

KENYA ENERGY SITUATION

**PRESENTED AT LES ENTRETIENS EUROPÉENS,
HELSINKI, FINLAND**

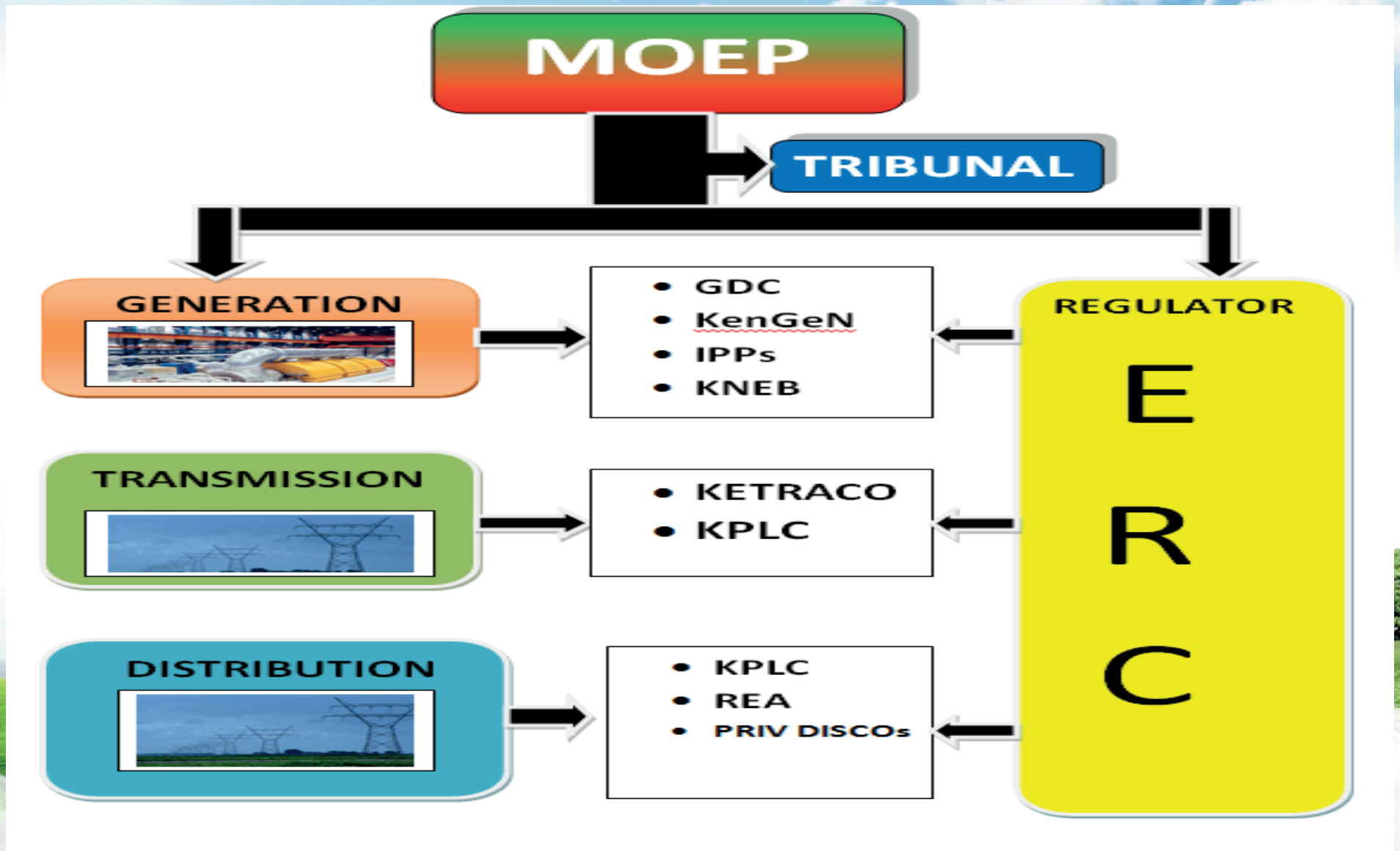
By

ENG. Erick Ohaga

**New nuclear: a response to the electrical changes
in our society in Europe ? 12 & 13 November, 2018**



KENYA POWER SECTOR STRUCTURE



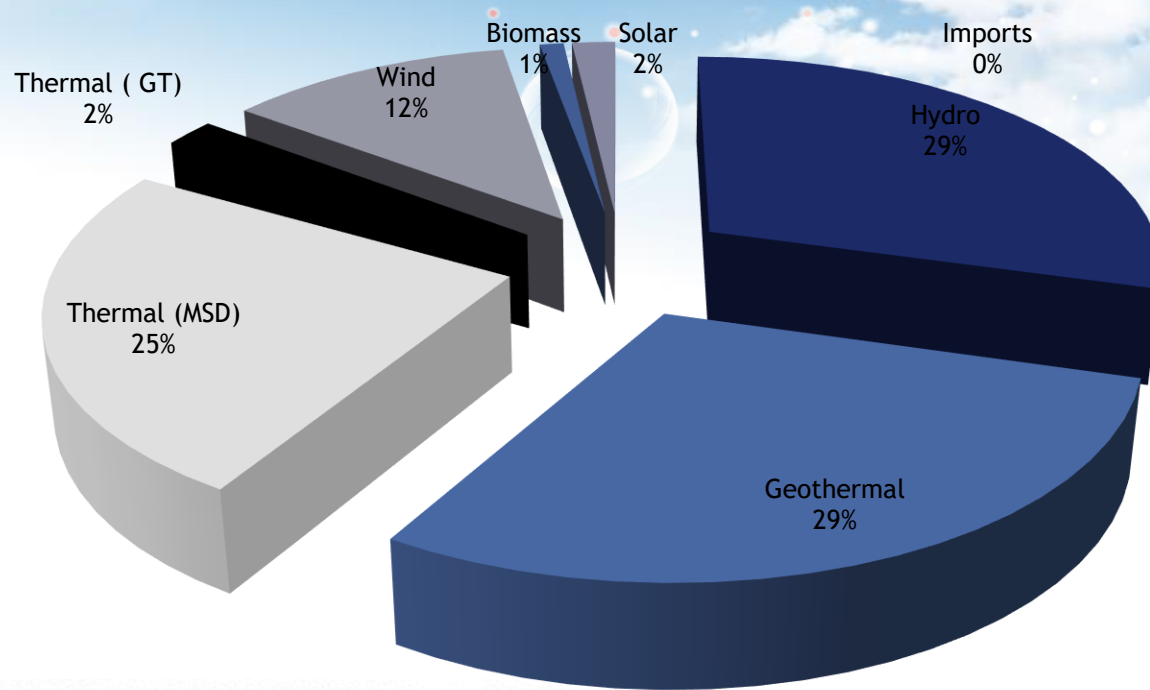
GENERATION STATUS

	Installed MW	Effective* MW	% (effective)
Hydro	826.23	805.02	31.2%
Geothermal	821.04	658.04	25.5%
Thermal (MSD)	689.25	661.36	25.6%
Thermal (GT)	60.00	56.00	2.2%
Wind	336.05	325.50	12.6%
Biomass	28.00	23.50	0.91%
Solar	50.97	50.45	1.95%
Imports	0.00	0.00	0.00%
Total Capacity MW	2,812	2,580	100.00%

