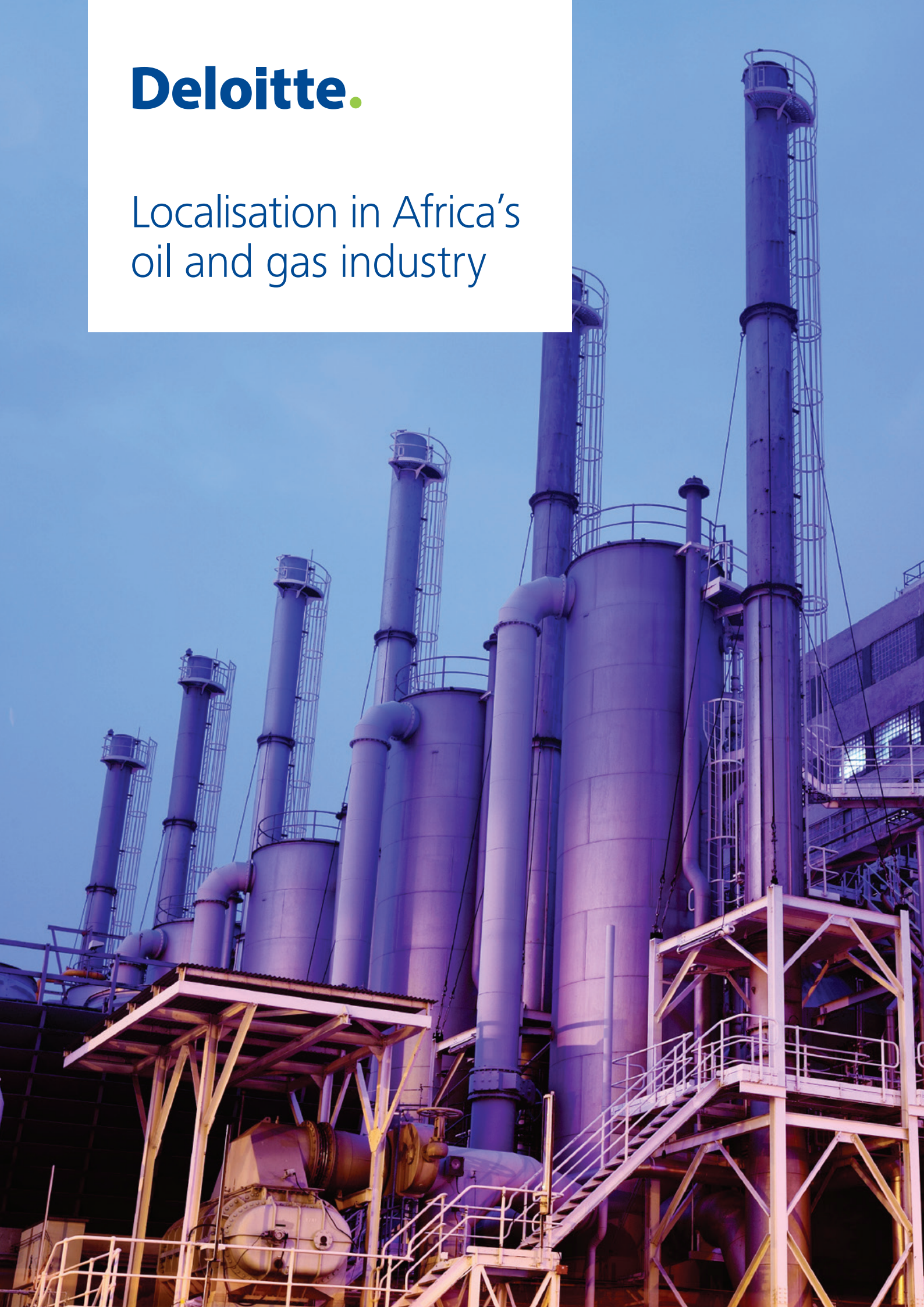




## Localisation in Africa's oil and gas industry



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# Introduction

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The plummeting and unstable oil price has been a major disruptor to international and national oil companies as well as governments of oil-rich countries. There has been a major shift towards developing and implementing sustainable cost-reduction strategies in order to survive the low oil price.



