



Republic of Kenya

# ENERGY DAY

Ministry of Energy and Petroleum

Sept 2013, Nairobi, Kenya



Ministry of Energy and Petroleum





## THE THRUST

---

**5000+MW FOR TRANSFORMING KENYA:  
ADEQUATE CAPACITY AT A  
COMPETITIVE TARIFF**

**KENYA**  
**VISION 2030**

The logo for Kenya Vision 2030 features three stylized, brush-stroke-like lines in black, red, and green, representing the colors of the Kenyan flag, positioned above the text.



- 1 MoEP Mission and Vision**
- 2 Energy Sector Structure**
- 3 Power Cycle: Generation to Distribution**
- 4 40-Month 5,000+MW Initiative**
- 5 Investment Opportunities in the Sector**



## Mission

... to facilitate provision of **clean, sustainable, affordable, reliable and secure energy** for national development while protecting the environment ...



## Vision

... affordable quality energy for all Kenyans ...



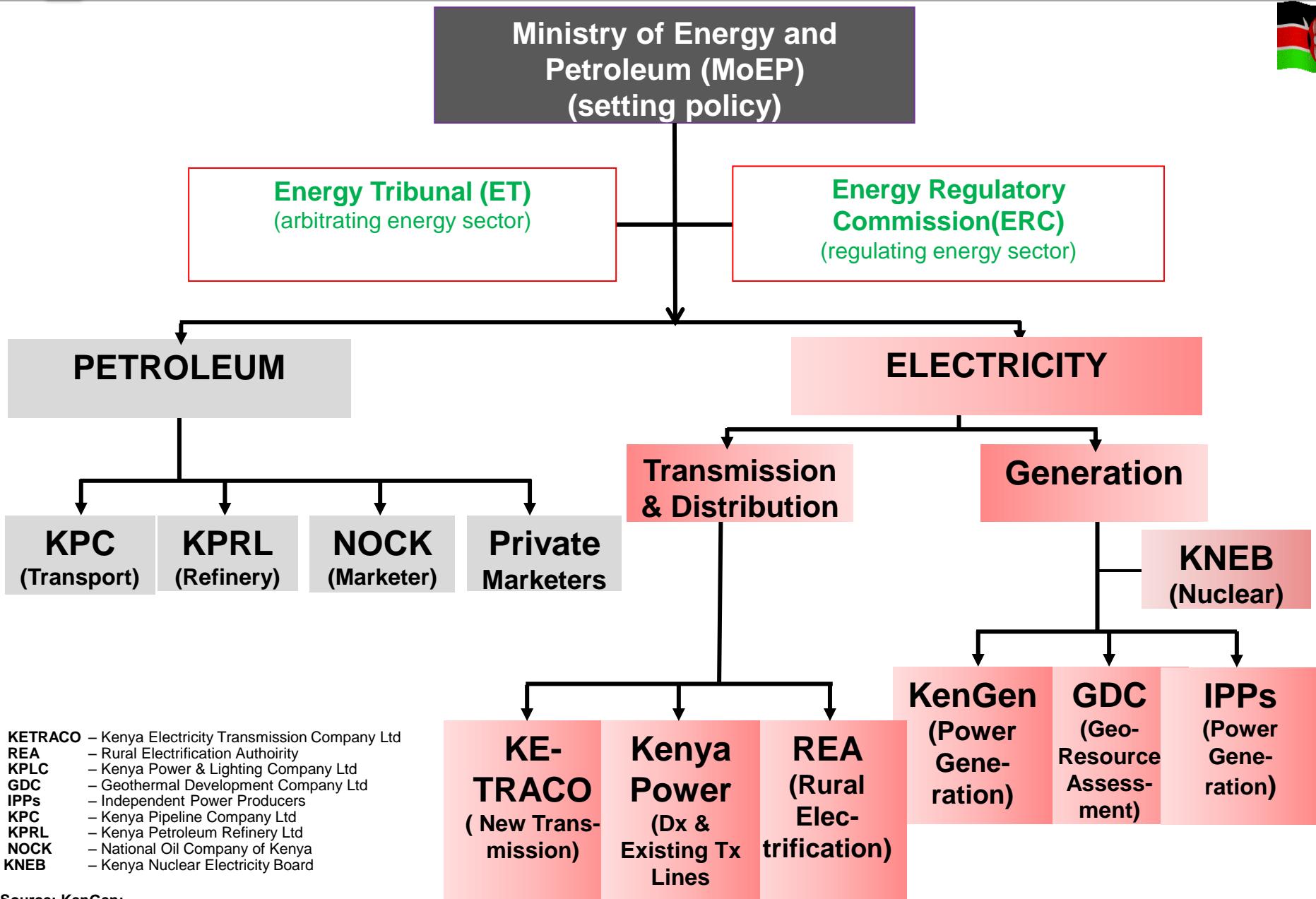
1. **Setting the Energy Sector Policy, Vision and Strategic Direction**

