Africa's Risk Outlook

MONICA ENFIELD argues that above-ground risks are likely to impact Africa's future energy outlook

Africa is a strategic component of the global energy system, but a number of above-ground risks are likely to impact the region's future outlook. Other authors in this issue have outlined in detail the geological potential and exploration context for African hydrocarbon resources, and the region is set to receive billions of dollars in investment in the coming years. However, for many of these African reserves to be monetised, operators will need to manage new above-ground challenges. Whereas just a decade ago, 'risk' mainly centred on political stability and economic uncertainty, companies now face surface and regulatory risk issues that are necessary to secure a 'social licence' to operate. Operators' ability to manage these largely non-technical, socioeconomic risks will be critical to the pace of resource development in Africa. This article looks at the varying and evolving risk landscape in Africa.

Although it is smaller than other regions with regard to proven oil and natural reserves and production, Africa remains strategic to global energy markets because of low domestic resource requirements allowing for export to global markets, the relatively high quality of its resources, and because it remains open to foreign investment. Africa exports almost all of its hydrocarbon and natural gas production, rather than consuming it domestically, primarily serving North American, European and Asian demand centres. This was especially important when Chinese demand for crude and refined products began to increase rapidly as African production growth helped offset declines in the North Sea and other light sweet crude producers. West African crude in particular contains sizeable amounts of gasoil, which can be refined into higher value distillates (diesel, kerosene, heating oil). Although the refining slate in both the United States and China is shifting toward a heavier and more sour crude slate, the light sweet West African barrels remain an important swing crude

in global trading.

But more than simply the quality of the crude, the African region remains strategic because it is largely open to foreign investment. A number of host governments allow energy companies to 'book' assets for reserve replacement and equity production as part of their overall company value. And even in the African OPEC countries (Nigeria, Angola, Algeria and Libya), the risk of production cuts to align with market management strategies has not significantly deterred investors.

Indeed, almost every country in Africa is receptive to hydrocarbon licensing and investment. For the purposes of this article, there are five key exploration and production (E&P) regions in Africa, each with differing resource development outlooks. North Africa is primarily an onshore conventional play, with a decades-long history of E&P activity from both foreign investors and the host national oil companies. At present, activity is hampered by the current political unrest across the broader Arab world and relatively restrictive fiscal terms, such as in Algeria and Libya. The Gulf of Guinea – encompassing a region that extends from Nigeria to northern Angola – is the key production centre in Africa over the last several years. E&P activity in the Gulf of Guinea includes conventional onshore/shallow water, as well as deepwater and more recently, even pre-salt plays. Nigeria and Angola are the leading resource holders and producers in this sub-region, and deepwater projects throughout the Gulf of Guinea drive substantive production growth in the future. The region has attracted all type of investors in the past two decades, with capital and technology-rich Supermajors dominating the deepwater space while local, regional and independent E&P firms are active in mature and conventional plays. An emerging frontier region, the Equatorial Margin is mainly a deepwater play with associated natural gas volumes. With a geological analogue across the Atlantic Ocean in Latin America, the African Equatorial Margin (also called the Transform Margin) extends from Ghana to Guinea Bissau. There is a range of political stability and risks issues across the region that is likely to stall potential resource development, especially in near-failed states Guinea and Guinea Bissau. The East Africa Rift Basin is a conventional onshore play, and infrastructure needs will be a primary commercialisation obstacle. The Mozambique Channel is a deepwater natural gas play, and is likely to be commercialised via LNG. Offshore security concerns (in the context of piracy threats) and emerging natural gas policy frameworks are likely to be key challenges for investors.

In terms of the competitive landscape in Africa, for decades the Supermajors explored onshore acreage across the continent, taking advantage of tax and royalty concessions. In the 1990s the Supermajors pushed the region's hydrocarbon potential even further by investing in the deepwater region, which at the time was considered anything deeper than 1000 feet. This new frontier required extensive capital and technology, and production sharing agreements were implemented that allowed more upside potential to operators concerned about recouping large upfront expenditures in risky conditions. However, Supermajors are not the only actors in Africa. Smaller independent E&P companies are very active in the region, particularly in so-called 'frontier' countries, where there has been very little past exploration activity. These smaller players are important because they have a narrowly-focused exploration-led business model (in contrast to Supermajors which manage large complex portfolios across the value chain), usually have much higher corporate risk tolerance than Supermajors, and are willing to develop smaller hydrocarbon deposits that may be uneconomic to bigger companies.

This varied mix of operators will mean different corporate drivers and abilities to manage above-ground risks. In general, Africa has a common set of challenges for investors: political instability (internal unrest or spillover impact from regional conflicts); high levels of corruption; low levels of social development and lack of government services in areas of company operations; high levels of monetisation risk or expensive infrastructure needs to commercialise resources; and weak sectoral capacity with limited institutions to manage the hydrocarbon sector. These risks tend to evolve as the resource base moves from a frontier exploration phase, to production ramp-up, to production plateau, and then to a mature production stage (Table 1).

In the frontier exploration phase, the primary driver is for operators to 'de-risk' the play from a geological perspective, and includes industry activities such as licensing, seismic acquisition and exploration and appraisal (E&A) drilling. For the government, the primary driver is to secure investment with attractive fiscal terms, quick approvals and low levels of regulatory burden and oversight. This is to encourage rapid exploration commitments by license holders, and is generally characterised by lower levels of entry and operating risks. Guinea in the Equatorial Margin and Ethiopia in the Rift Valley play typify this stage of development.