Multinational oil and gas companies must embrace the concept of localisation to lower their supply chain costs, boost local skills development, reduce risk and most of all, enhance their reputations with governments and local communities in the countries in which they operate.

The old paradigm of simply doing the bare minimum to comply with local legislation in order to obtain an operating licence is no longer sufficient to achieve long-term operational stability.

Multinationals need a regulatory licence as well as a socio-economic licence in order to operate in many countries on the continent. Without the goodwill of local communities and their governments, multinational firms simply cannot be certain of the long-term sustainability of their investments.

In this paper we explore the role of each stakeholder in developing sustainable localisation and local content strategies.

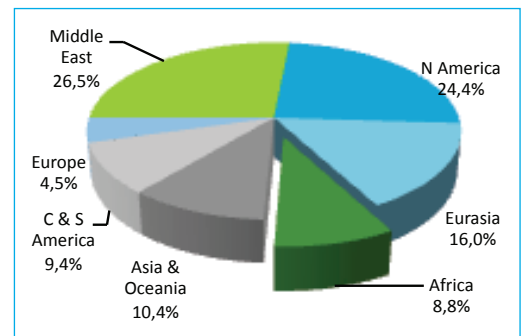
# Africa's oil & gas potential

The most significant growth in oil and gas investment on the continent has occurred in East Africa with discoveries in Kenya, Uganda, Ethiopia, Madagascar, Mozambique and Tanzania.

In terms of supply, Africa has become a significant player in the oil and gas industry over the last 10 years with research showing that the continent's contribution to global crude production has trended between 9.4% and 12.1% over the last 5 years with an increase of 2.1 million b/d from 2013 to 2014. Similarly, Africa's share of global gas production has been between 6% and 7% over the same period with a slight decrease of 0.1 Trillion cubic feet (Tcf) year on year to 2014.

The most significant growth in oil and gas investment on the continent has occurred in East Africa with discoveries in Kenya, Uganda, Ethiopia, Madagascar, Mozambique and Tanzania. South Africa has also been identified as a country with significant shale gas potential.

In terms of demand – according to the US Energy Information Administration's (EIA's) Short-Term Energy



Outlook, global liquid fuel consumption is expected to increase by 1.25 million b/d (1.4%) in 2015 and by a further 1.73 million b/d (1.8%) in 2016, with Africa's percentage increases greater than global rates at 153 thousand b/d (4.1%) in 2015 and 162 thousand b/d (4.2%).



# South Africa is thought to hold 390 Tcf of technically recoverable shale gas resources.

## Kenya

Significant oil discoveries in Kenya show estimated oil reserves in this basin amounting to 600 million barrels. The overall potential for the basin will be fully assessed over the next two years through a large programme of exploration and onshore and offshore appraisal wells. It is expected to be in excess of one billion barrels of oil. Exploration interest in Kenya has surged since the announcements of significant first oil strike discoveries in the past three years, resulting in a rush by international oil and gas companies to snap up what remains of Kenya's 46 exploration licences.

## Uganda

The exploration programme in Uganda's Lake Albert Rift Basin has delivered successful well appraisals that have boosted Uganda's proven reserves from zero in 2010 to 6.5 billion barrels of oil and 0.5 trillion cubic feet (Tcf) of non-associated gas. Uganda's Cabinet has recently approved plans to open up six exploration blocks in the oil-rich Albertine Basin for licensing in the country's first competitive bidding. Uganda and Kenya are on track to become oil exporters by late 2018 or early 2019.

## Ethiopia

Currently, there is no commercial production of hydrocarbons, though there have been significant natural gas discoveries with an initial estimate of 4 Tcf deposits. Hydrocarbon shows in the South Omo basin wells have given the indication of a working petroleum system, and therefore the acreage in southern Ethiopia remains prospective.