2. Developing Least Cost Power Development Master Plan

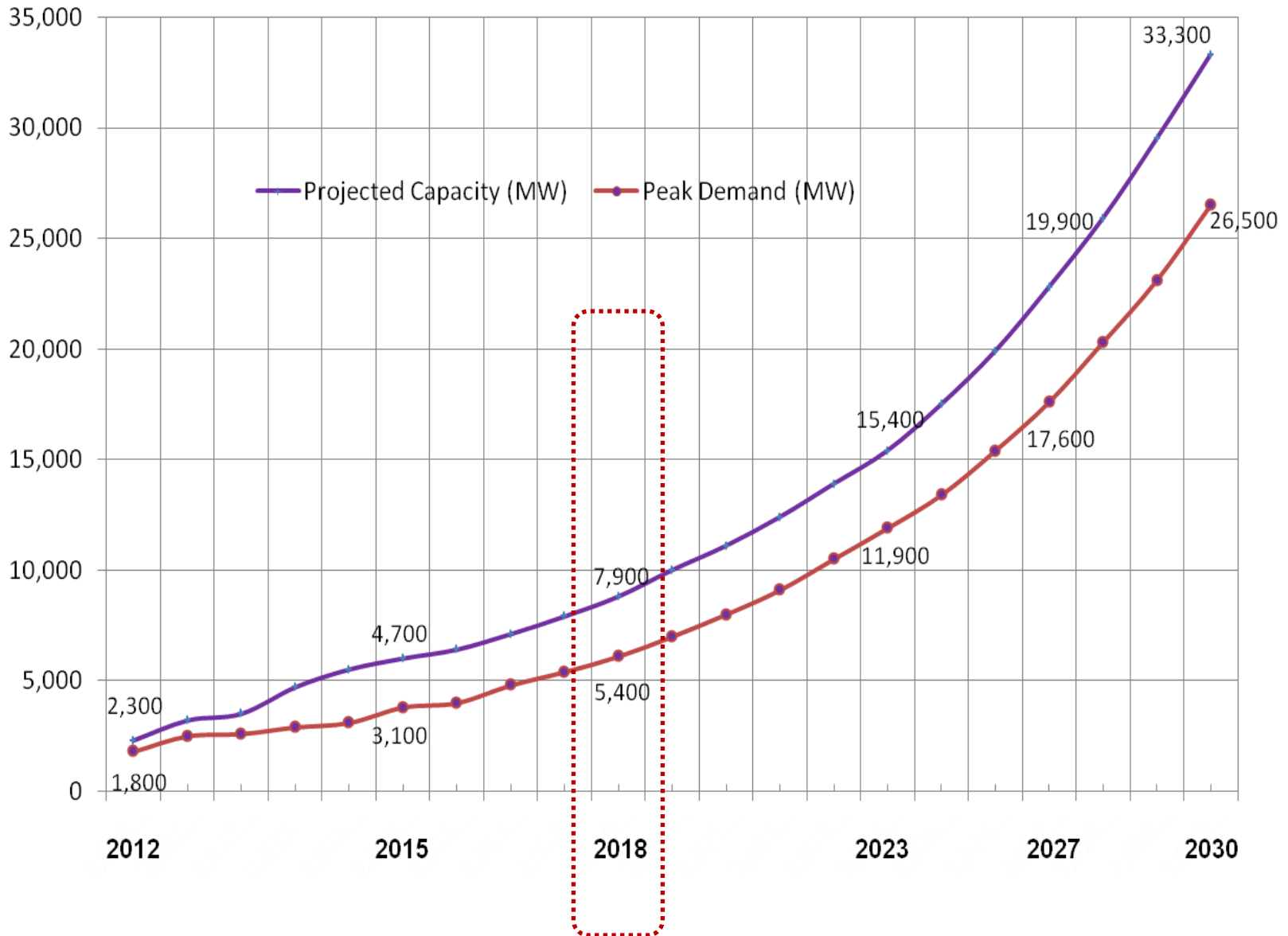
3. Undertaking Geological, Geophysical and Geochemical mapping for geo-energy minerals

