

# AFRICA & POLITICS OF ENERGY TRANSITION



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FEBRUARY 13, 2024



# OUTLINE

- Africa's Energy Deficits
- Nigeria's Energy Deficits
- Africa Oil & Gas Resources
- Africa Oil & Gas Figures
- So, What changed?
- What does this mean for Africa
- Energy Security & Transition Strategies



# AFRICA'S ENERGY DEFICITS



Reference: AFDB “Light Up and Power Africa  
A new Deal on Energy for Africa”, 2017

- “Over 640 million Africans have no access to energy, corresponding to an electricity access rate for African countries at just over 40 percent, the lowest in the world.”
- “Access to energy is crucial not only for the attainment of health and education outcomes but also for reducing the cost of doing business and for unlocking economic potential and creating jobs”
- With Worldwide pursuit for ENERGY SECURITY, Africa must achieve **SUSTAINABLE ENERGY SECURITY** within the resources available.
- “Fossil fuels will remain an important part of overall energy Mix” per cent

## AFRICA'S ENERGY DEFICITS (CONTD)

Owing to population growth, Africa lags behind all other continents in terms of energy access, with the lowest electrification rate and the most limited access to clean cooking

### Lack of access to electricity

- Over 600 million people do not have access to electricity in Africa

#### ❑ Affordability gap:

- Out of these 600 million people, 400 million people cannot afford tier 2 electrification
- This represents **66% of total unelectrified population**
- Electrification in Africa for unelectrified people represents a \$75-115 billion opportunity<sup>3</sup> when considering grid, mini grid and solar home system



*“Africa’s geographic diversity holds huge potential for solar and wind power, and its soils are home to many of the minerals and rare earths needed for clean energy technologies.”*

<https://www.iea.org/news/africa-faces-both-major-challenges-and-opportunities-in-transition-to-clean-energy>

1. Biogas and e-cooking were excluded from this analysis as the potential in Nigeria is much smaller (high price of biogas, low electricity access for e-cooking)  
2. Affordability was calculated based on income levels and least-cost energy solution. Tier 2 is defined as minimum 20W power and minimum 4h electricity per day  
3. Based on the SE4ALL Report findings, considering grid, mini-grid and SHS potential

### Lack of access to clean cooking

- 920 million people do not have access to clean cooking in Africa

#### ❑ Affordability gap:

- Out of these 920 million people, 680 million cannot afford clean cooking<sup>1</sup>
- This represents **74% of the total population that do not have access to clean cooking**
- Clean cooking in Africa represents a \$9-12 billion opportunity for population that do not have access to clean cooking. In addition, yearly CO2 emissions could be reduced by 8.9-



**Tier 2 = 20W power & min 4hrs electricity per day**



# NIGERIA'S ENERGY DEFICITS

## Lack of access to electricity

- 82 million people do not have access to electricity in Nigeria
- ❑ **Affordability gap:**
  - Out of these 82 million people, 45 million people cannot afford tier 2 electrification
  - This represents **55% of total unelectrified Nigerian population**
  - Electrification in Nigeria for unelectrified people represents a \$10-16 billion opportunity<sup>3</sup> when considering grid, mini grid and solar home system

## Lack of access to clean cooking

- 146 million people do not have access to clean cooking in Nigeria
- ❑ **Affordability gap:**
  - Out of these 146 million people, 96 million cannot afford clean cooking<sup>1</sup>
  - This represents **66% of the total population that do not have access to clean cooking**
  - Clean cooking in Africa represents a \$2-3 billion yearly revenue opportunity<sup>4</sup> for population that do not have access to clean cooking. In addition, yearly CO2 emissions could be reduced by 480-540kt

