

# Overview of the Oil & Gas Sector in Uganda

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By

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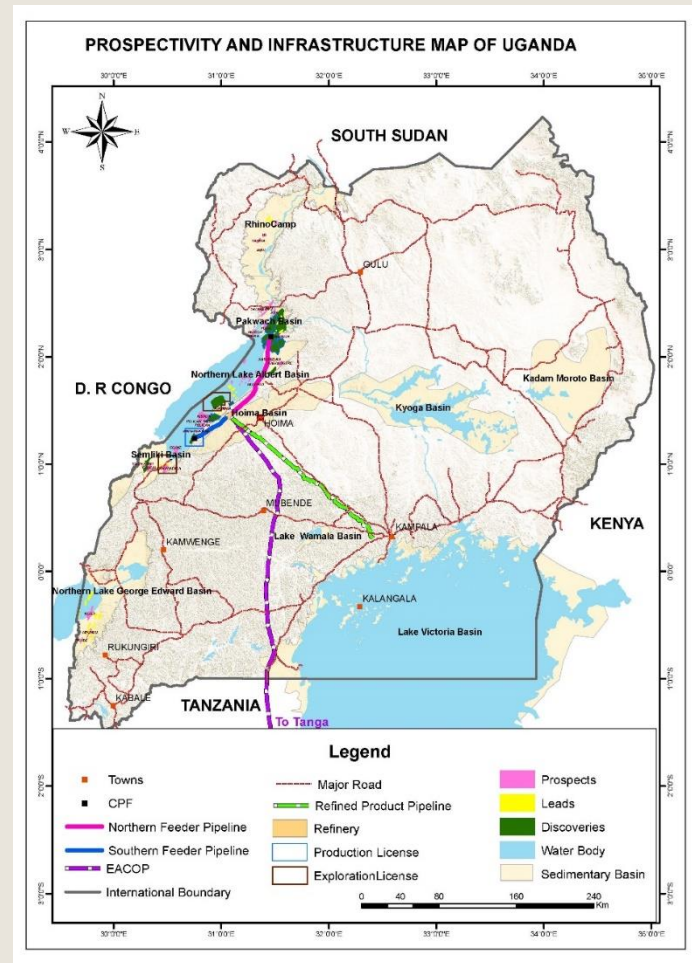
## History of oil exploration in Uganda



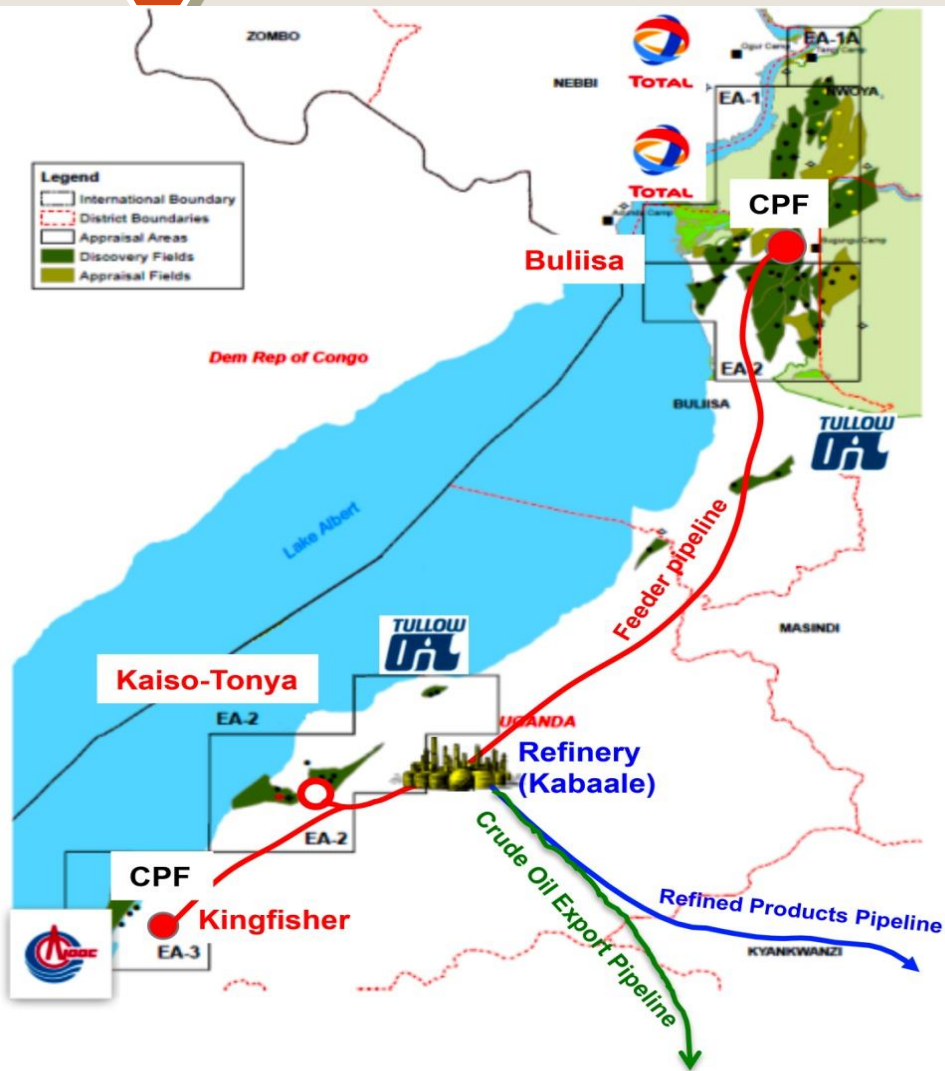
- ◆ As far back as 1890 with Fred Lugard after manifestation of oil sips.
- ◆ 1<sup>st</sup> well drilled in 1939- wasn't successful
- ◆ 1985- 1<sup>st</sup> act of parliament to promote oil exploration.
- ◆ 1987- focus on capacity building.
- ◆ Jan 1997- Heritage Oil & Gas
- ◆ Nov 1997- Hardman Resources-
- ◆ **2006- Commercial discovery** – Mputa 1 well
- ◆ 2010- Tullow acquired both Hardman & Heritage