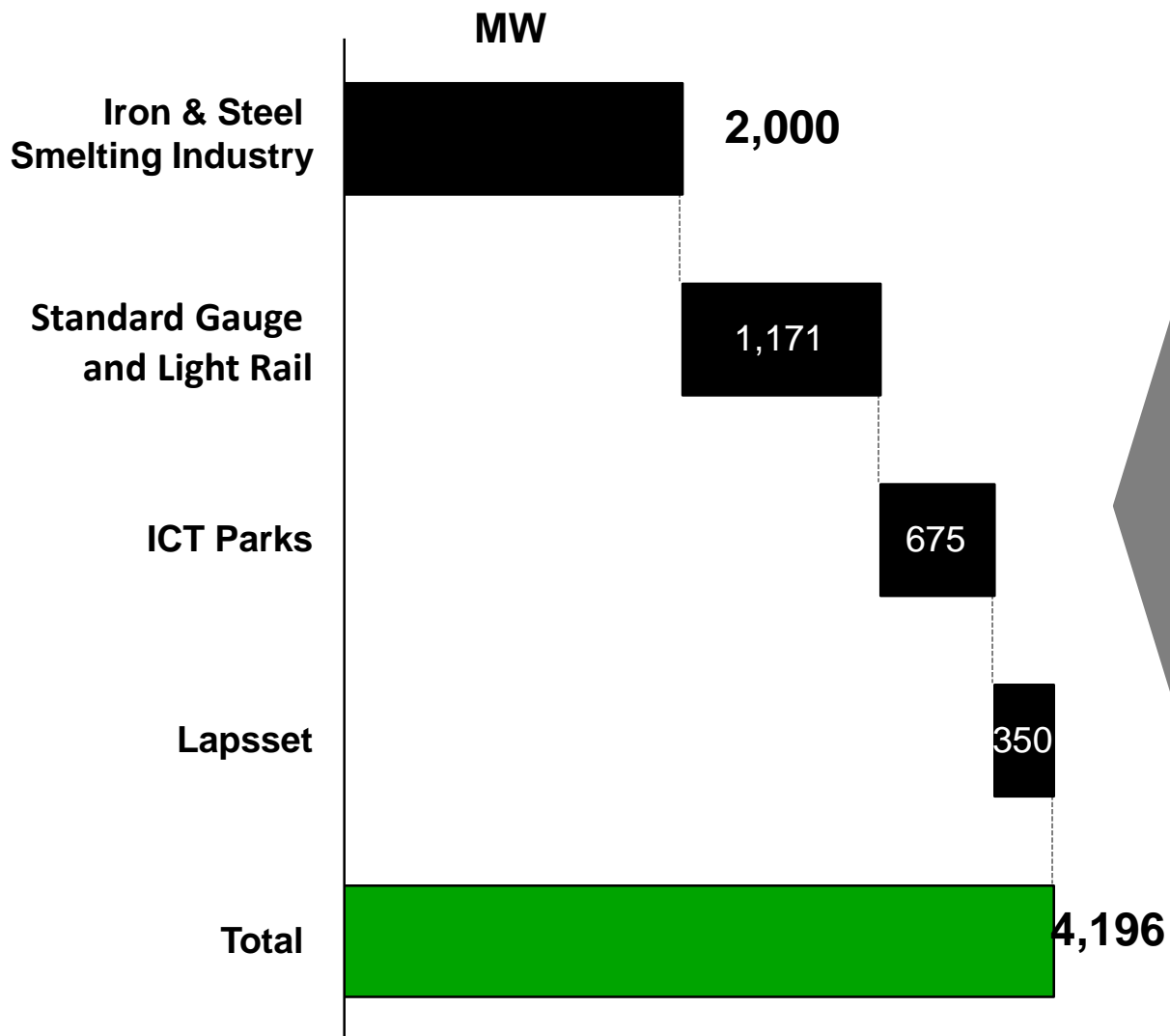
4. Promoting Development of Renewable Energy, Energy Efficiency & Conservation