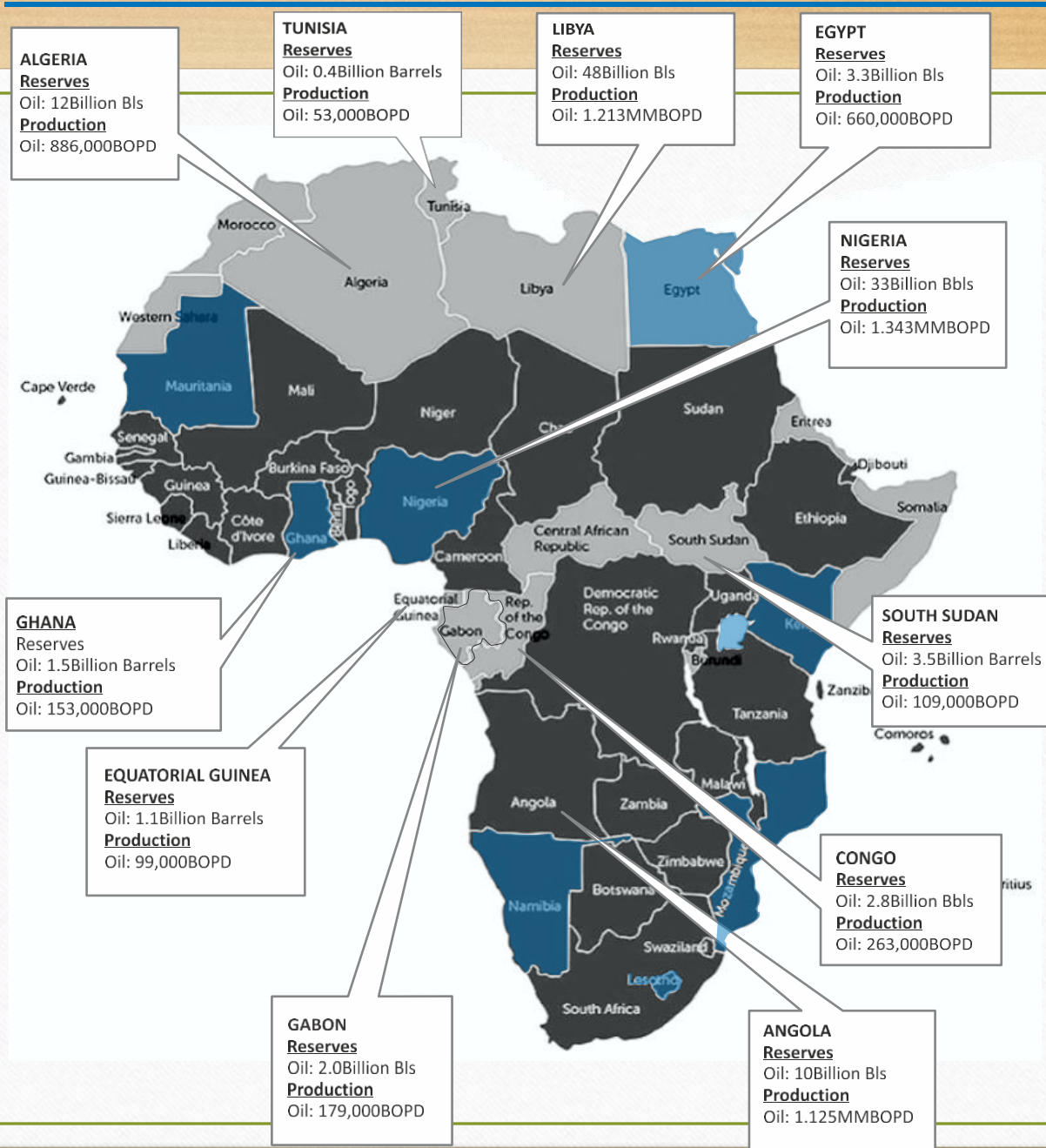
*“African nations need to collectively continue to prioritize convenience, affordability, and reliability to reach a quality of life enjoyed by the industrialized world, which has powered its economic growth and achieved prosperity using hydrocarbons.”*

Source: World Bank, UN's Sustainable Development Goals, team analysis, SE4ALL

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Source: World Bank, UN's Sustainable Development Goals, team analysis, SE4ALL

