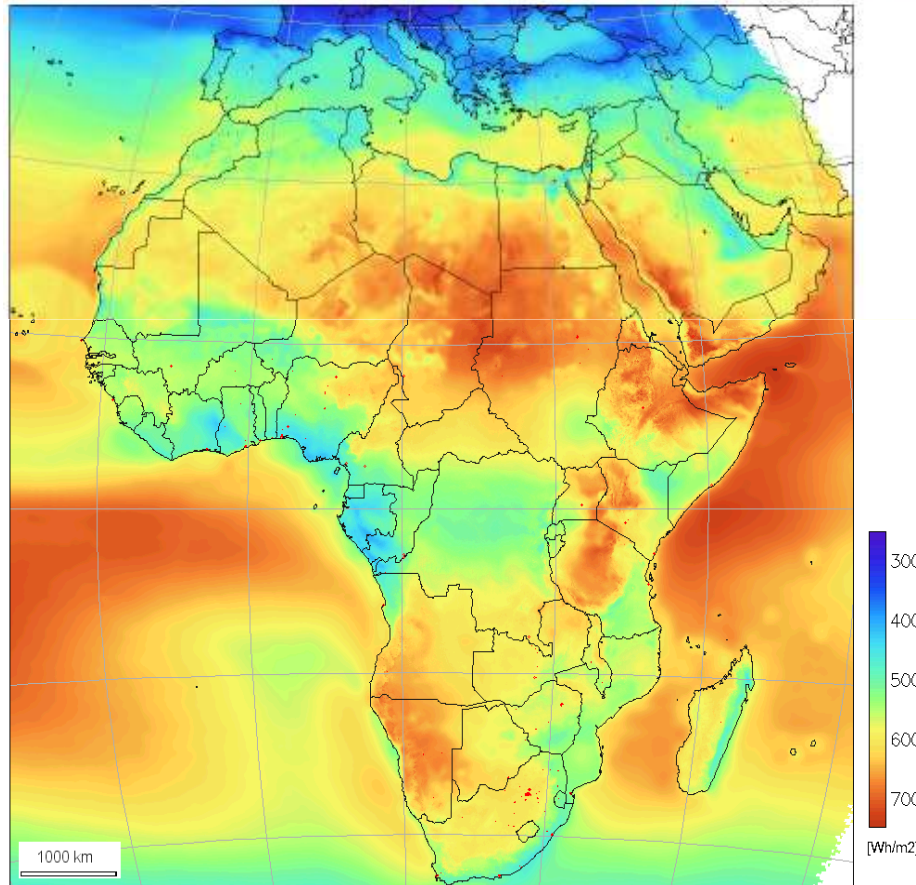


Source: GENI – Global Energy Network Institute, www.geni.org



Solar Energy Potential

Global horizontal irradiation (1985-2004)
(annual average of daily sums, Gh)



PV-GIS (c) European Communities 2002-2006
HelioClim-1 (c) Ecole des Mines de Paris/ARMINES 1985-2005

<http://re.jrc.ec.eu.int/pvgis/pv/>

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).