5. Exploring, Appraising and Developing Petroleum Resources



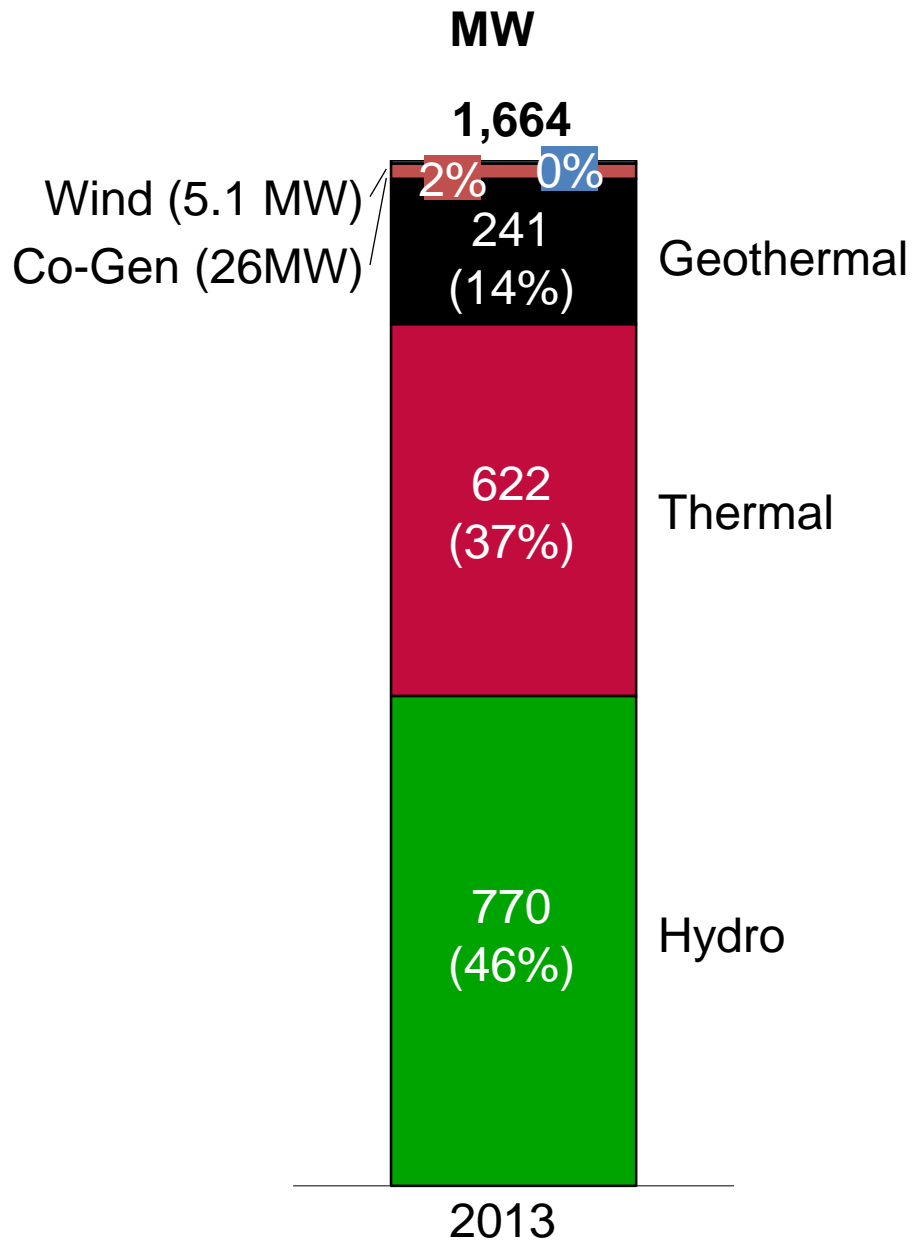
## 2. PROJECTED POWER DEMAND





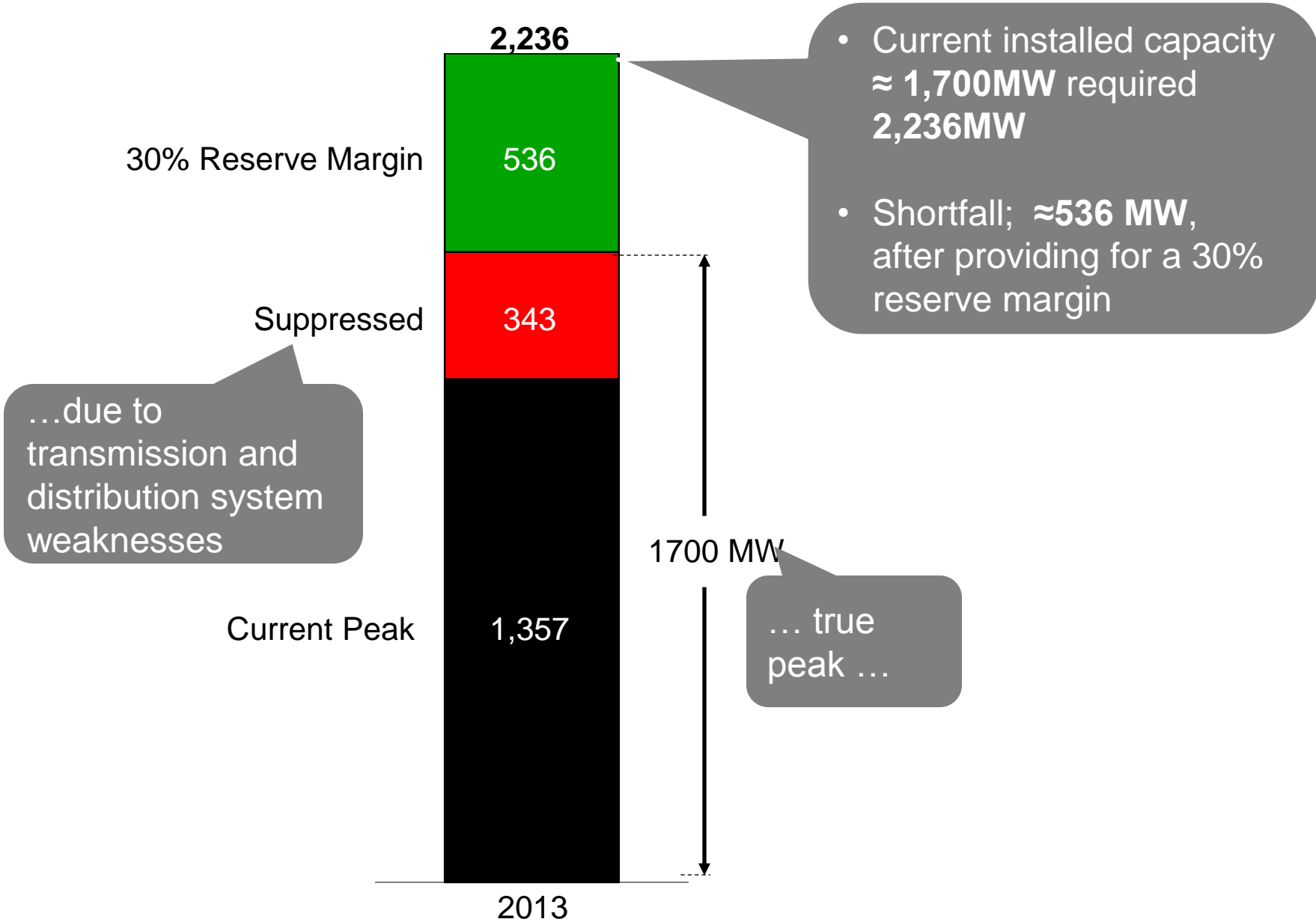
- Economic activities in counties
- Mining and Process industries
- Irrigation
- Electrification of rail;
- Powering resort cities and new economic zones.