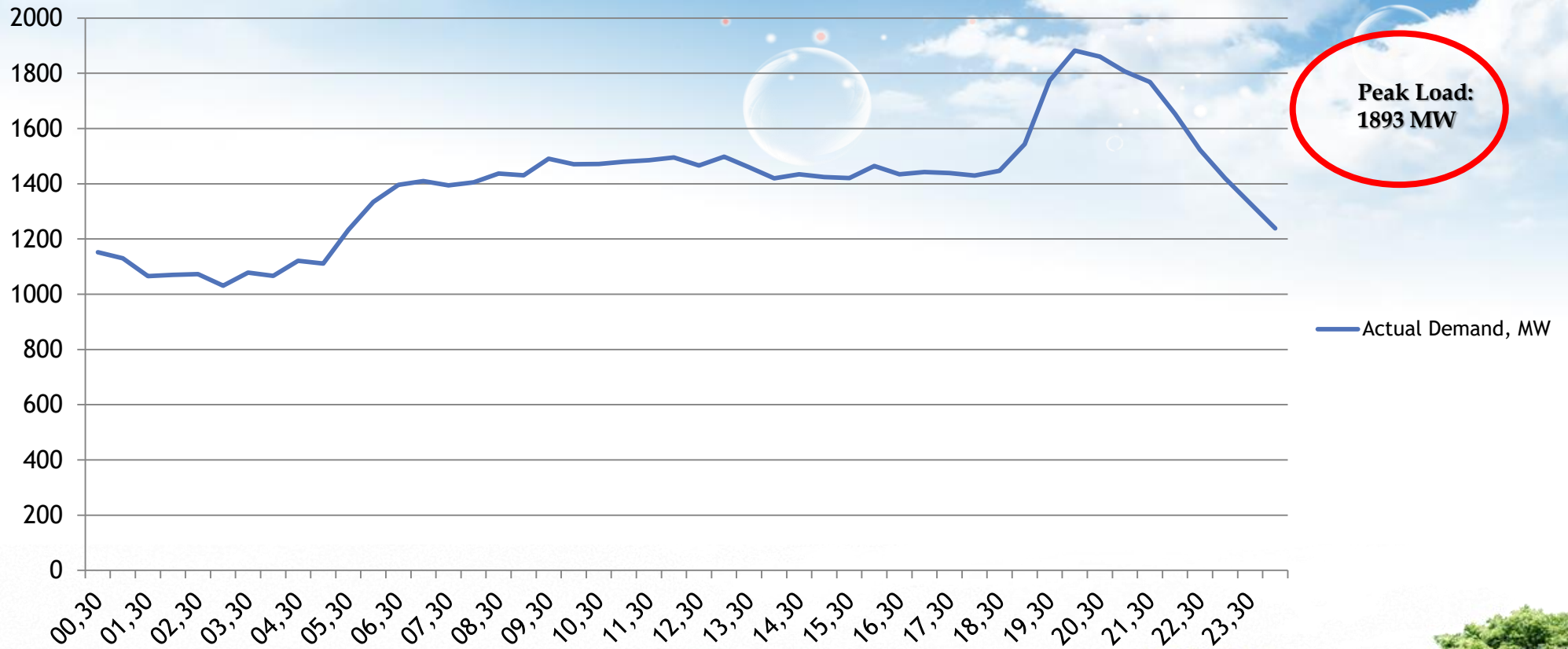
**Peak Load
1893 MW**



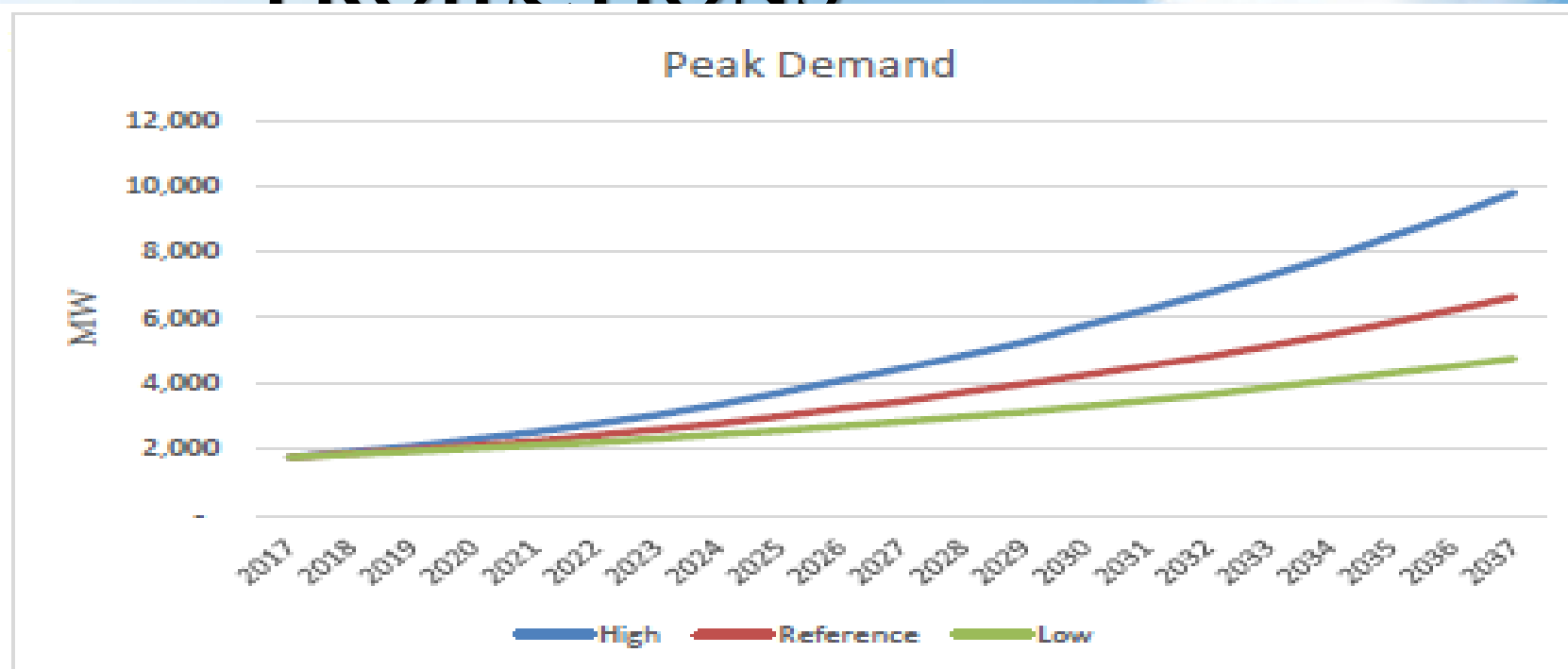
GENERATION BY TYPE



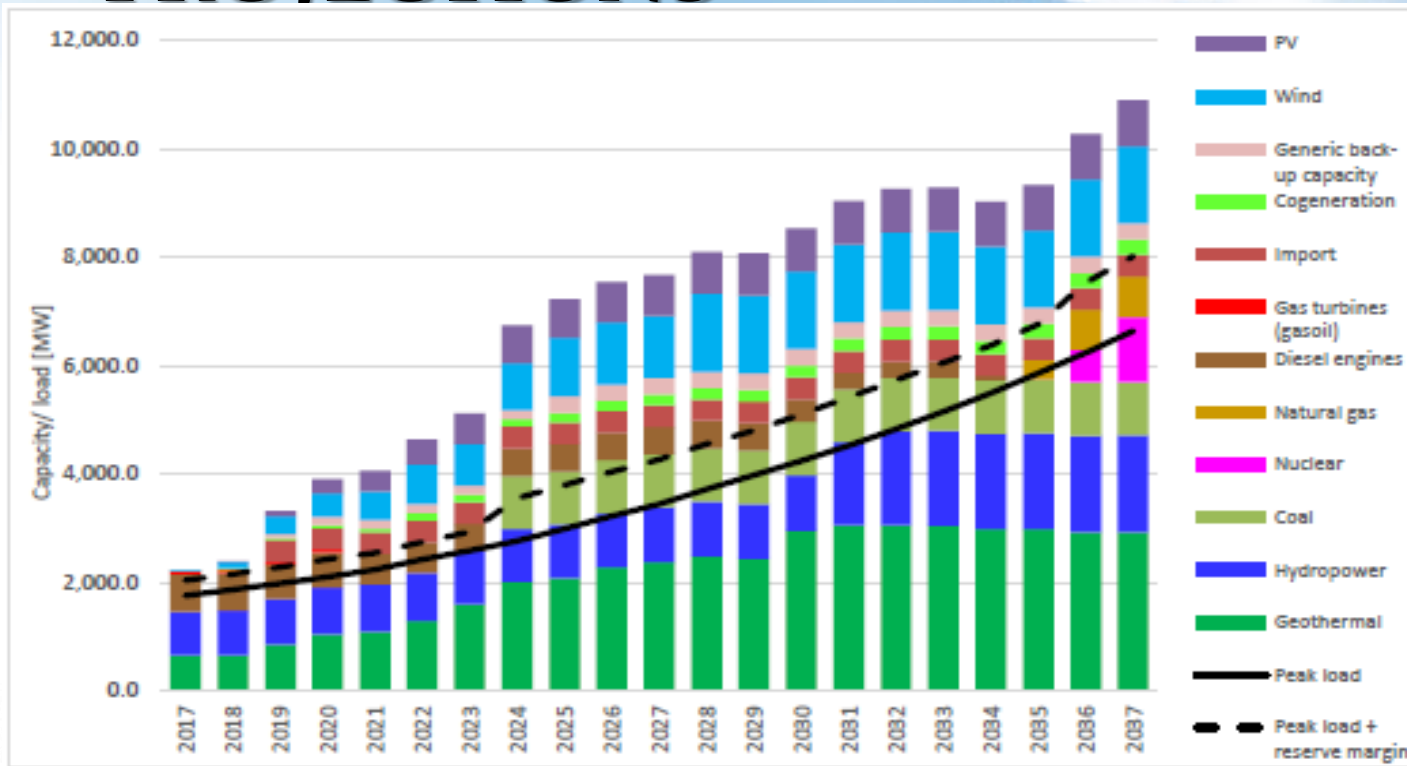
DAILY LOAD CURVE



ENERGY MIX PROJECTIONS



ENERGY MIX PROJECTIONS



ELECTRICITY ACCESS RATE

Kenya Electricity Access Rate- 73%

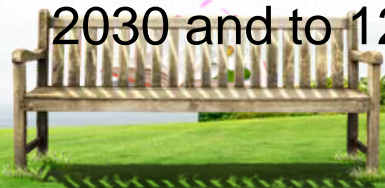
Africa Electricity Access Rate- 43% (600Million Africans have no electricity)

Kenya and Ghana Leading in Access Rate growth over last 5 years.



KENYA NUCLEAR POWER DEVELOPMENT

Kenya has identified its aim of transforming Kenya into a country providing a high quality of life to all its citizens by 2030. In order to achieve this it is recognized that significant development projects are planned that will increase the demand on Kenya's energy supply. Kenya needs therefore, to generate more energy at a lower cost and to reform the energy sector including the use of new sources of energy. Currently Kenya has an installed electricity generation capacity to support a peak load of 2800MW. Estimates indicate that this needs to rise to 8 GW in 2030 and to 12GW by 2037



KENYA POWER SECTOR STRUCTURE

The options for these new sources of energy are geothermal, coal, and renewable sources of energy, connecting to other energy surplus countries in the region and nuclear energy. Nuclear energy has the potential to be able to provide secure base load electricity over a long period and hence the Government has committed itself to actively consider the issues associated with nuclear power. The difficulties of achieving the installed electrical generation capacity without nuclear power in the long term are significant



KENYA NUCLEAR POWER DEVELOPMENT

However the effort and cost of preparing for a nuclear power programme are also recognised to be very large. Kenya has established the Nuclear Power and Energy Agency (NuPEA)) with the responsibility to fast track the development of nuclear electricity generation in Kenya. To achieve this NUPEA has actively participated in International Atomic Energy Agency (IAEA) projects, studies and workshops to develop an understanding of all of the issues associated with a nuclear power programme.



