

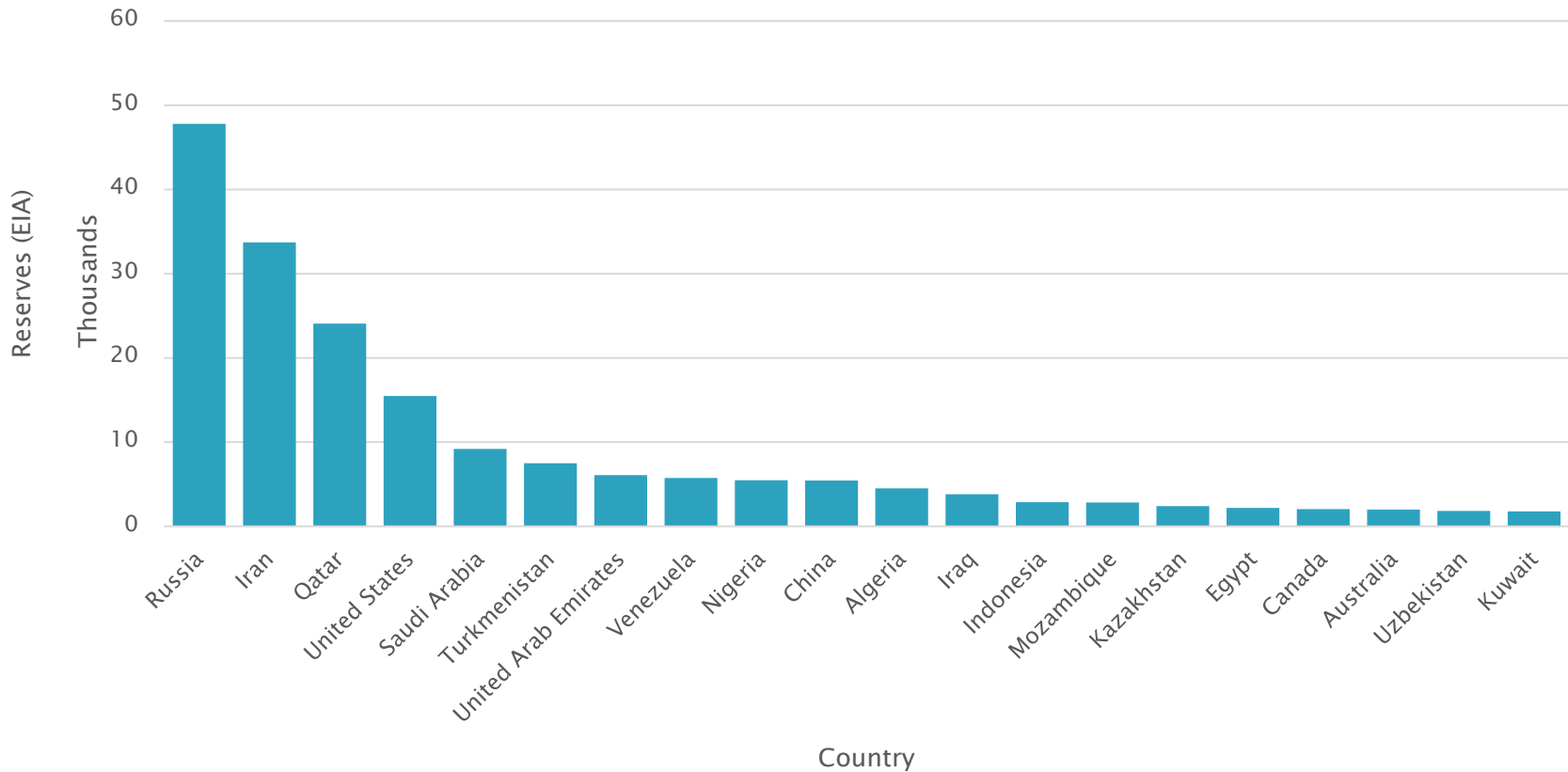
# Responsible Natural Gas Development in Africa