## South Africa

This country has attracted increased attention from international oil companies (IOCs) since the Karoo Basin's shale gas potential was first identified as comprising 600 000 square kilometres of thick, organic-rich shales. South Africa is thought to hold 390 Tcf of technically recoverable shale gas resources. However, shale gas development has been met with significant opposition from anti-fracking organisations due to the perceived risk of groundwater contamination, which led to a moratorium on shale development between 2011 and 2012. This has subsequently been lifted. There has also been much activity off-shore, with state-owned electricity utility Eskom announcing that it will enter into commercial negotiations for the supply of natural gas from the Ibubesi field off South Africa's west coast for power generation purposes. Here, a "best estimate prospective resource" of 7.8 Tcf has been published.

## Mozambique

With proven natural gas reserves greater than 100 Tcf, Mozambique is set to rank as the fourth-largest exporter of Liquefied Natural Gas (LNG) in the world. The final investment decision is expected during 2015 for its giant LNG project, with plans to construct a five-train LNG plant with a 25-million-tonne-per-year capacity. Due to the large reserves and geographic proximity to Asian markets, Mozambican natural gas is expected to have a promising future.

## Madagascar

Oil and gas exploration in Madagascar has been ongoing for over 100 years. The country's most promising asset, the Tsimiroro oil field, has a current estimate of 1.7 billion barrels contingent resource base. There are plans to build an export terminal on site, a pipeline to transport the oil to the coast, a marine terminal and an offshore mooring facility. The offshore Morondava basin is believed to contain large untapped deposits of hydrocarbons with estimates of undiscovered technically recoverable resources of 10.8 billion barrels of oil, 167 Tcf of natural gas, and 5 billion barrels of natural gas liquids. There is significant further opportunity for exploration, as Madagascar has a total 249 exploration blocks, of which 24 have so far been licensed to exploration companies.

# The five elements of localisation

The concept of localisation has been promoted by governments of resource-rich countries as a means for capacity building, human capital growth, supply chain development and partnership with local organisations. We propose the five elements of localisation are:

## 1. Socio-economic development

This is measured with indicators, such as gross domestic product (GDP), life expectancy, literacy and levels of employment. Accordingly, IOCs can undertake socio-economic development to ensure the sustainability of their operations, such as investing in schools (training the next-generation of workers) or infrastructure (to ensure reliable access to further resources). Socio-economic development initiatives can be seen as laying the foundation for long-term success through shared value.

## 5. Enterprise development

This focuses on individual enterprises to develop basic capabilities. These enterprises typically have low barriers to entry, with low complexity. However, they often struggle at the onset due to capital, skills or market constraints. This type of localisation could be seen as more outward-focused compared to supplier development, as social responsibility spending by uplifting communities through economic participation and employment creation. Typical examples of enterprise development success would generate opportunities for preferential procurement from local security, cleaning or catering services.

## 2. Local supplier development

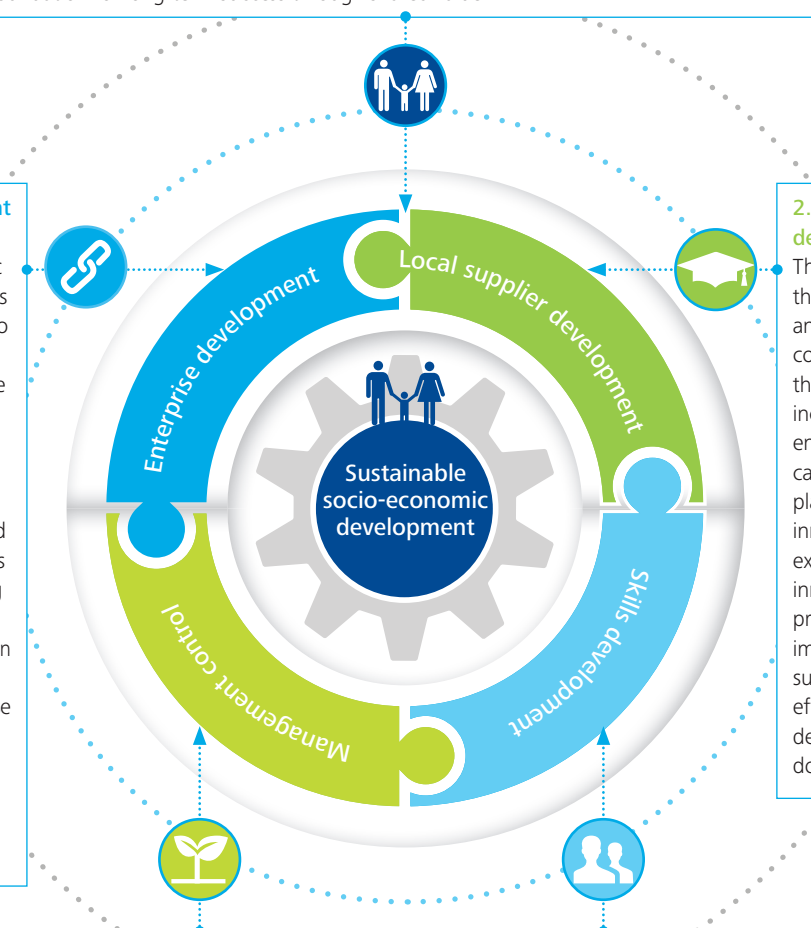
This is aimed at improving the local industry landscape and environment by creating competitive local suppliers through productivity-increasing initiatives, enhancement of existing capabilities or providing a platform for testing local innovations to promote exports of local skills or innovation. The focus is primarily on performance improvement by building supply chain management efficiencies through development of downstream suppliers.