# AFRICA'S OIL RESOURCES



1. Figures all sourced from OPEC Monthly Oil Market Report, September, 2021  
 2. Ghana's production was sourced from IEA, Tullow Oil & ENI reports

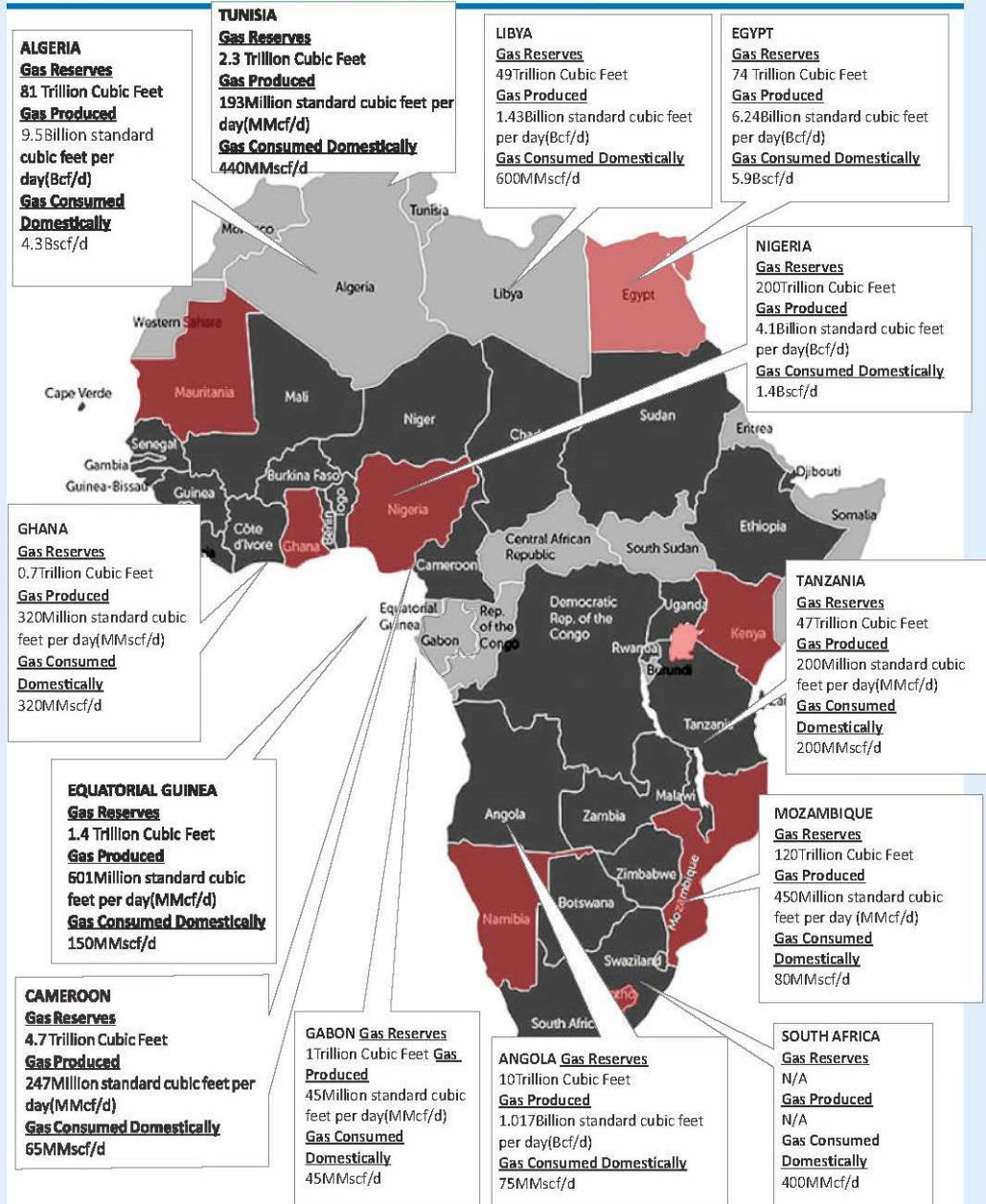