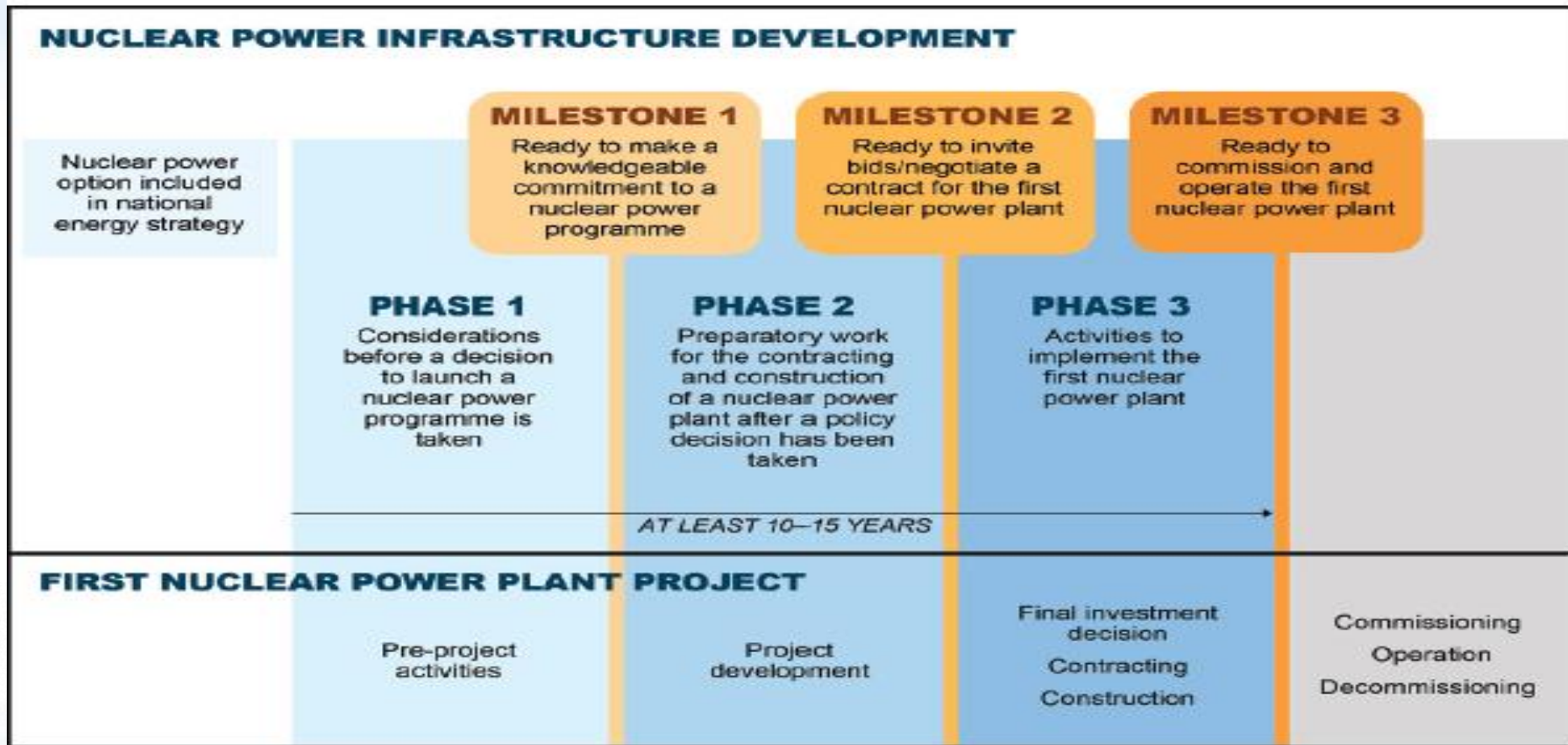
KENYA NUCLEAR POWER DEVELOPMENT

NUPEA has also made arrangements with countries that supply nuclear technology so that Kenya can receive detailed technical advice and assistance.