## 4. Ownership and management control

This is aimed at increasing a company or operation's amount of local control. This may be associated with cheaper running costs (a reduced need for more expensive expatriates) and lays the foundation for knowledge and technology transfer to local sub-suppliers, academic institutions and people, since local resources have intimate links and relationships. In turn, this leads to greater development of in-country capabilities.

## 3. Skills development

This focuses on developing the skills of a local workforce, with the primary imperative being to improve productivity in the workplace and competitiveness. A secondary effect is that skills development should increase the prospects of work and encourage labour mobility, thereby improving the quality of life of workers. In the long term, this could even promote self-employment and improve the delivery of social services.





It is important to understand that none of these elements are discreet, rather there are linkages and synergies between these efforts – for instance enterprise development may give rise to supplier development, skills development may enable local management control and all may contribute to socio-economic development.

#### South Africa

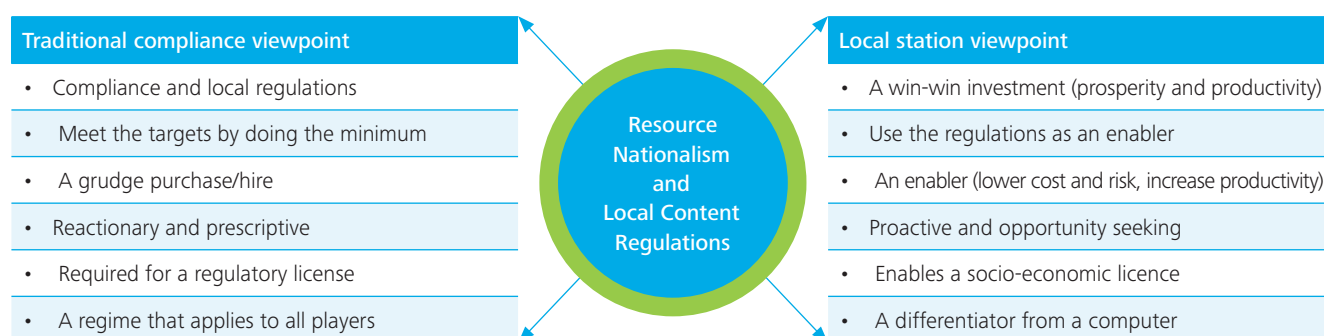
As part of the Mineral and Petroleum Resources Development Amendment Act and Broad-Based Black Economic Empowerment Policy, the State is entitled to secure a 20% stake in all new energy ventures. Additionally, government is allowed to buy an unspecified additional share and imposes local content requirements on all new applications for mineral rights.