## Maximize Abatement of Emissions in Natural Gas Sector (Including Refinery/Petro-Chemical Plants)

Presentation by Bayo Olarewaju–Alo

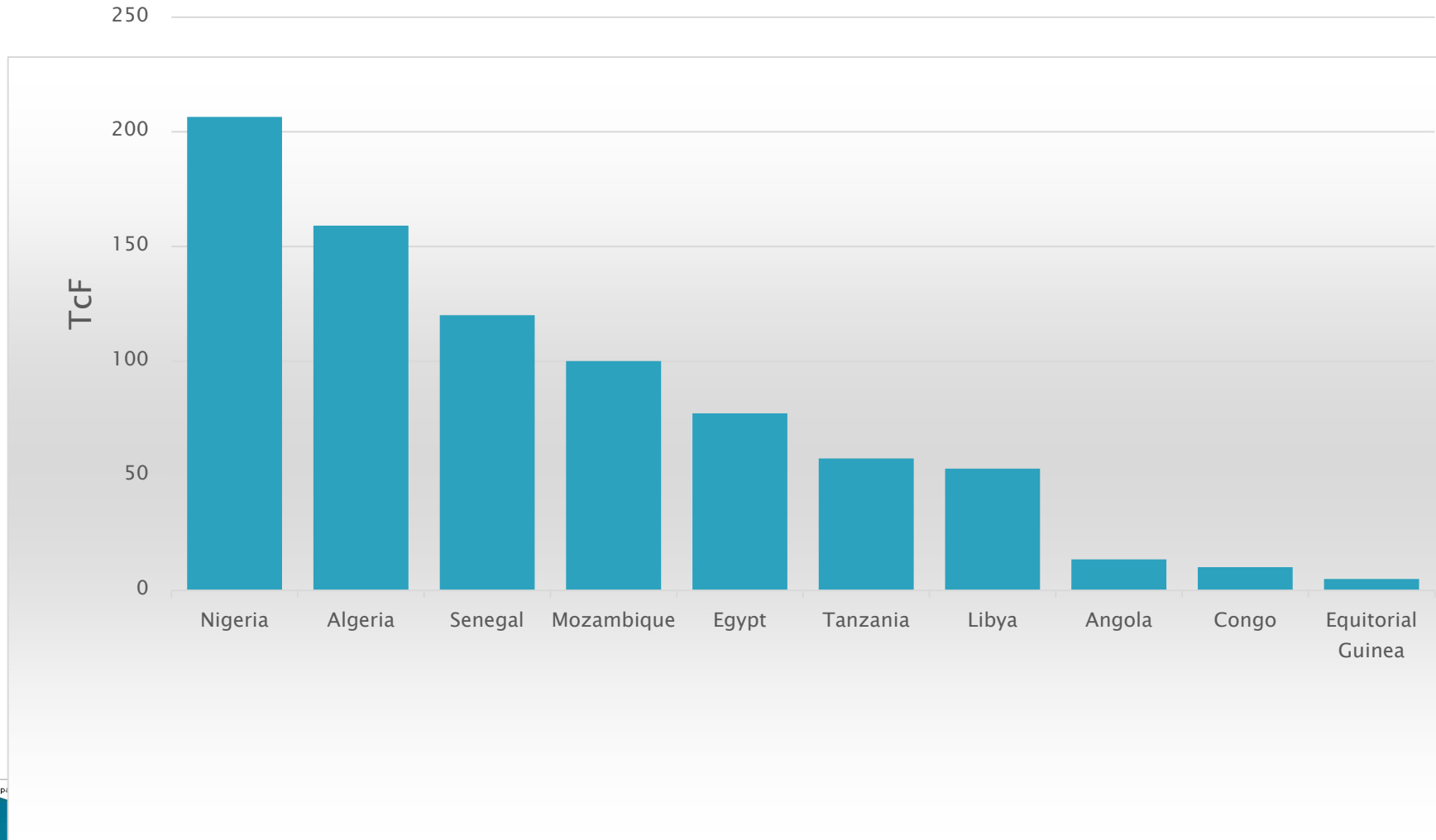
# World Top 20 Gas Reserves

Reserves in Cubic Meters



# African Top 10 Gas Reserves

Reserves in TcF



# African Context

- ❑ Accounts for less than 9% of World Gas Reserves
- ❑ Huge population, Young Demography
- ❑ Hungry for energy (low kwh per capita)
- ❑ Address Infrastructure deficit
- ❑ Grow GDP, Economy and create jobs
- ❑ Need to Monetize Natural Gas
- ❑ Address Energy Transition to CLEANER energy sources
- ❑ Play its part in addressing CLIMATE CHANGE

# Abatement of Emissions in Natural Gas Sector

- ❑ Africa Needs to Develop its Natural Gas Resources to drive economic development
- ❑ Use Natural Gas to replace other conventional Energy Sources (firewood, coal, liquid fuel etc.) as part of energy transition
- ❑ **MUST BE DONE RESPONSIBLY and SUSTAINABLY TOO**

# Abatement of Emissions in Natural Gas Sector

## EMISSION SOURCES

- ❑ CO<sub>2</sub> from Generators, Gas engines, Power Plants
- ❑ Fugitive Emissions – **loss of containment, leaks, relief valves, evaporation, unintended release of hydrocarbon vapour**
- ❑ Methane Emission is the greatest Green House Gas Concern in the Natural Gas Supply Chain
- ❑ Methane is 28 times More Warming than CO<sub>2</sub>

# Abatement of Emissions in Natural Gas Sector

- ❑ Emission Management in Plant Life Cycle
- ❑ Minimize Methane Emissions to ALARP (As Low As Reasonably Possible)
- ❑ Emphasis on Closed Vents and Maximum Recovery
- ❑ Adherence to International Standards for Design and Equipment Selection that Emphasize Tight Methane Containment
- ❑ Review and Adopt Best Available Commercial Processing Technologies to Meet and Exceed Methane Emission Management Standards

# Abatement of Emissions in Natural Gas Sector

- ❑ Plant wide Monitoring and Detection Systems that Address Fugitive Emissions & Leaks for Prompt Intervention
- ❑ Instituting a Culture of Continuous Improvement in Reducing Methane Emissions Leading to Asset Iso Certification



# Abatement of Emissions in Natural Gas Sector

- ▶ New Projects (Gas. Petro-Chem & Refineries)
  - ❑ Design with ALARP Emission Mindset
  - ❑ Design review targeted at Emission Management
  - ❑ Incorporate New/Proven Technologies into new projects
  - ❑ Best Time to Incorporate Mitigation is during facility design
  - ❑ Monitoring & Continuous Improvement during Operation
  
- ❑ Government Regulatory Agencies to Play active role in monitoring compliance

# Abatement of Emissions in Natural Gas Sector

- ▶ Existing Gas, Petro-Chem Plants & Refineries
  - ❑ Develop Baseline Emission Data
  - ❑ Implement Emission Abatement Strategy
  - ❑ Set Targets
  - ❑ Monitor Performance
  - ❑ Retrofit proven technologies
  - ❑ OGI – optical gas imaging
  - ❑ “Method 21” using a flame ionization detector developed by US-EPA

# Responsible Natural Gas Development in Africa

▶ *THANK YOU*