- Albertine Graben is the principal prospective area for petroleum exploitation.
- 21 Oil and Gas discoveries; 14 fields under development
- 6.5 billion barrels of Oil equivalent in place; 1.4 billion barrels recoverable.
- Gas (Non-associated) Initially In Place (GIIP) stands at 500 BCF.
- 40% of Albertine Graben has been explored; less than 15% is licensed.
- Various leads and prospects have been identified in the Albertine Graben.
- Other sedimentary basins in the country are under investigation; example Moroto-Kadam Basin



# Overview and Status



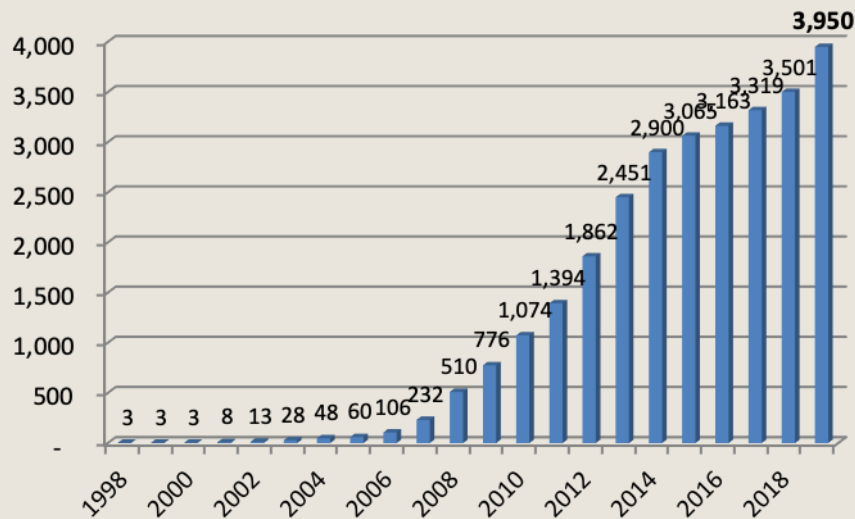
- Discovered oil in blocks EA-1, EA-2 & EA-3
- Initially Operated by CNOOC, Total & Tullow
- Tullow has sold its stake to Total.
- 9 Production licences granted - production plateau ~ 230,000 bpd
- ELs to Oranto & Armor
- HGA signed for both Ug and Tz
- Expected FID soon.