Right holders shall achieve the following targets:

- Capital goods procurement: incremental targets on spend from 5% in 2010 to 40% in 2014
- Services procurement: incremental targets on spend from 30% in 2010 to 70% in 2014
- Consumables goods procurement: incremental targets on spend from 10% in 2010 to 50% in 2014
- International suppliers: annual spend target of 0.5% of procurement value
- Percentage of samples tested in South African facilities, with incremental compliance targets reaching 100% by 2014

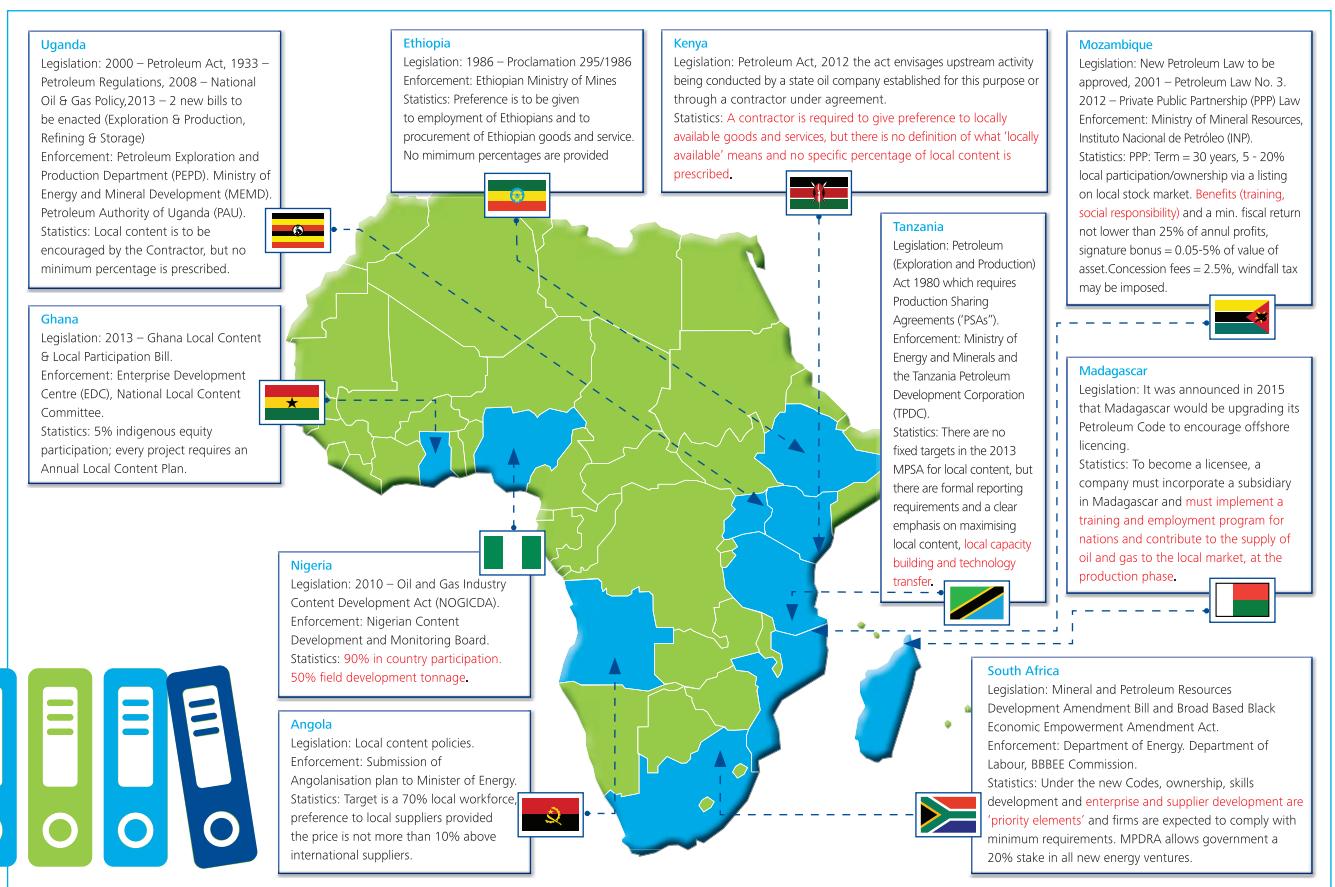
In the interest of oil-producing countries, governments will continue to intensify enforcement of local content and localisation compliance on all IOCs. It is therefore vital for IOCs to differentiate themselves to include in their strategies a focus on sharing their prosperity with the host country in a sustainable, mutually beneficial way.

