



KENYA EMBASSY STOCKHOLM

**CLEAN TECH: KENYA - A
NATION OF OPPORTUNITIES**

**OTEC Africa Conference 2013, Borås, Sweden
15-16 October 2013**

**DR. JOE SANG
AMBASSADOR**



KENYA EMBASSY STOCKHOLM

INTRODUCTION

- Kenya is situated on the Eastern part of the African Continent. It lies **5 degrees North** and **5 degrees South** latitude and between **24** and **31 degrees East** longitude.
- It is almost bisected by the equator and borders the Indian Ocean, between Somalia and Tanzania with a coastal strip of more than **250 miles**.
- Geographically, Kenya is placed at the strategic congruence of the Indian ocean and is the gateway to the heart of Africa.

 **KENYA EMBASSY STOCKHOLM**

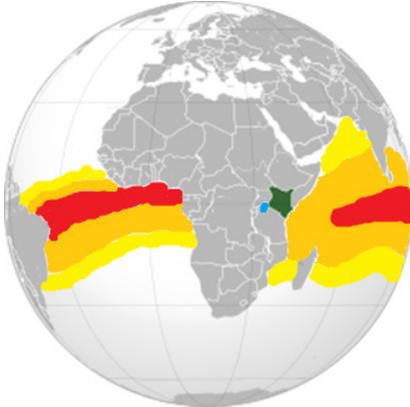
INTRODUCTION

- ❑ Due to it's geographic position, the Port of Mombasa serves the entire East African region and the Ports capacity has been increased in order to increase efficiency.
- ❑ Economically, Kenya has the largest Economy in East and Central Africa and has a robust and competitive economy.
- ❑ Kenya also possesses a deep pool of educated and skilled manpower making the country the lead Manufacturing, Commercial and Financial hub in Eastern and Central Africa

 **KENYA EMBASSY STOCKHOLM**

INTRODUCTION

- ❑ World geographical positioning of Kenya



- ❑ Kenya has been identified as being located in an area where use of **Ocean Thermal Energy Conversion technology (OTEC)** is most efficient.



KENYA EMBASSY STOCKHOLM

BACKGROUND

- ❑ Long-term Development **Blue print** known as **Vision 2030** aims to transform Kenya into a globally competitive and prosperous country and high quality of life by 2030.
- ❑ Vision is based on achieving an annual growth rate of **ten percent** annually from the year 2012.
- ❑ Kenya has **47** counties which require major investments.
- ❑ Kenya on a path to high economic growth and has emerged as the regional economic, trading and investment frontier.
- ❑ **World Bank projects a higher growth rate of 5.7% in 2013 supported by high investment and low interest rates**



KENYA EMBASSY STOCKHOLM

BACKGROUND

- ❑ **Vision 2030**, intends to create investment opportunities in Tourism, Agriculture, Transport and Infrastructure, Manufacturing, Communications, Energy, Building and Construction and Pharmaceuticals.
- ❑ The government of Kenya has acknowledged the need of having a steady source of energy supply as a prerequisite of achieving this enormous project which was embarked in 2007.
- ❑ In order to transform Kenya into a newly Industrialised, Middle Income country and provide a high quality of life by the year 2030, Power generation is a major pre-requisite for the realisation of the vision.



KENYA EMBASSY STOCKHOLM

PRIMED FOR TAKE-OFF

- Described by the IMF as “**one of the success stories of Africa’s economic resurgence**”.
- Financial inclusion is advancing rapidly, giving millions of people a stake in the economy.
- Foreign investment flows have risen and boosted the stock market.
- Success is the result of significant reforms implemented and supported by strong macroeconomic policies.
- It has overhauled its institutions by moving to a decentralised form of government in line with the 2010 Constitution.



KENYA EMBASSY STOCKHOLM

PRIMED FOR TAKE-OFF

- Key far reaching reforms that have created conducive environment for doing business, include:
 - better and more accountable management of public resources
 - upgrade of energy and transportation infrastructure.
- Mobile and agent banking have provided financial services to millions who never had such access and can now better deal with unforeseen events that may affect their livelihood.
- Sound monetary and fiscal policies have reduced vulnerabilities:
 - taming inflationary pressures;
 - increasing international reserves;
 - lowering the current account deficit; and
 - improving both public and external debt positions.



KENYA EMBASSY STOCKHOLM

ENERGY PROVISION

- ❑ Electric power supply in Kenya falls below demand.
- ❑ According to projections, the current power demand is estimated to be increasing at a rate of **7%** annually for the next ten years to reach **2263 MW** by 2018. Demand in 2009 was **1105MW**, and **1191 MW** in 2011.
- ❑ The growth has been necessitated by consumer connection policy and anticipated robust economic growth performance.
- ❑ In 2009, the annual electricity consumer connections were **133,047** compared to 2011 where connections stood at **309,287**. The average annual rate of connection therefore stands at **69%**.



KENYA EMBASSY STOCKHOLM

ENERGY PROVISION

- ❑ This projected growth in demand requires a corresponding increase in capital outlay to provide the needed capacity and associated supply and distribution infrastructure.
- ❑ The government envisages that the Private sector and investors will play a key role in providing the required capital either on their own or through *Public Private Partnerships*.
- ❑ The projected growth in Electricity demand, therefore, presents a golden opportunity to invest in the Energy sector.