# AFRICA'S GAS RESOURCES

## AFRICA'S GAS PRODUCING COUNTRIES DOMESTIC GAS CONSUMPTION 2022



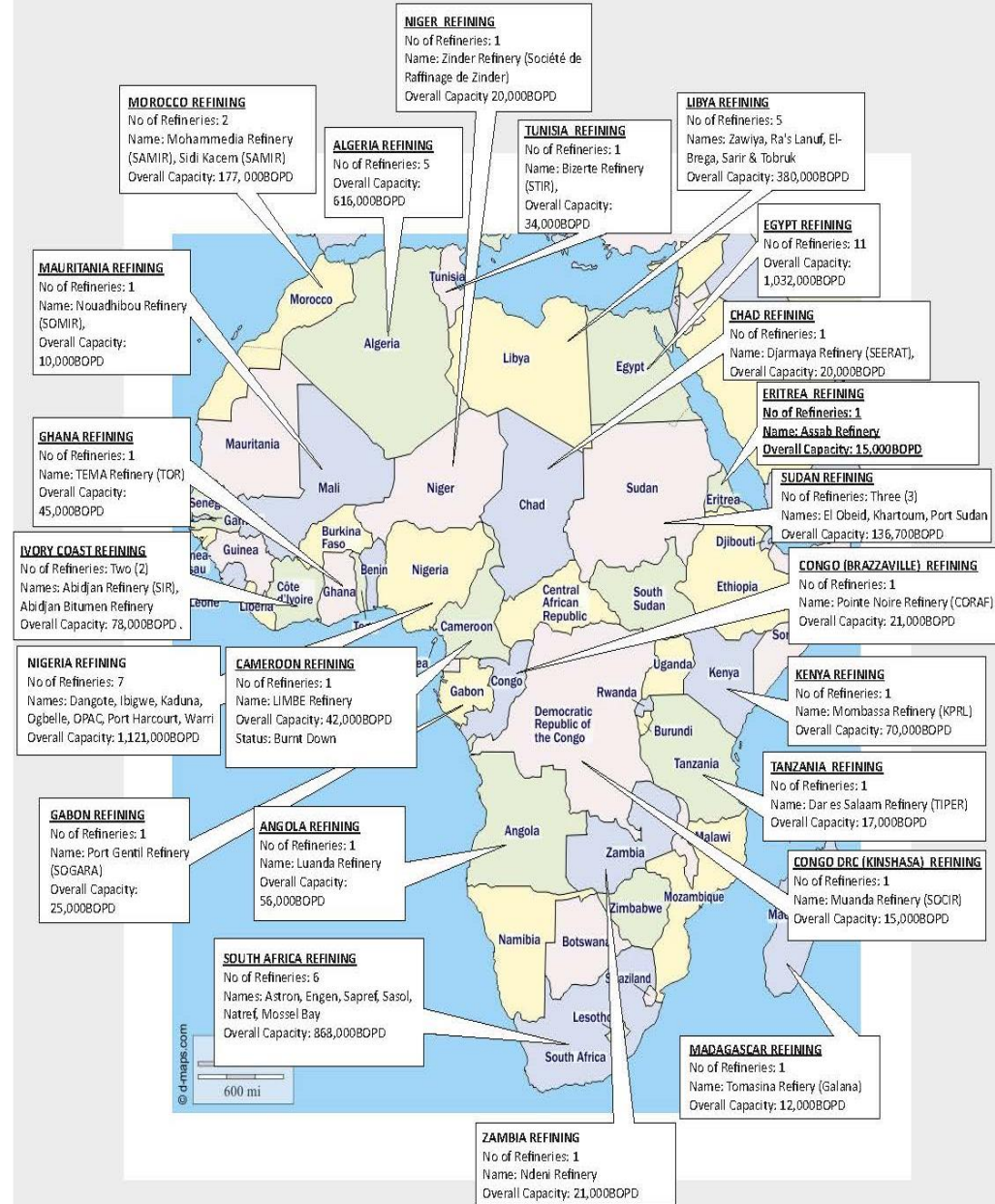
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AFRICA OIL+GAS REPORT