## Challenges

- Inadequate generation capacity due to insufficient investment.
- Overdependence on hydro - thermal plants account for ~40% with unit cost UScts 26 – 36.
- Weak power evacuation and distribution infrastructure.





### Trans., Dist. & Substation Component

- 220kV ring around Nairobi
- 1,114km 132 kV lines by 2014 (~cost US\$ 250m)
- 1,760km 220/400kV lines by 2015 (~cost Kshs US\$738m)
- 2<sup>nd</sup> National Control Centre
- Underground Cables in Urban Areas
- Aerial(insulated) Bundled Conductors (ABC) in rural & peri-urban areas
- Additional substations across the country

### Connectivity Component

- Scaling up of connectivity
- Electrification of informal settlements with appropriate infrastructure

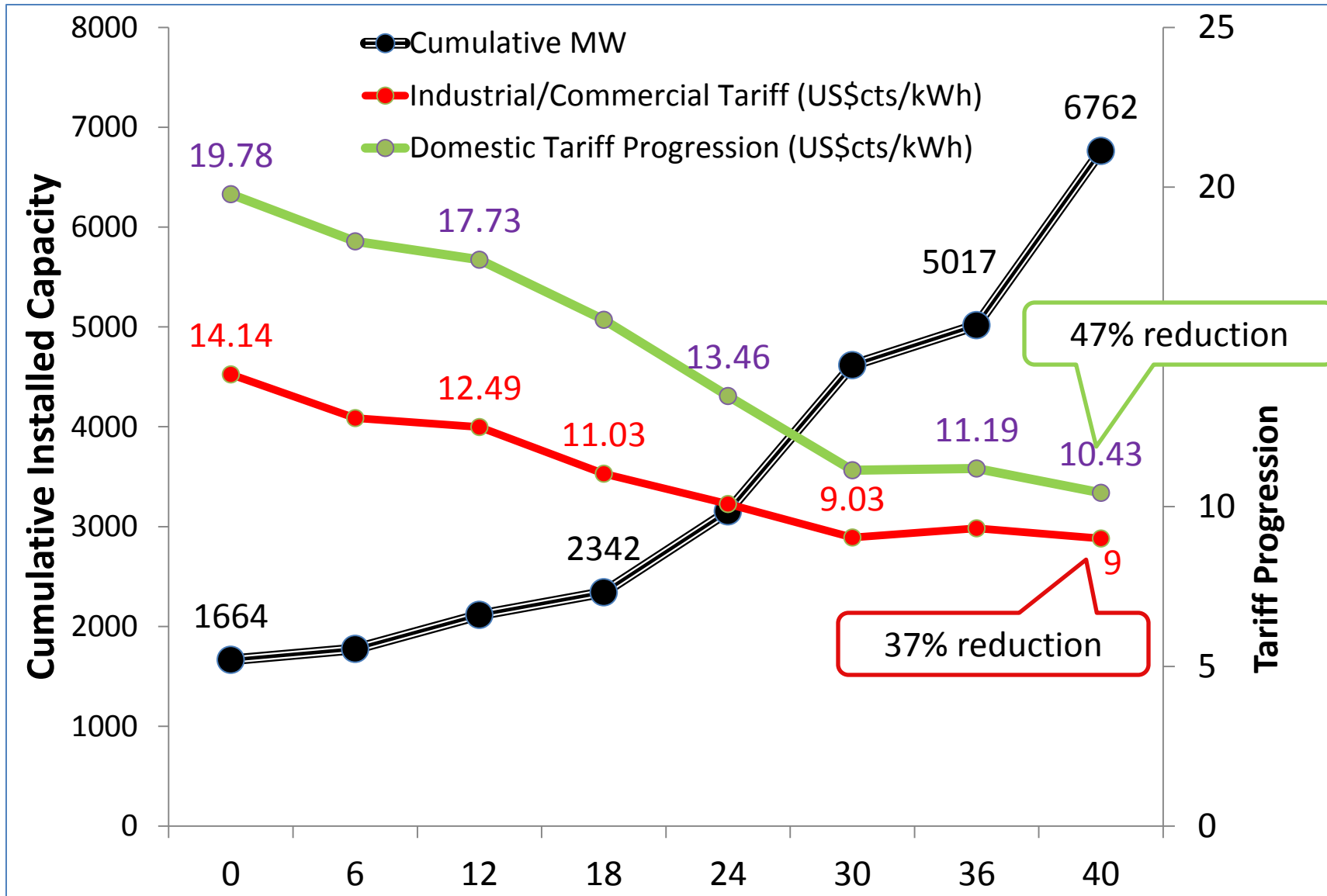
### 3. 40-MONTH 5000+MW Strategy



NEW CAPACITY ADDITIONS (MW)								
TIME IN MONTHS	6	12	18	24	30	36	40	TOTAL
Hydro	24	-	-	-	-	-	-	24
Thermal	87	163	-	-	-	-	-	250
Geothermal	90	176	190	50	205	150	785	1,646
Wind	-	-	20	60	300	250	-	630
Coal	-	-	-	-	960	-	960	1,920
LNG	-	-	-	700	350	-	-	1,050
Co-Generation	-	-	18	-	-	-	-	18
<b>Total</b>	<b>201</b>	<b>339</b>	<b>228</b>	<b>810</b>	<b>1,815</b>	<b>400</b>	<b>1,745</b>	
<b>Cumulative Additions</b>		<b>201</b>	<b>540</b>	<b>768</b>	<b>1,578</b>	<b>3,393</b>	<b>3,793</b>	<b>5,538</b>