To date, responses from IOCs have been varied, with the majority of investor and African exploration presentations highlighting the importance of developing relationships with communities. While these IOCs acknowledge that stakeholder engagement and partnerships are important, efforts regarding sourcing labour, as well as goods and services locally, are typically compromised in the name of maintaining quality and safety standards. Select IOCs have attempted to develop local contracting systems, but these focus on giving local companies a chance to access a bid and allow IOCs to appropriately evaluate a local company's capability. Where this falls short is that there is no focus on the long-term spend and the resulting opportunities that could be available to develop existing suppliers and even new enterprises.



# Changing legislation in Africa

Legislation in Africa typically focuses on local content by being prescriptive regarding the procurement of local labour, services and goods. At a base level, local content is to be encouraged by the contractor (and in some cases sub-contractor), but no minimum percentage is prescribed. While at the top end, local content is prescribed by law with minimum percentages for goods and services and local employment requirements. Lately, however, we are seeing localisation type laws being enacted, and we expect an increase in such legislation (see red in figure below).



The typical consequences of non-compliance vary between monetary and operational impacts on IOCs. Governments with milder local content provisions often do not have specific sanctions for non-compliance, but rather make the suggestion that companies give preferential treatment to local suppliers and workers. This must be contrasted with governments that implement financial penalties or only grant or renew licences with the condition of compliance with local content regulations. In Angola, the decree on "Mandatory Hiring and Training Of Angolans by Foreign Companies Operating in the Angolan Oil Industry Official Gazette" specifies the consequences of non-compliance with these regulations:

- "the non-full accomplishment of the plan of recruitment and training of Angolan workers by the companies or foreign entities can cause the cancellation of the contract, or alternatively,
- the Ministry of Petroleum can establish a pecuniary penalty which can reach an amount equal to the double of the sums which would have been spent if the duty had been accomplished."

It is therefore in the best interest of businesses to have a robust localisation strategy, thereby satisfying local content requirements.



# Localisation and stakeholder interactions



Traditionally, local content programmes have been focused on job creation and up-skilling of workers only for the particular project, rather than taking a longer-term and broader view on education to uplift the entire community and better the workforce across the entire value chain. Existing local suppliers were traditionally utilised rather than taking a more mature approach to wider enterprise development to create new suppliers that compete across a number of industries. In other words, companies should look beyond local content and more towards localisation. Below are some ideas on what the different stakeholder groups can do to improve their interactions to leverage localisation.

## Government

National government is responsible for collection of taxes and royalties and setting of legislation and policies to set standards for local content and localisation initiatives such as enterprise and supplier development requirements. Companies will need to comply with this legislation to ensure approval of exploration and production licences. High participation of local workforce can be achieved with capacity building of local people through investment in education and training to develop employees to a standard to be sustainably employed by the IOCs. This can be accomplished through introduction of bursaries to study abroad for local candidates in the short term, or establishment of local tertiary institutions to upskill the workforce in the longer term. Residents of the host countries should be employed through exploration to production phases on all staff levels.

## IOCs

In some instances, investment in local community education, healthcare and enterprise development is a requirement of governments to secure oil and gas licences. Stakeholder engagement entails consultations with local communities to keep them informed on operations, and it serves as early warning to identify any potential community disputes that could negatively affect the IOCs.

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High participation of local workforce can be achieved with capacity building of local people through investment in education and training to develop employees to a standard to be sustainably employed by the IOCs.

# Challenges and benefits of localisation

Localisation faces a number of challenges; however, it has the potential to realise significant benefits and opportunities for NOCs, IOCs and host countries.