# Foreign Direct Investment to-date



**Cumulative Investments (USD  
Millions)**



Source: PAU

- Investment in exploration and appraisal operations was over US\$3.5 billion by the end of 2018.
- US\$ 15 to 20 billion expected to be invested in the next 3 – 4 years
- Massive opportunities for:
  - Primary investors, e.g. exploration companies.
  - Secondary investors, e.g. service companies (contractors).
  - Tertiary investors, e.g. subcontractors.



## Commercialization plans



**Road to First Oil ~ US \$ 20 Billion Investment**

**Upstream Devt**

CPFs, Pipelines,  
Base camps, Well  
pads, produced gas  
commercialization  
and access roads

**Uganda Refinery  
Project**

60,000 bpd

**East Africa Crude  
Oil Pipeline**

~190,000 bpd

**Support  
Infrastructure**

Airport, Industrial  
Park, Roads

Development of petrochemical and  
energy-based industry

**Projects provide an opportunity for National Content Development in the Country**



# Turning Barrels to Billions



## PETROLEUM TO POWER

Use of Associated Gas for power generation



## CRUDE OIL REFINERY

Phased development of a 60,000 barrels of oil per day refinery

Natural gas processing and commercialization

Development of petrochemical and energy-based industry



## CRUDE EXPORT PIPELINE

Export of crude oil by pipeline

Export through Tanzanian port of Tanga

# Project Components –What Will Be Built ?



## WELL PADS

### Tilenga Project

- Production plateau ~190k bopd
- 35 wellpads ~ 412 wells
- Feeder pipeline: 95 km, 24"

### KINGFISHER

- Production plateau ~40k bopd
- 31 wells on 4 well pads in KF
- 20 wells on 3 well pads in KT
- Feeder pipeline: 46km, 12"

**CPF:** where the oil, gas and water in the well fluids will be separated.

## Pipelines

- Production pipelines to transport produced oil & gas
- Water abstraction and water injection pipelines to transport water
- Polymer injection pipeline to transport polymer from the CPF to wells.

### Other Project infrastructure will include:

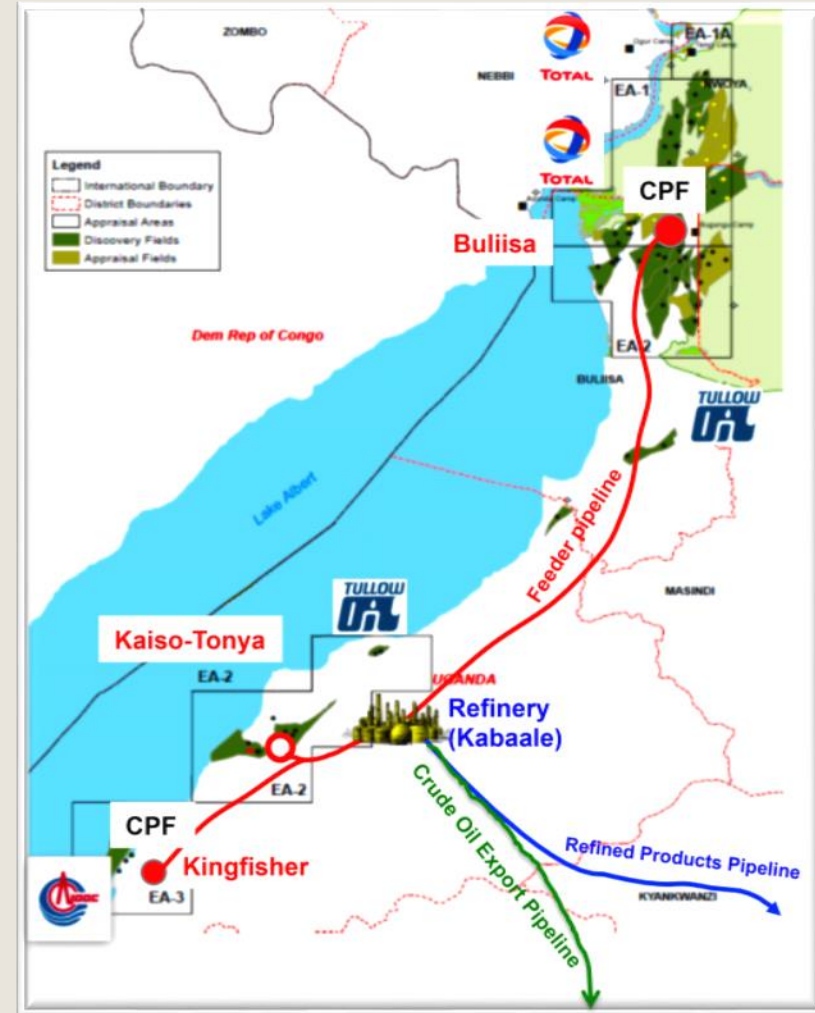
- Earth works,
- Area fencing and drainage
- New field roads, upgraded roads
- Workers' Camps and Operational Support Bases
- Other facilities – borrow pits, waste disposal areas