61% is Renewable Capacity

# 3. TARIFF EVOLUTION WITH THE NEW CAPACITY



# 3. GEOTHERMAL PROJECTS REQUIRING INVESTORS



## PROJECT DESCRIPTION

## DUE DATE

1.

Olkaria Wellhead

**70 MW**

2014 December

2.

Olkaria V

**140 MW**

2015 December

3.

Olkaria VI

**140 MW**

2016 December

Total

**350 MW**

Estimated Capex

**US\$ 875m**



## PROJECT DESCRIPTION

## DUE DATE

1.

90 MW Menengai

2014 December

2.

50 MW Menengai

2015 June

3.

100 MW Menengai

2015 December

4.

100 MW Menengai

2016 June

5.

100 MW Menengai

2016 December

6.

50 MW Suswa

2016 June

7.

100 MW Suswa

2016 December

8.

200 MW Baringo

2016 December

Total

790 MW

Estimated Capex

US\$ 1,975m

**PROJECT DESCRIPTION****DUE DATE**

1. 170,000 m<sup>3</sup> Floating Storage & Regasification Unit 2015 June
2. Dredging; approximately 300m at Dongo Kundu 2015 June
3. 4x200MW Power Plant at Dongo Kundu 2015 June
4. Conversion 90 MW Rabai Power Plant to LNG 2015 June
5. Re-engineering 190 MW Kipevu I & III to LNG 2015 June
6. Re-engineering 70 MW Kipevu II to LNG 2015 June



**PROJECT DESCRIPTION****DUE DATE**

- |    |   |               |
|----|---|---------------|
| 1. | Construction of Coal Dry Cargo Handling Jetty | 2015 December |
| 2. | 3x320 MW Power Plant at Kilifi/Lamu           | 2015 December |
| 3. | 3x320 MW Power Plant at Kitui/Lamu            | 2016 October  |

### 3. TRANSMISSION PROJECTS...



#### PROJECT DESCRIPTION

#### DUE DATE

Dongo Kundu -  
Mariakani

50km, 400kV double circuit line for power evacuation from 700 MW LNG plant

2015 Jul

Mariakani -  
Kitui- Nairobi  
East Line

620km, 400kV double circuit line for power evacuation from 960MW Kitui Coal plant

2016 Dec

Menengai T-  
off Jinja Line

20km, 132kV for power evacuation from 90MW Menengai geothermal plant

2014 Dec

Kilifi/Lamu-  
Mariakani

80km, 400kV double circuit line for power evacuation from 960MW Kilifi Coal plant.

2015 Dec

### 3. TRANSMISSION PROJECTS...



#### PROJECT DESCRIPTION

#### DUE DATE

Silali-  
Menengai-  
Rongai

170km, 400kV double circuit line for power evacuation from Silali Geothermal Field