KENYA EMBASSY STOCKHOLM

TRANSFORMER MANUFACTURING

- ❑ Atleast **20,000** transformers are needed within the next five years and an additional **2000** for repairs annually.
- ❑ This necessitates the construction of a Transformer Manufacturing Factory.
- ❑ The proposed Factory with an estimated cost of **USD 60 million** will also benefit from both the EAC and COMESA markets.
- ❑ This factory will trigger other related primary and secondary industries. There is also potential of other Equipment such as Switchgears, Insulators and Electricity Energy meters.



KENYA EMBASSY STOCKHOLM

RENEWABLE ENERGY

- ❑ The government is keen on **Wind** and **Solar Energy** for industrial and domestic use and is supporting Environmental friendly technologies.
- ❑ So far more than **800** learning institutions have been equipped with **PhotoVoltaic** (PV) Panels.
- ❑ It is estimated that the growth in PV generated power is **1MW** per annum and this is likely to increase.
- ❑ Investing in this area will also provide for the EAC and COMESA regions.
- ❑ Northern Kenya area and other arid areas have strong reliable sunshine throughout the year



KENYA EMBASSY STOCKHOLM

RENEWABLE ENERGY

- ❑ Recent studies indicate that the Wind in areas such as Northern Kenya, Ngong hills and the coast enjoy wind speeds of **8-14 metres per second**, approximately **50 kilometres per hour**.
- ❑ Areas such as Marsabit, Laisamis and Samburu have the potential to produce more than **150MW** of Electric Energy.
- ❑ Kenya intends to increase its Power sector substantially, primarily by expanding the use of Renewable Energy
- ❑ The Plan is to increase Power generation by an additional **5000 Megawatts** in the next 3 years.



KENYA EMBASSY STOCKHOLM

GEOHERMAL ENERGY

- ❑ The potential of Geothermal power is estimated to stand at **7,000MW to 10,000MW**.
- ❑ **504MW** of Geothermal electricity has so far been harnessed.
- ❑ In line with **Vision 2030** its Development Blue print, the Kenya government is targetting **5,000 MW** of Geothermal Electricity by 2030.
- ❑ The Geothermal development Company has pledged more than **USD 400 million**, which constitutes atleast **40%** of the needs for a 10 year plan to produce **2000 MW**.



KENYA EMBASSY STOCKHOLM

THE WATER SECTOR

- ❑ Kenya is currently classified as a water deficient country, with low levels of access, particularly in urban slums and in rural areas.
- ❑ The Coastal region which may be of interest to OTEC Africa, has always been faced with a water shortage due to the development of Industry and population increase.
- ❑ Government has plans to develop a high capital investment project that is intended to deliver about **160,000 cubic metres/day** of water from **Mzima springs** to Mombasa, over a distance of **220 Kilometres**.



KENYA EMBASSY STOCKHOLM

WHY INVEST IN KENYA?

- ❑ An Energy hungry nation.
- ❑ Convenient location for Hub operations. Easy access to the rest of the African region through road, railway, sea and air.
- ❑ Easy access to the international markets, in Europe, Asia and the USA.
- ❑ Adequate availability of business facilitation support services namely, Finance, Insurance and Transport.
- ❑ A highly developed and well diversified human resource base.



KENYA EMBASSY STOCKHOLM

WHY INVEST IN KENYA?

- ❑ With a convenient time zone (GMT +3), Kenya positions itself as a leading destination for Call Centers, Business Process Outsourcing, Software development and other related activities
- ❑ Investors should take advantage of Kenya's strategic location:
 - Gateway to East African community (EAC)
 - Common Market for eastern and southern Africa (COMESA)
 - A combined market potential of more than **400** million people.



KENYA EMBASSY STOCKHOLM

WHY INVEST IN KENYA?

- ❑ Large scope for Investment and this is articulated in the Kenyan development blue print, **Vision 2030**.
- ❑ Need for development partners and investors especially in the water and electricity production as current water and electricity consumption is not sufficient.
- ❑ It is projected that the infrastructure and building will increase with the devolvement of government.
- ❑ There exists a favourable weather/climate with the presence of the **Agulhas current** - a warm current flowing from **27 degrees South** to **40 degrees South** ideal for the optimum production range of the OTEC Africa Electricity and Water purification Technology.

 **KENYA EMBASSY STOCKHOLM**

CONCLUSION

- ❑ There are huge opportunities for OTEC Africa in the area of power generation in Kenya and within the EAC and COMESA region.
- ❑ Vision 2030 envisages the expansion of the existing ports as well as the creation of a new Port of **Lamu**.
- ❑ The Duty Free Port/Special Economic Zone at **Dongo Kundu** in the Mombasa area will require a steady source of Energy and Water.
- ❑ The Development of the **New Transport Corridor** will open up the area and create industries including manufacturing especially in the area of **Fish processing**.

 **KENYA EMBASSY STOCKHOLM**

CONCLUSION

- ❑ The hospitality of the locals is well known over the world with the word "JAMBO" emanating from the region.
- ❑ Proximity of the Kenyan coast to Tanzania is an added value and any surplus electricity may be exported.
- ❑ Docking facilities are the best within the region and Maritime Security is secure.
- ❑ The market is readily available for products.





KENYA EMBASSY STOCKHOLM

CONCLUSION

- ❑ It is my sincere hope that you do take advantage of the great Energy production and Economic activity potential that exists in Kenya.
- ❑ It is an exciting and inspiring time to do business in Kenya!
- ❑ It is the time to take advantage of the lucrative investment opportunities that abound in Kenya, the hub of East Africa and the region.
- ❑ With these few remarks I invite you to invest in the '**Cradle of Mankind**' ... the **Gateway to Africa!**

I THANK YOU