

African Utility Week

“Governmental Approach to Kenya’s future Energy Mix ”

Thuo Njoroge Daniel



Energy Economist ,
Lecturer Karatina University , Kenya

15 - 17 May 2018

CTICC, Cape Town, South Africa

www.african-utility-week.com

The Abstract

Introduction

This research paper offers an Analysis of the energy mix in Kenya ,what govt of Kenya plans On the future energy mix & Policies and strategy that are being put in place to attain target energy mix .

The article further indicates how increase in energy access in to the National grid leads to reduced cost of living that does translates into reduced production cost :

The paper then concludes with Policy descriptions that all stake holders mainly govt ought to put in place in order to attain the desired energy mix .

Introduction

A large population of the Developing world does not have Access to modern energy service ,despite the fact that in Kenya just as in the case of other Africa Countries having richness in fossil fuel & Massive Renewable energy potential .

Access to energy resources developmental challenges in Kenya , there is therefore the need to have Reliable , affordable & sustainable energy

Among the Energy source being considered by Kenya include :

- ▶ Nuclear Energy
- ▶ Geothermal
- ▶ Hydropower
- ▶ Marine energies
- ▶ Petroleum & Coal
- ▶ Renewable Energy

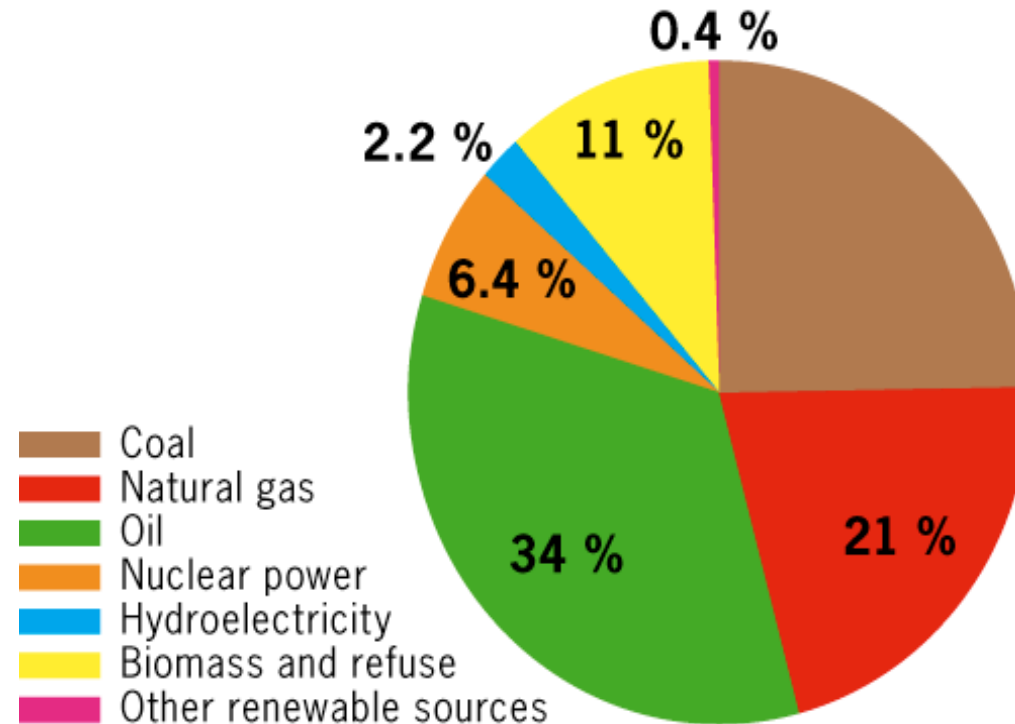
Global Energy Mix

Figure 1

Global energy mix

Source :

World energy Council 2013



- ▶ Hydropower & traditional biomass are already important factors of global energy mix
- ▶ Renewables contribute about 2% of present world Energy use

Global Energy Mix ...cont.

- ▶ Biomass , wind & geothermal energy are commercially competitive and are making relative fast progress
reason why the higher trajectory .