2016 Jun

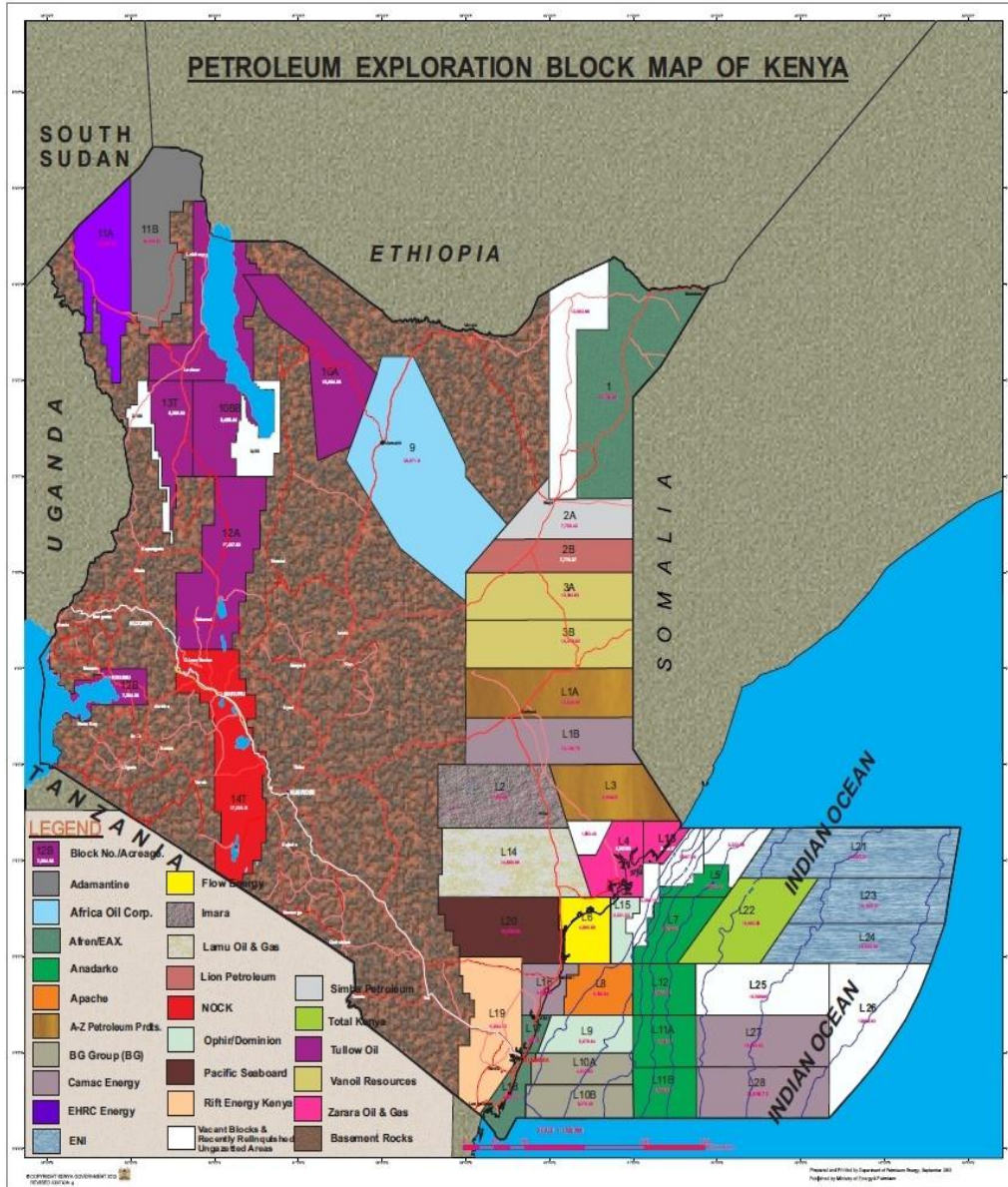
Isinya –  
Nairobi East

75km, 400kV double circuit line for power evacuation from 960MW Kitui Coal plant

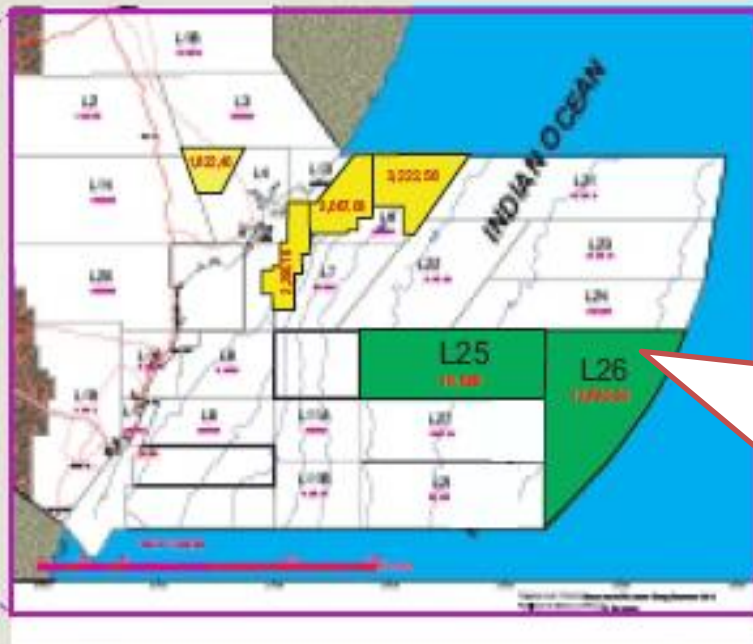
2016 Oct



1. Strategic Petroleum Reserves
2. Single Buoy Mooring Facility
3. LAPPSET



- 23 International Oil Companies (IOCs) in the 44 licensed blocks.
- To date 39 wells have been drilled
- Successful Wells
  1. Ngamia 1 - Oil discovered
  2. Twiga 1 - Oil discovered
  3. Etuko-1 - Oil discovered
  4. Mbawa-1 - Natural gas

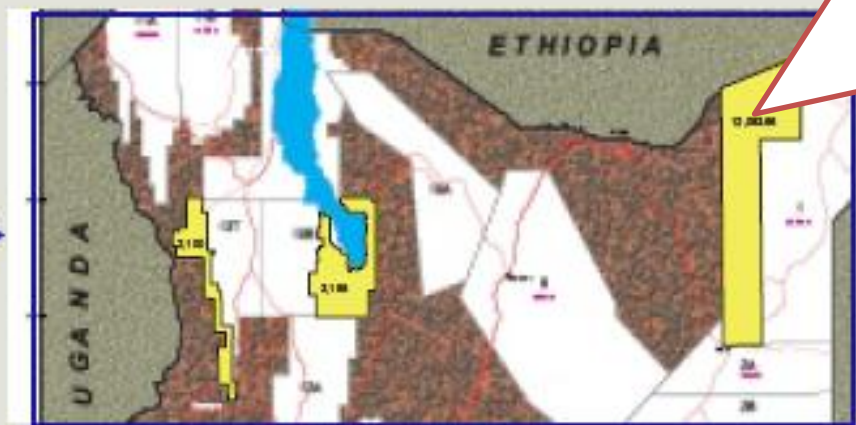


## Open Blocks (In Green -2)

Blocks L25 & L26  
(already gazetted).