1. Figures all sourced from BP Review of Statistics, OPEC Annual Statistics Bulletin and IEA



# AFRICA'S REFINING CAPACITY





# AFRICA OIL & GAS FIGURES

## Gas

Reserves	-	591.1tcf
Production	-	24.31bcfd
Consumed	-	13.58bcfd

## Oil

Reserve	-	117.68bbbls
Production	-	6.14mmbo/d
Consumed	-	4.0mmbo/d

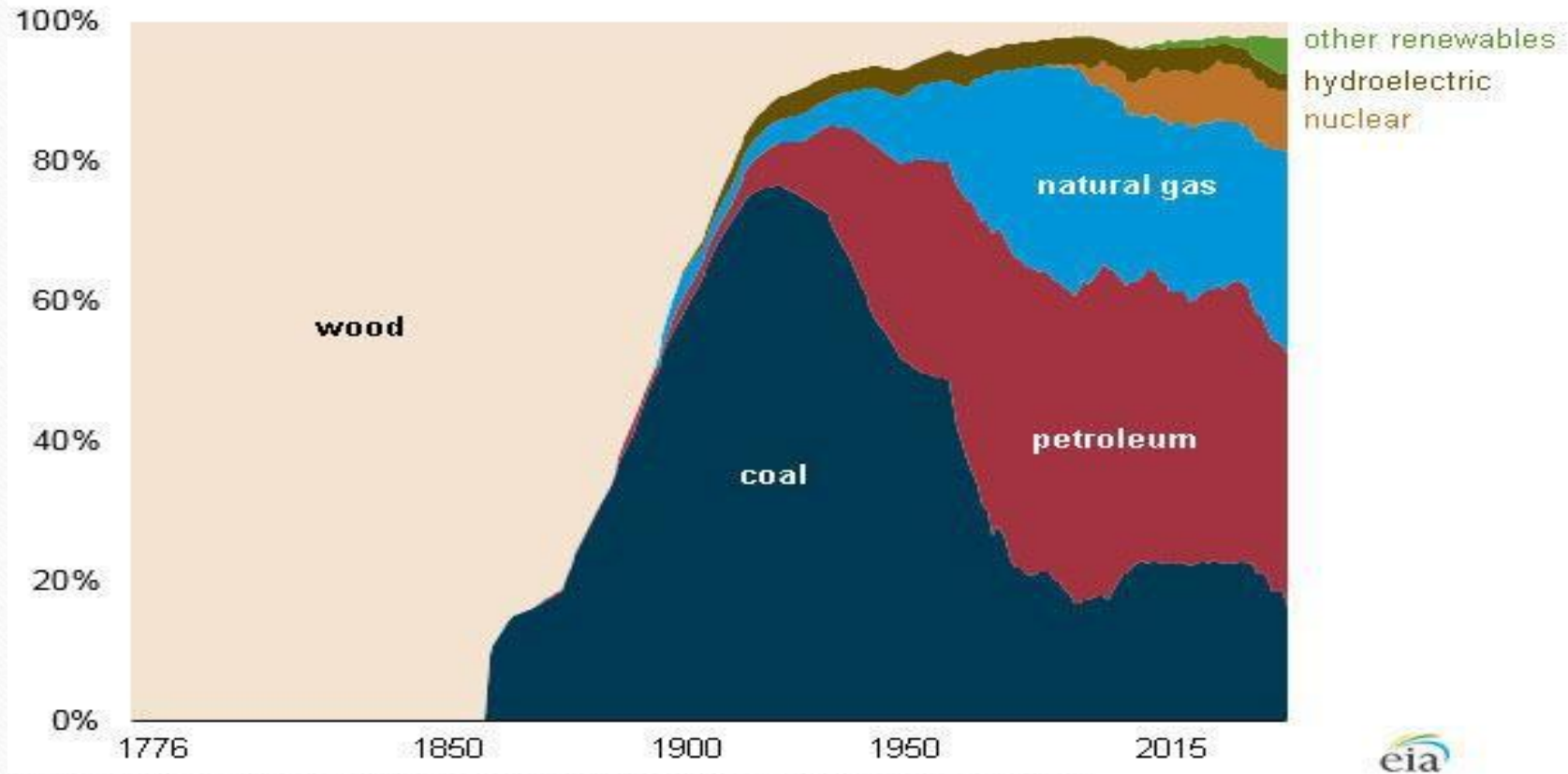
## Africa's Refining Capacity

23 Countries	-	4.83mmbopd
5 Countries	-	4.02mmbopd



- There has always been Energy Transition

### Shares of U.S. energy consumption by major energy source, 1776-2015



Source: U.S. Energy Information Administration, *Monthly Energy Review* (April 2016)

- Driven by ease of production, handling and use
- Decarbonisation was handling a consideration in this case



## SO, WHAT CHANGED?

- Energy Transition has always been about energy security vs dependence.
- 50 years ago, the Yom Kippour war, (6-25 Oct., 1973) which triggered the oil boycott of the West led to the first serious effort (by the West) at energy transition.
- By the time the boycott was called off, oil went from \$2.5 to \$12.5. The oil shocks had far-reaching economic impact on the industrialised world. ... things would never be the same again!
- The 1973 oil shock triggered a stock market crash, soaring inflation, high unemployment in the United Kingdom and United States of America.
- In response, industrialised nations took steps to reduce their dependence on OPEC Oil.

• *Industrialised Nations were determined that never again would circumstances outside their control threaten their energy security and their economy. are now lukewarm about the quick march away from fossil fuels!*