# Field Developments to 1<sup>st</sup> Oil



- About **450 wells** planned to be drilled in the next 3-5 years.
- Processing facilities – 2 CPFs to be constructed and maintained (190,000 bbl/d & 40,000 bbl/d) operated by Total and CNOOC respectively
- In-field flowlines (About 250 Km), and Feeder Pipelines (About 150 Km)
- Oilfield Crude Storage tanks/facilities (390,000 bbls for TILENGA and 90,000 bbls for Kingfisher)
- Waste management and treatment, and Logistical Services
- Power generation plants using gas and some crude oil
- Estimated investment of \$15- \$20 billion





# Refinery Development



## Refinery Development

- Uganda is going to build one of the few refineries in the hinterland which will be an incredible opportunity for the downstream oil business in East & Central Africa. Likely to be 60,000 Barrels per Day (BPD).
- Land for refinery has been identified, paid for and resettlement of project affected persons carried out.
- The refinery will be built using PPP  
Estimated Project Cost: US\$ 4 billion.





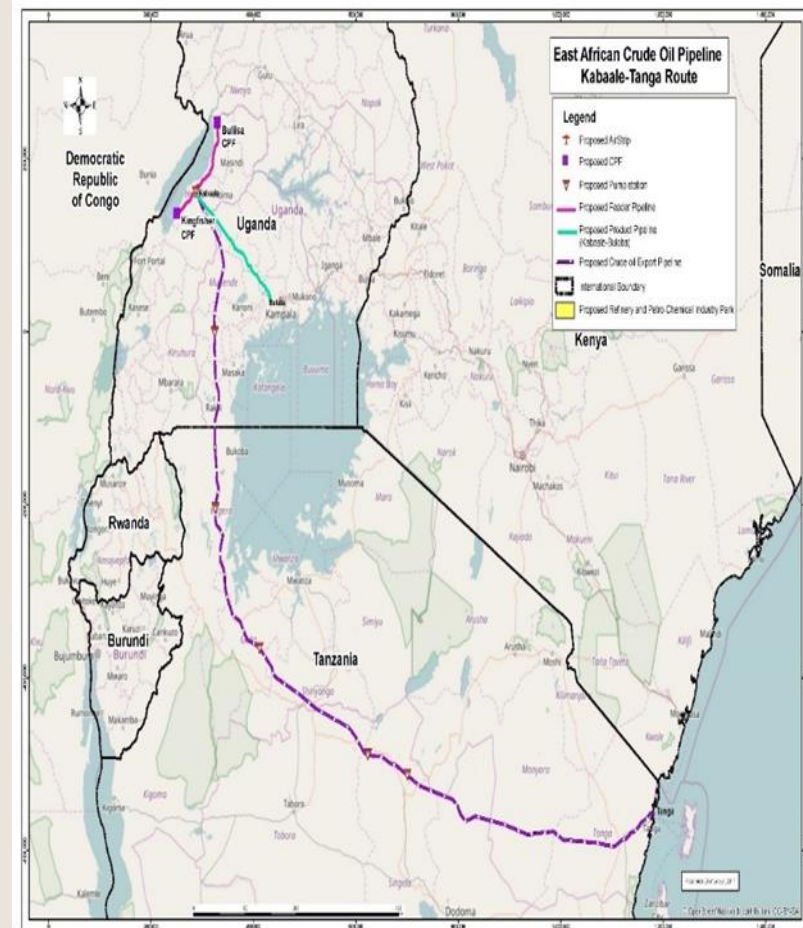
# Pipeline Development



## Pipeline Development

### Crude Oil Export Pipeline

- 1445km of 24 inch crude oil pipeline from Uganda (Hoima) to the port of Tanga in Tanzania: (the longest cross-border heated pipelines in the world)
- Estimated CAPEX USD 3.5 billion to be spent over 3 years



Planned crude oil export pipeline (Source: Total and PEPD)