## Relinquished Blocks (In Yellow -7)

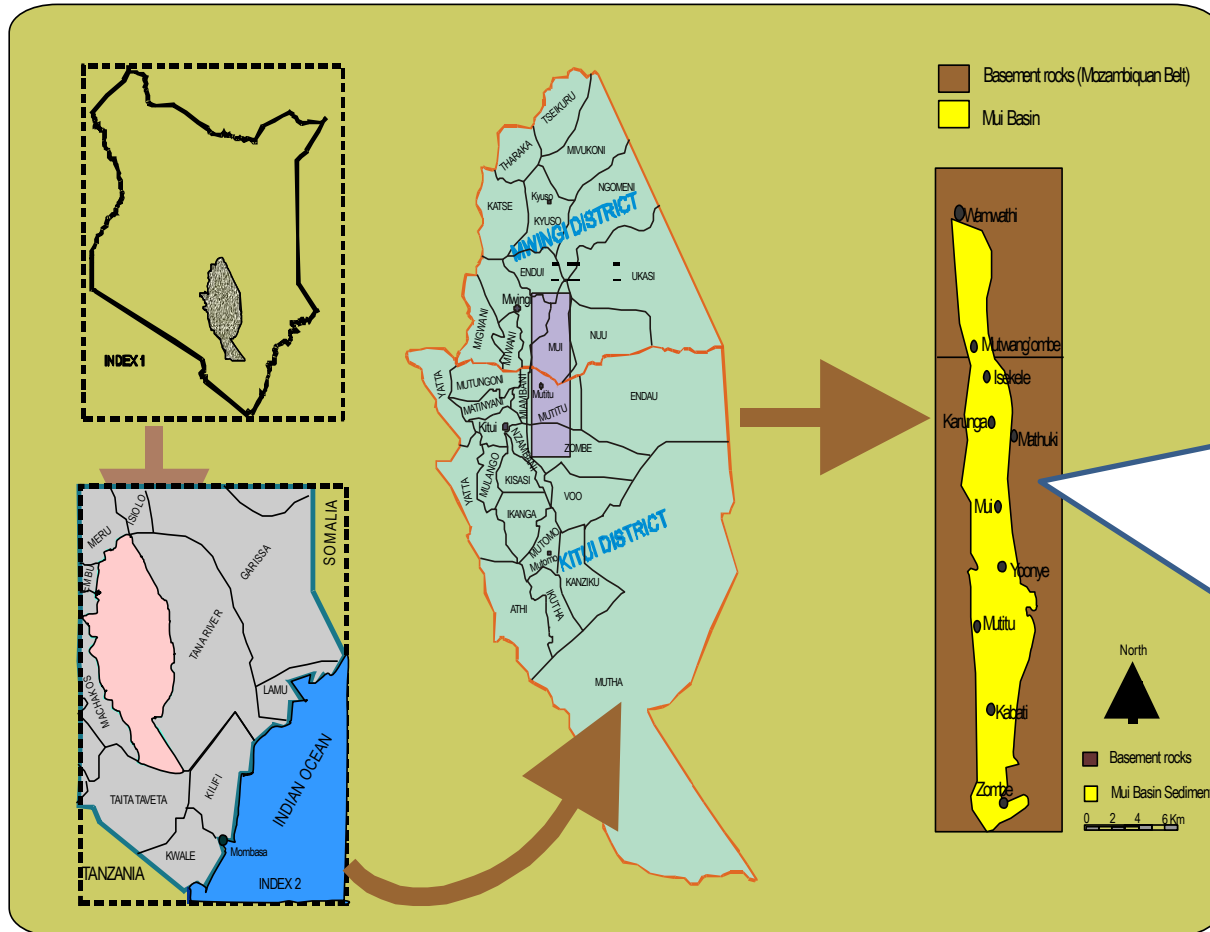
Plans are underway to  
gazette additional seven (7)  
blocks that were recently  
relinquished. This will  
increase the total number of  
blocks to fifty three (53).







Exploration for coal in Kenya has been going on for many years



In 2010 MoEP discovered commercial coal deposits in Mui Basin of Kitui County (180km North-East of Nairobi).



- Divided into Blocks A, B, C & D.
- Block C has at least 400 million metric tonnes of coal.
- Blocks A, B & D have coal in the 10 out of 20 exploratory wells.
- Blocks C & D being concessioned to Fenxi of China.
- Tender for Blocks A & B to be re-advertised.
- 31 new blocks delineated outside the Mui Basin soon to be tendered.
- 960MW of power from Mui coal planned by 2016.
- Another 960MW to be developed in Kilifi/Lamu County using imported coal.



THANK YOU