Strategic Plan identifies actions that Kenya will need to carry out in order to achieve international confidence that Kenya will become a capable and safe operator of all nuclear power facilities necessary to support the generation of electricity



KENYA NPP APPROACH



MILESTONES

ACHIEVED

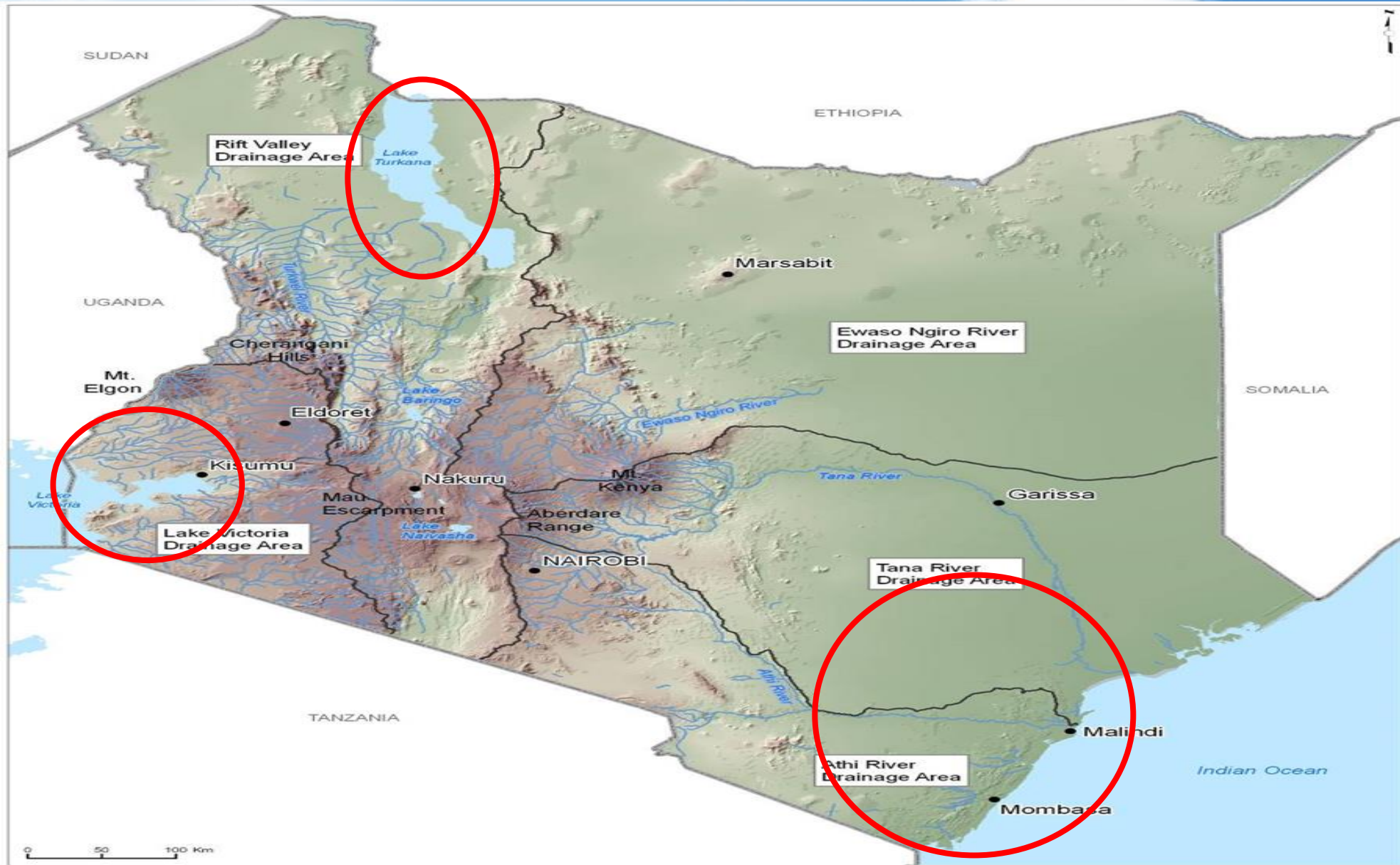
- Grid study - Done
- National HRD Strategy-87 Trained
- Siting activities:-Preliminary site studies have been done, commenced site characterization activities.
- Legislation:- The nuclear regulatory bill is at an Final Reading in parliament.
- Demand growth strategy
- Technology assessment

Conventions

- Convention on Nuclear Safety
- Convention on Early Notification
- Joint convention on safety of spent fuel



NPP POTENTIAL SITES



Thank You!