# Support Infrastructure



## Kabaale Industrial Park

- Planned development of 29km<sup>2</sup> Industrial park at Kabaale
- Investments in the Industrial Park include:
  - Refinery Project
  - An International Airport
  - Facilities for a crude oil export hub
  - Petrochemical Industries and other associated facilities
- The Industrial Park Master Plan provides for the development of support utilities, infrastructure, and common services among others



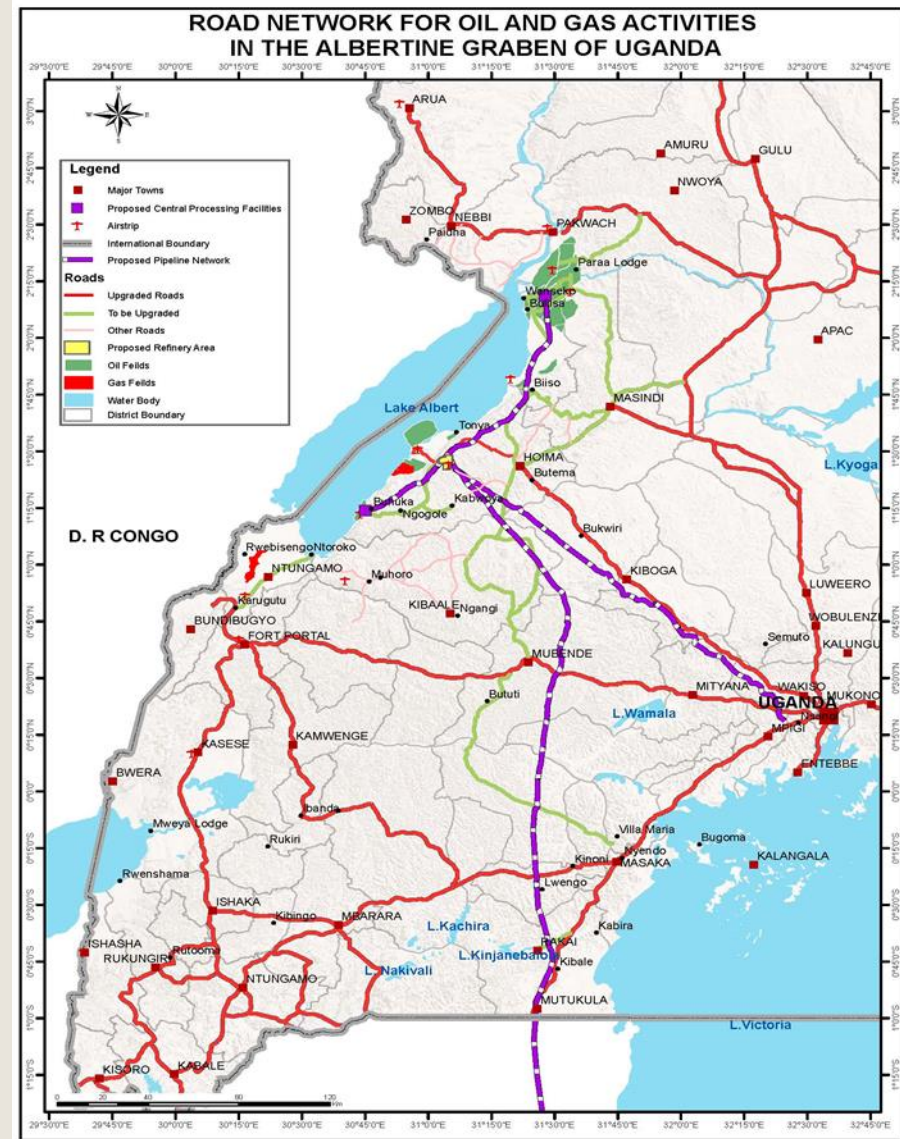


# Support Infrastructure



## Road Construction

- Upgrading of 580 Km of roads is being undertaken by UNRA. Estimated cost: US \$ 500 million
- Ongoing >250 Km of 'Infield Roads' to facilitate construction and drilling.
- Construction and Maintenance of these roads and ancillary facilities





# Opportunities in EPC Phase to 1<sup>st</sup> Oil



## Engineering

Engineering Design

- HSE
- Project Management
- Project Controls
- Project Assurance
- Risk Management
- Completions Management
- Support Functions
- Procurement

## Additional Works and Services

Well Pad Cluster Sites or Multi-well Pads (MWP's)