Source: GENI – Global Energy Network Institute, www.geni.org

Current solar power installed 102.2 MW

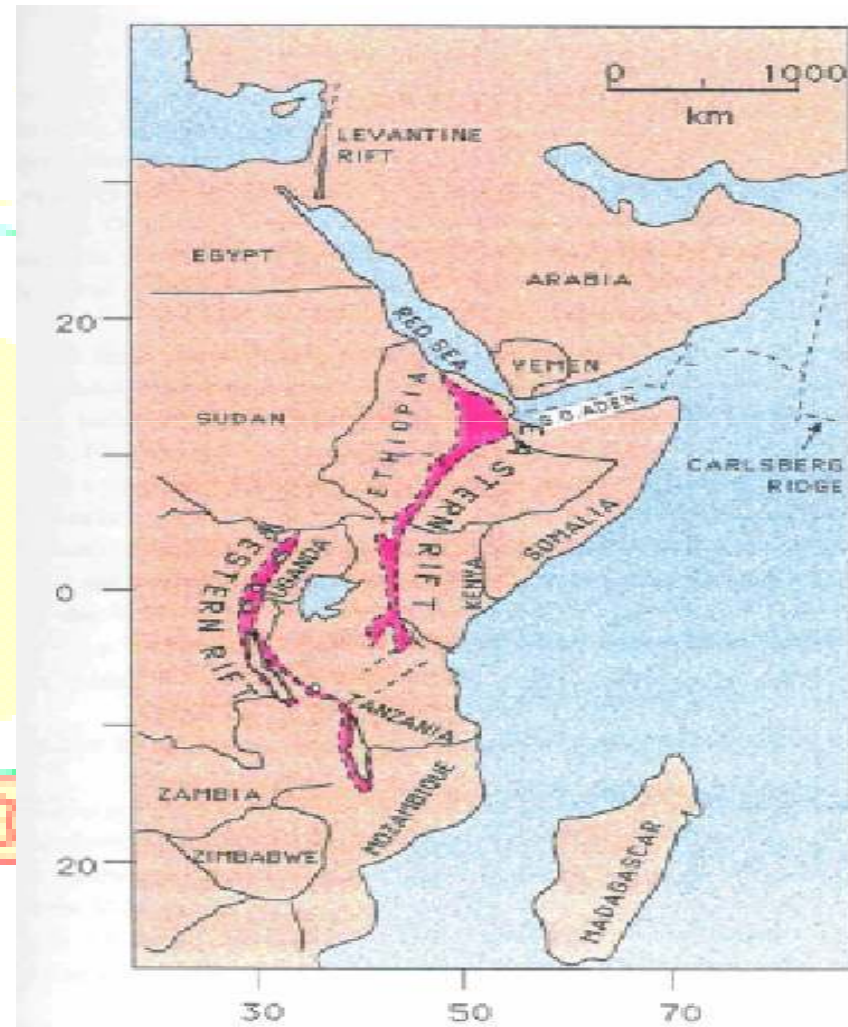


Geothermal Energy Potential

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.





Strategy and Role of the AUC for Development RE



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.



REGIONAL GEOTHERMAL PROGRAMME



- **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

**GEOHERMAL RISK
MITIGATION FACILITY
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

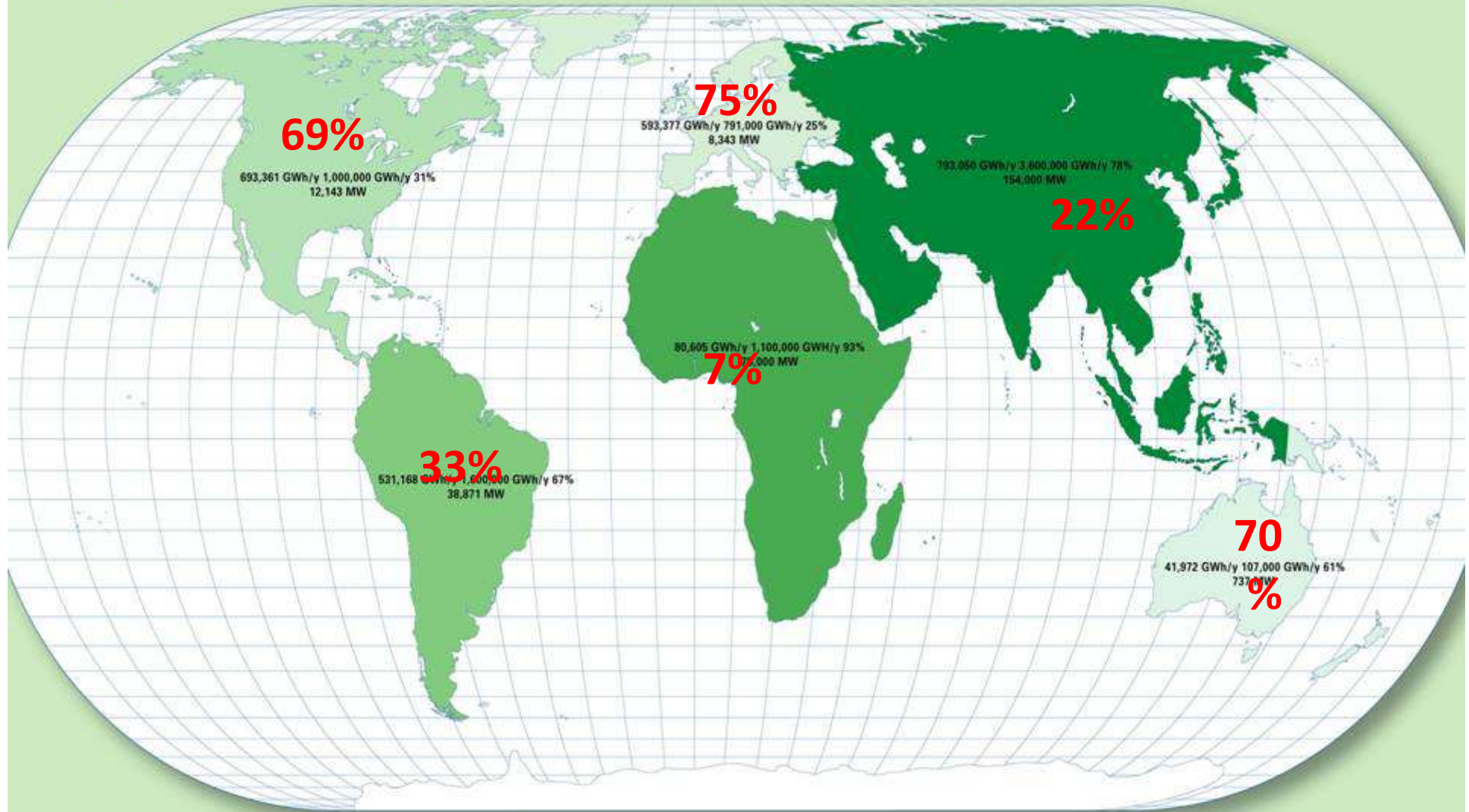


The main outputs of this EGM meeting are:

- Modern bioenergy development can help enhance energy access particularly in rural Africa
- The need to develop a continental policy and regulatory frame-work
- 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





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 for 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



PROGRAMME FOR INFRASTRUCTURE DEVELOPMENT IN AFRICA (PIDA)



- **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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