However, once resources are proved up in the country, above-ground risk tends to rise, especially in the production ramp-up phase. This period is when operators undergo project conceptualisation and make infrastructure investments and seek project approvals and environment permitting from the relevant authorities. At the same time, the prospect of new resources can change the government's needs and expectations from the sector. The state often begins to build capacity to manage state resources, including creating new institutions and national oil companies, as can be seen in Ghana, Tanzania, Mozambique and others. Although keen to begin receiving project revenues, the state may also seek to change contract terms in order to secure higher government take, and may insert the new national company as an equity partner in the project, or even stipulate new requirements on monetisation of resources. Uganda's requirement that crude oil be refined domestically rather than be allowed for export illustrates a key risk in the land-locked Rift Valley basin countries.

In many frontier African plays, where oil or gas resources have even yet to be declared commercial, governments are soliciting the advice of the World Bank, international transparency organisations and other national oil companies to provide best practices, capacity development funding and training. A primary driver for the pre-emptive regulatory frameworks and more stringent fiscal terms is for host governments to avoid the 'resource curse'. Numerous studies have demonstrated that countries with abundant natural resources have slower economic growth than countries without natural resources. 'Resource

Table 1: Above-ground Risk and Investor Impact

Resource Development Stage	Frontier Exploration	Production Ramp-up	Production Plateau	Mature Production
Industry Activities	Licensing Seismic acquisition E&A drilling	Project conceptualisation and infrastructure investment Project approvals Environmental permitting Production management	Production management Additional E&A drilling	EOR applications
Government Objectives	Secure investors with attractive fiscal terms, quick approvals and low regulatory burden Encourage rapid exploration commitments by licence holders	Build capacity to manage state resources Includes new institutions and NOC Revenue generation	Revenue generation Value-added investment linkages NOC and local sector development	Retain and attract investors Revenue generation from sector and value-added investments Opportunities for NOC and local sector
Above-Ground Risks	Low entry risks Low operating risks	Higher government take Contract sanctity Rising NOC mandate and influence Export restrictions	Pressure to invest in 'value-added' sectors (downstream, power, petchem) Rising local content Nationalisation	Decreasing entry risks, but strong NOC presence
Country Example	Guinea Kenya	Ghana Mozambique/Tanzania	Nigeria Angola	Sudan Gabon

curse' countries also suffer from lower levels of democracy, weak institutional capacity, poor human resource development, higher levels of conflict, revenue volatility, excessive borrowing during economic crises, and rampant corruption. All such characteristics can be found in many existing Gulf of Guinea producers, and the new African frontier countries are keen to avoid this fate.

For the East African gas countries, the number of recent discoveries has prompted a paradigm shift in the way natural gas is viewed in the region. Previously, natural gas was seen as a liability when accompanied with crude oil exploration efforts, with no perceived market for consumption or other cost-conscious commercialisation options. Gas resources were often flared, stranded or in the case of Nigeria, put towards LNG projects that provided further revenue flows to the government. The new gas paradigm is one in which African governments place natural gas at the centre of its economic development strategy. Tanzania and Mozambique in particular view their deepwater natural gas resources as a 'development fuel' that will build up the domestic economy and provide linkages to other value-added investments. While the scale of the recent discoveries will support an LNG commercialisation strategy (indeed several trains are under consideration by operators), the governments envision utilising a portion of the resources at home and expect foreign investors to be their partners in development.

In the case of Tanzania, the state is reviving its development plans, as illustrated by changes in natural gas legislation. Five key legislative components are being drafted, and are expected to be completed by 2013. Anticipated changes in investment terms include increasing royalty rates, the introduction of a signature bonus or signing fee, and the implementation of international industry standards, including new sector-specific regulations and requirements, especially around HSE requirements. Tanzania is also considering the creation of a sovereign wealth fund to help channel hydrocarbon revenues into development and savings for future generations. Similar efforts are taking place in Mozambique and Kenya.

The bulk of the Gulf of Guinea and North African countries are in the production plateau phase, in which the industry is engaged in production management and additional exploration and appraisal activities. Revenue generation from exports and taxation is a key government driver, but the state is also concerned with value-added investments and development of the local sector. There is increased pressure on foreign companies throughout these two regions to invest in sectors beyond just upstream such as the refining, petrochemical and power industry, as well as increased local content demands and creating opportunities for local operating companies to acquire assets and acreage. The current Petroleum Industry Bill (PIB) in Nigeria is demonstrative of the types of risks seen in this phase of development, and once implemented will make a number of regulatory, operational and fiscal changes to Nigeria's upstream and downstream sector. Industry actors have criticised the worsening fiscal terms, however the net effect of the PIB is likely to result in an overall positive impact on the investment climate. By raising Nigeria's institutional capacity, the PIB will enhance the investment climate stability and predictability

of future changes to contract terms, as well as opening the way for new licensing rounds, contract renewals and investments in Sub-Saharan Africa's largest hydrocarbon resource-holding state.

At the tail end of the production phase, the risk profile tends to improve as mature resources are managed. The government is primarily concerned with retaining investors or attracting new players that specialise in enhanced oil recovery applications to maximise resource exploitation. Entry and operations risks are usually lower in this phase, but the national oil company and local firms boosted by previous government policy remain relevant and influential players. Gabon and Sudan typify this stage of risk evolution.

Throughout all these risk phases in Africa, surface-level risk issues feature prominently. Certainly in the context of the US Gulf of Mexico Macondo spill, there is greater host government focus on environmental and safety procedures, with varying levels of capacity to develop and enforce regulations in Africa. Even though higher regulations in some states may add to project costs and compliance delays, an absence of regulations in other countries will still represent a liability to operators in the event of accidents or environmental disasters. In order to obtain a 'social licence' to operate, companies will need to manage risks associated with evolving energy policies and fiscal frameworks, social development issues, varying levels of state regulatory capacity, increasing environmental liabilities, as well as an array of risks that impact operating conditions, such as operator safety, corporate reputation and local community relations. ■