

Development Planning: East Africa Oil and Gas

David Aron

Managing Director

Petroleum Development Consultants

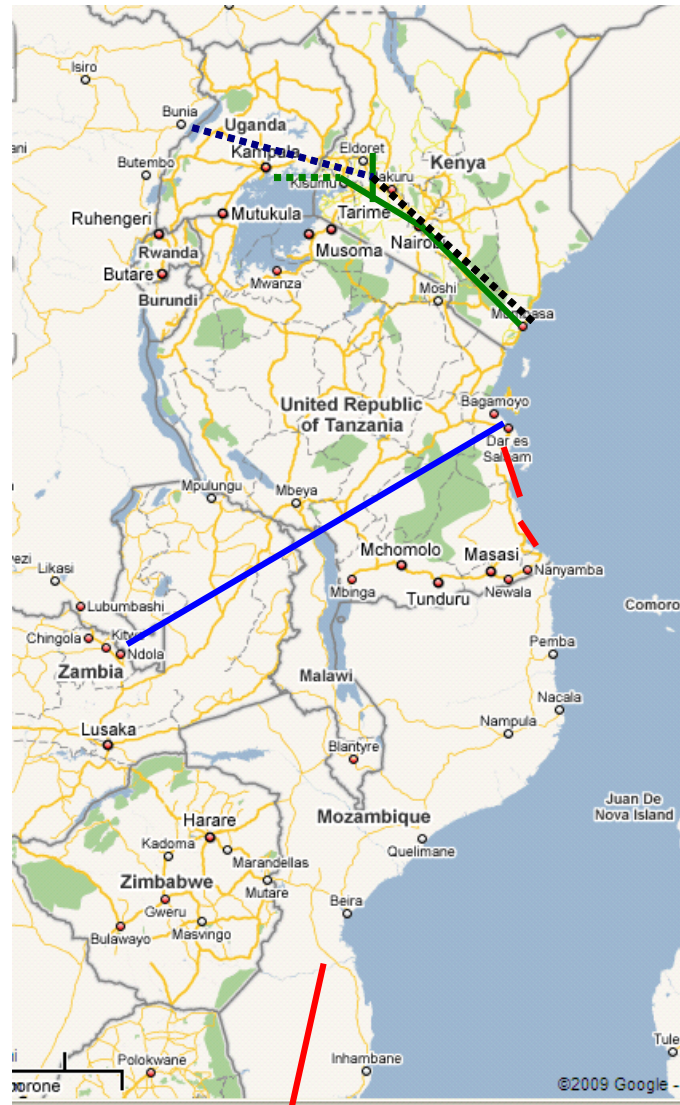
London & Aberdeen, UK






- Introduction
- Onshore infrastructure
- Offshore development issues
- Market issues
- Regional co-operation
- Some conclusions

- Petroleum Development Consultants carry out upstream and downstream oil & gas projects
- Experience in region includes:
 - Advice to National Oil Company of Kenya on Exploration & Production Strategy
 - Assistance to Energy and Water Utilities Regulatory Authority (EWURA) Tanzania on introduction of a bulk oil procurement system
 - Preparation of LPG supply and demand study and preliminary design of infrastructure for Ministry of Energy, Kenya
 - World Bank Downstream Petroleum regulatory and market study for Ministry of Energy and Mineral Development, Uganda
 - Tanzama pipeline review for World Bank/Ministry of Energy Zambia

- The lack of extensive infrastructure particularly oil and gas pipelines is a problem for upstream oil & gas companies
- However there is already some pipelines and they can provide a basis for future developments
- In addition the poor development of rail and road means that it is difficult to carry out development for small discoveries
- The lack of extensive power generation grids also means that there is a lack of local demand for the larger power generation plants
- There is little inter-country infrastructure in the region

East Africa oil & gas infrastructure



-  Oil product line
-  Planned product line
-  Crude line
-  Planned crude line
-  Gas pipeline

- Successful shallow water developments in Tanzania are encouraging and recent successes may only be limited by market issues.
- However many of the shallow water areas are environmentally sensitive and have mangrove swamp areas that need to be protected
- Greater water depths are problematic particularly when dealing with gas. Subsea technology for gas is being developed but not at great distances from shore. Example of BG offshore developments in Egyptian Mediterranean

- For oil the lack of crude oil pipelines has been a restraint. The costs of long export pipelines (such as that needed from Uganda) require a large reserve basis
- Small oil projects in isolated areas are difficult due to the lack of roads
- Oil consumption in most East African countries is not high and it is hard to justify investment in small refineries which cannot compete with the nearby modern and low-cost large refineries in the Middle East and India
- Electricity prices are generally low in the region being based mainly on hydroelectricity. For large difficult developments (such as deep offshore) local potential gas prices are too low to justify development

- Regional co-operation has the potential to facilitate upstream oil and gas developments
- Regional co-operation already exists:
 - Mozambique gas exports to South Africa
 - Tanzania oil crude pipeline to Zambia
- Further regional co-operation is planned:
 - Extension of oil product line from Kenya to Uganda
 - Crude export line through Kenya from Uganda
- Further regional co-operation that could be seen:
 - Tanzania gas exports to Kenya
 - Kenya use of Uganda crude export line for potential Kenya discoveries

Some conclusions

- Regional co-operation is a key to oil and gas development and this should be encouraged
- Development of gas powered generation has potential provided that developments can cope with a low gas price due to competitive fuels such as hydro
- Shallow offshore developments are generally favourable but deep water developments for gas are still problematic