- Large scale funding in the quest for renewable energy began.
- The landmark Paris climate agreement of December 2015 set a target of 2050 for net zero CO2 (Carbon Neutral) emissions.
- Fast forward COP 26 in Glasgow in 2021 ... panick from the Russia/Ukrain crisis and a new dependence on China for components of renewables technologies, and industrialised Countries are now lukewarm about the quick march away from fossil fuels!
- Now the new speak is that the Energy industry is one industry .... A basket of sources from fossil fuels to renewables.
- The name of the game in geopolitics



## WHAT DOES THIS MEAN FOR AFRICA

- The Name of the game is Energy Security!
- Energy plays a critical role in driving economic growth. Thus energy transition must not compromise energy supply reliability. What we have we must hold!
- Climate change may be an existential threat but so also are institutional 'poverty, hunger, disease and conflicts linked to gross under-development.

## WHAT DOES THIS MEAN FOR AFRICA (CONTD)

- *We must, therefore, do the following:*
  - *Ramp up production and build up reserves of oil and gas*
  - *Reduce per-barrel production cost*
  - *Build internal Refining Capacity*
  - *Build Industrial/Manufacturing capacity to use oil and gas as feedstock*
  - *Intensify gas-to-power schemes*
  - *Maximise gas to methanol, gas to fertilizer and gas to petrochemical schemes.*



# AFRICA OIL & GAS FIGURES

## Gas

Reserves	-	595.2tcf
Production	-	24.6bcfd
Consumed	-	13.35bcfd
RP	-	67 Years
RP (consumption)	-	124 Years

## Oil

Reserve	-	117.68bb/s
Production	-	6.14mmbo/d
Consumed	-	4.0mmbo/d
RP	-	53 Years
RP (consumption)	-	82 Years