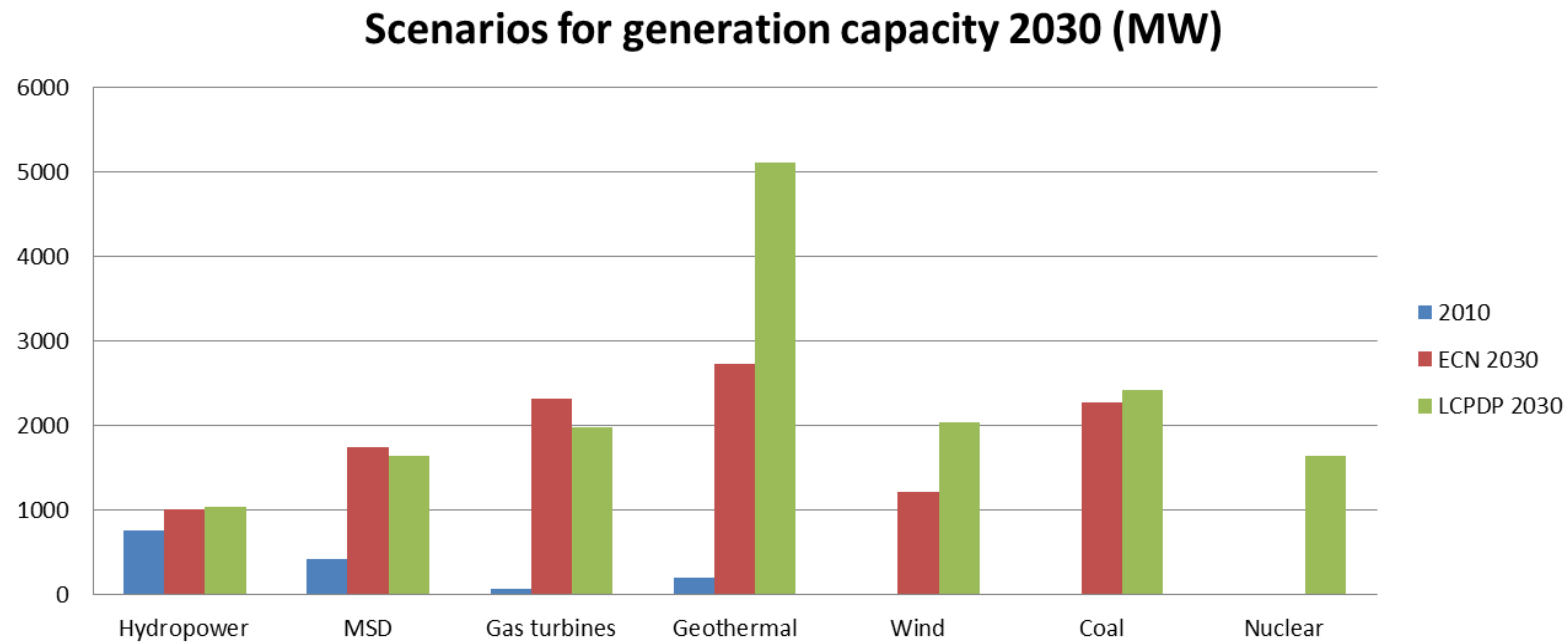
A. Kenya' s Current Energy Mix

Kenya's Economic blue print ***Vision 2030*** identifies energy as a critical component in economic growth as well as improved standard of living and enhanced National security Energy has also been identified as key enabler for the infrastructural development .

- ▶ The Govt of Kenya has through session paper No 4 of 2004 a policy document which govern Energy Sector in Kenya appreciate for Energy diversification
 - ▶ Expressly emphasis the Need for Energy Security
 - ▶ The Policy Documents emphasis on issues of Renewable Energy
 - ▶ Also issue of oil and Gas , geothermal and Nuclear Energy are factored in

Kenya's Projected Energy Mix by 2030

Figure 2 :



Source: Ministry of Energy & petroleum (2015)

Nuclear Energy

- ▶ Land Scape In Kenya :
- ▶ Kenya envisages to have 4 Nuclear in the next 10 yr.- each generating 1 GW
- ▶ By 2030 Energy demands are going to be 50GW hence energy diversification is inevitable .
- ▶ Its therefore imperative to note that Energy diversification is key to attainment of Vision 2030 development agenda .

Progress On Nuclear

Policy & Legal instruments as well as Institutional framework

- ▶ **Draft Energy Policy 2014 [Balanced & Diversified Energy Basket]**
- ▶ **Environmental Mgt & Coordination Act (EMCA)**
- ▶ **Kenya Nuclear Electricity Board**
- ▶ **International Instruments (Kenya is keen on having them Ratified)**
 - ▶ **The convection early of Notification of nuclear Accidents**
 - ▶ **The convection for assistance in the case of Nuclear Accidents or Radiological Emergency**

[to Meet Challengers of Chernobyl, Fukushima Nature]

Progress On Nuclear...cont.

- ▶ The joint Convention on the Safety of spent fuel mgt on Safety of Radio active waste as Recommended by the (IAEA)
- ▶ Other Broader Policy frame work in[EACC, Economic sabotage ,Macro Economic Environment , Nuclear Energy Bill]
- ▶ IAEA visit The integrated Nuclear Infrastructure Review in 2016

Renewable Energy.

As a way to reduce Overreliance on thermal Energy ,the Government of Kenya

put in place The feed-in-Tariffs Policy in 2008 .

- The policy covers Wind , Small Hydro& Biomass with the capacity not exceeding 50MW , 10MW & 40 MW .
- Session paper No 4 of 2004 & Operationalization of Energy Act NO 12 of 2006 to spur generation of renewable energy to meet projected Demands
- 2010 the policy was further revised to factor in Geothermal ,Biogas , Municipal waste & Big Solar farm
- In 2008 Govt developed Wind Atlas
 - a) 300MW Lake Turkana wind Power Project (not yet connected to the grid)
 - b) 110MW Wind project in Ngong and Kinagop (yet to be Intitiated)

Policy Recommendations

From the Analysis of the study the following recommendations are proposed :

- A comprehensive strategy should be developed & adopted in respect to bio-energy as up-scaling of this sector could potentially lead deforestation and negatively affect food security
- Enhance long-term target policy on renewable energy as this will lead to energy security .
- There is need for Further publication on National Solar & wind atlas , as this further enhance investor engagement in this sector
- Govt of Kenya needs to make Price of Land predictable in respect to compensation that have made so difficult for project uptake [Land Value Index]
- There is need to re-examine the Renewables energy policy [Fits Vs Auction] from time to time so as to come up with an appropriate policy

Policy Recommendationscont.

- ▶ Establishment of the Nuclear bill [regulator in Nuclear energy]
- ▶ Ratify international Instruments in respect to nuclear industries
- ▶ Address issues of Human resource development & training on this nascent sector .
- ▶ Govt should ensure through policy that vendors awarded contract to build demonstrate the ability integrate the latest and highest version of Nuclear Reactor [safety , waste management as well as radiations]
- ▶ There is need for a comprehensive deliberations of Financing options by all stake holders

Thanks for you Patience