- Lake Water Intake System
- Security
- Consumables, Water and food on site
- Transport & Logistics
- Waste management
- Mechanical Completion

## Construction

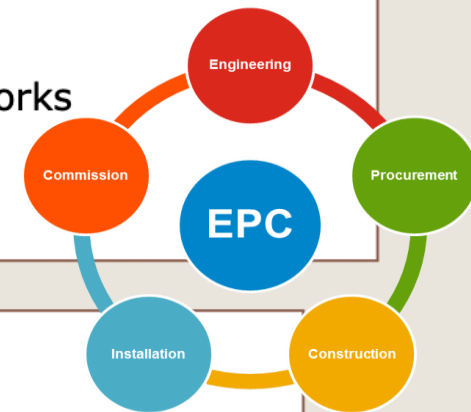
Pre-assembled Units (PAU) or Modules

- Early Works and Infrastructure
- Construction Compound
- In-Field Access and Haul Roads, Dumps and Stockpiling Areas
- Surveying – Topography and Geological Site Surveys
- Site Preparation and Fencing
- Civil Works
- Piling Works
- Materials Used in Civils Works
- Mechanical Work
- On-Plot Buildings

## Commissioning

Stage 1 (Mechanical Completion)

- Stage 2 (Function Testing)
- Stage 3 (System Commissioning)
- Stage 4 (Start Up and Ramp Up)





## Services reserved for Ugandan Registered Entities



- (a) Transportation.
- (b) Security.
- (c) Foods and beverages.
- (d) Hotel accommodation and catering
- (e) Human resource management.
- (f) Office supplies.
- (g) Fuel supply.
- (h) Land surveying.
- (i) Clearing and forwarding.
- (j) Crane hire.
- (k) Locally available construction materials.
- (l) Civil works.
- (m) Supply of locally available drilling and production materials.
- (n) Environment studies and impact assessment.
- (o) Communications and information technology services.
- (p) Waste management, where possible.





# Commercial Opportunities (Engineering)






- Civil Engineering and Design Services
- Mechanical Engineering Services
- Specialised Engineering Services
- Drilling Equipment & Supplies
- Manufacturing & Supplies(steel, pipes, metal basic structures)
- Management & Technical maintenance Services (Engineering, plant, Surveys
- Equipment maintenance :Generators, Pumps, etc
- Electrical Equipment (installation, repair & Maintenance)
- Capital Equipment: industry Heavy Machinery
- IT/Communication Services
- Computer maintenance & System services





## Commercial Opportunities (Construction)



- Construction Services ( Building, earthworks, civil works, tunneling, piles, caissons etc)
  - Construction Materials: Steel, basic structures
  - Construction Materials: Raw Materials (Cement, Gravel, Sand, etc)
  - Demolition and site preparation
  - Building & facilities maintenance
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- General & Site Support Services (Catering, hospitality, maintenance, laundry, cleaning, waste Management; etc)
  - Consumables for Site Support( food, water, office supplies, stationery, etc)
  - Personnel Services: Vocational, induction, Training & Health, Safety & Environment
  - Manpower/recruitment services
  - Consumables: Uniforms, Personal Safety Equipment (
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# Commercial Opportunities (Logistics)



- Supply Chain Management Services
- Freight forwarding,
- Customs,
- Warehousing,
- Transport of goods
- Lifting Services
- Vehicle Fleet Management
- People Transportation,
- Logistics in-country (Car, truck rentals and other vehicles)
- Accommodation for Expatriates
- Evacuation Services
- In-country flight Services





# Commercial Opportunities (Other Services)



- Energy: Fuel, Electricity, Generators
- Environmental services
- Financial & Risk Services: Banks, Insurance
- Hazardous Waste Management
- Health Services
- Legal Services
- Security Services
- Consumables: Lubricants/Chemicals
- Consumables, replacement Parts
- Maintenance & Repairs
- Site improvement Services( Gardening, landscaping, pest-control)
- Goods: (wholesale Distribution/manufacture eg. foodstuffs, stationery, drinking water, etc





## Challenge : Multiple project developments



- The CPFs for Kingfisher & Tilenga, EACOP pipeline, refinery, feeder lines, Buloba facility, critical oil roads, Kabaale airport are all to be developed within the same period of time **in addition to other construction works in the country.**
- **Estimated Capital expenditure over \$ 15bn.**