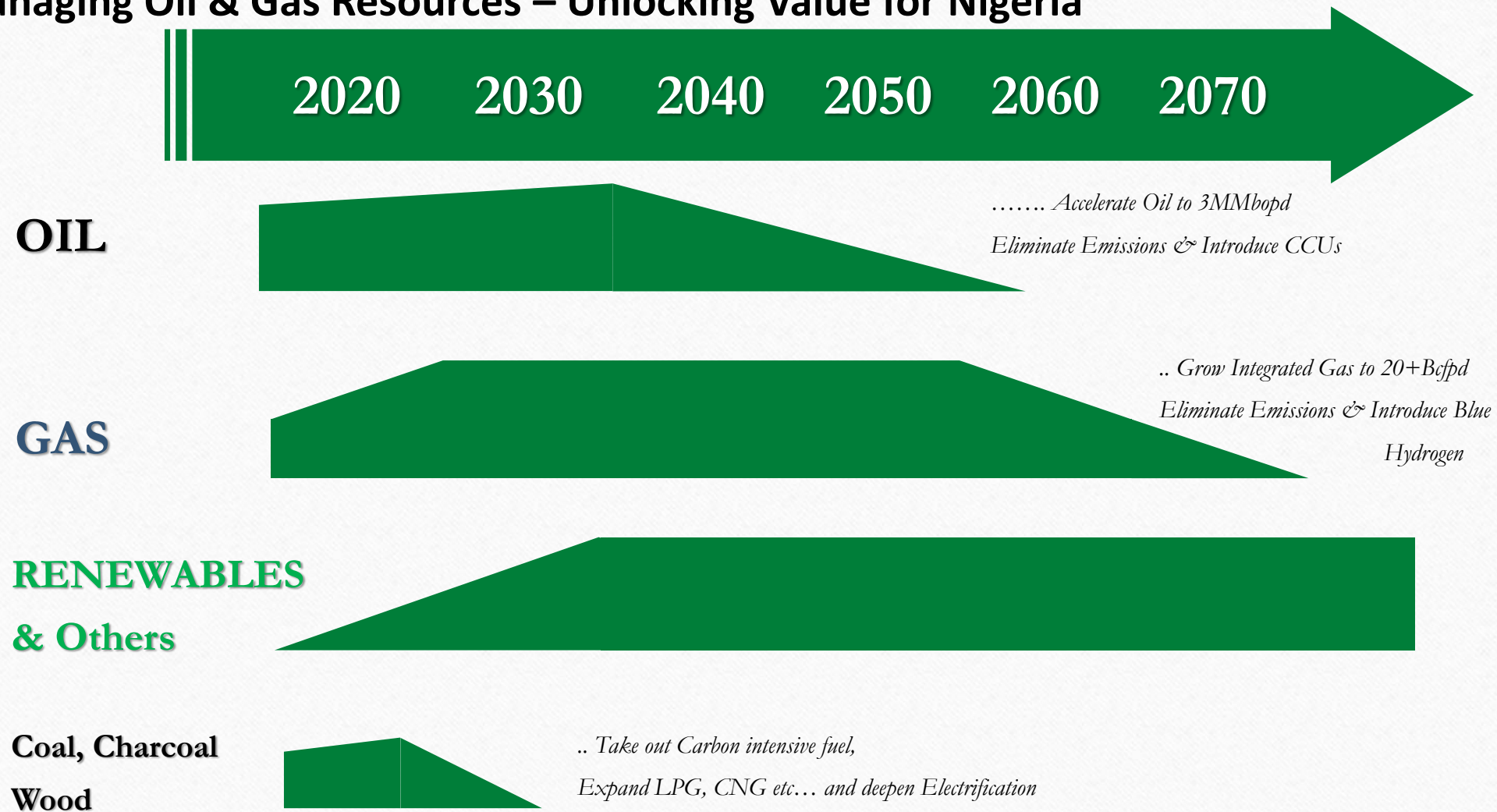
## Africa's Refining Capacity

23 Countries	-	4.83mmbopd
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# Energy Security & Transition Strategies:

## Managing Oil & Gas Resources – Unlocking Value for Nigeria





Thank You...