## Perceptions and challenges

- **High cost** of local content, and in certain cases the investment, does not deliver the expected benefits.
- **Technology and equipment** are only available in developed industrialised countries.
- **There is a lack of specialised technical, engineering or management skills** in the host country.
- Oil and gas work requires **specialisation and industry maturity** that cannot be replicated.
- **Complementary products** are not readily available locally.

## Benefits

- A localised supply chain has the benefit of **improved security of supply**, allowing for **ease of procurement** and **reduction of lead times** for specialised part ordering and machine downtime resulting from component breakdowns. Local service is also significantly more efficient and cost effective than long-distance support.
- **Improved responsiveness** with better communication and agility of supply, resulting in lower stock level requirements.
- **Lower costs** are achieved due to lower logistics costs, cheaper building of capital equipment and government incentives aimed at stimulating local manufacturing. Additional competition in the local market and reduction on foreign exchange exposure will result in more cost-effective procurement for oil and gas companies.
- Business development in Africa will **improve company perceptions of the continent**, resulting in **increased foreign direct investment (FDI)**. Other African countries will also see the benefits of localisation, and they will wish to imitate the same in their own economies, thereby setting a precedent on the continent for further local content initiatives.
- Investments will realise great **economic rewards for the host countries**, with benefits and added value significantly exceeding costs.
- **Upliftment of local industrial capabilities** that benefit the host country and the value chain required by the oil and gas companies.
- Greater **availability of sought-after skills** in country for oil and gas projects, research and development, and support of operations.
- **Self-sufficient local industries** that can support the oil and gas sector and the host country's economy as a whole.
- **Improvement of local community environments**, through reduced unemployment levels due to higher economic activity and opportunities – A move from unskilled to semi-skilled workforce will lead to better productivity and increased diversity in work, resulting in skills retention.



# Localisation: the benefits for IOCs

IOCs reap significant reward from their host country resources; and, as a result, governments of resource-rich countries are attempting to set up mechanisms to ensure that the presence of such IOCs creates an infrastructure for lasting and inclusive growth, and empowering African achievement.



IOCs reap significant reward from their host country resources; and, as a result, governments of resource-rich countries are attempting to set up mechanisms to ensure that the presence of such IOCs creates an infrastructure for lasting and inclusive growth, and empowering African achievement. This is aligned with the concept of Resource Nationalism, in that such resource-rich sovereign nations wish to ensure national development, as the finite resource is monetised.

Prior to the 1970s, IOCs were free to pursue resources regardless of location, in that national governments controlled merely 10% of global reserves. Today, conventional oil and gas reserves are almost entirely controlled by their respective governments. Accordingly, since the 1970s, local content initiatives have been used as a mechanism for national development. These were at first limited to the establishment of national oil companies (NOCs) and placing restrictions on the importation of goods and services from abroad. The idea being that NOCs would be more likely to procure local labour, goods and services, while the latter restrictions would force IOCs to do the same. Significant government interest is evidenced by the fact that 88% of proven oil and gas reserves are under the control of NOCs. However, this was not sustainable in certain cases as local suppliers were not sophisticated enough to compete against international suppliers compelling companies (including certain NOCs) to continue to rely on imports.

Significant government interest is evidenced by the fact that 88% of proven oil and gas reserves are under the control of NOCs.



# What it takes to develop a successful localisation strategy

Oil and gas companies should set the foundation during the exploration phase to comply with all local content and social contributions required for initial licensing. Looking beyond this, in order for local content to be sustainable, a long-term, end-to-end localisation approach must be followed from exploration through to decommissioning phases in the typical oil and gas lifecycle.

Engagement with local communities, authorities and NGOs should commence from an early stage in the project lifecycle in order to lay the foundation for long-term relationships, allowing for active communication between all parties. Community consultation, development and stakeholder management are critical to mitigate reputational risk for investors and local stakeholders.

Long-term projects that create sustainable economic benefits for the host country work best if they are done in cross-industry joint ventures or in a clustered hub structure to leverage off co-located workforces and infrastructure. Socio-economic value is created by oil and gas companies when the localisation strategy is designed to be part of the overall development strategy of the host country. This is shown in the models below.

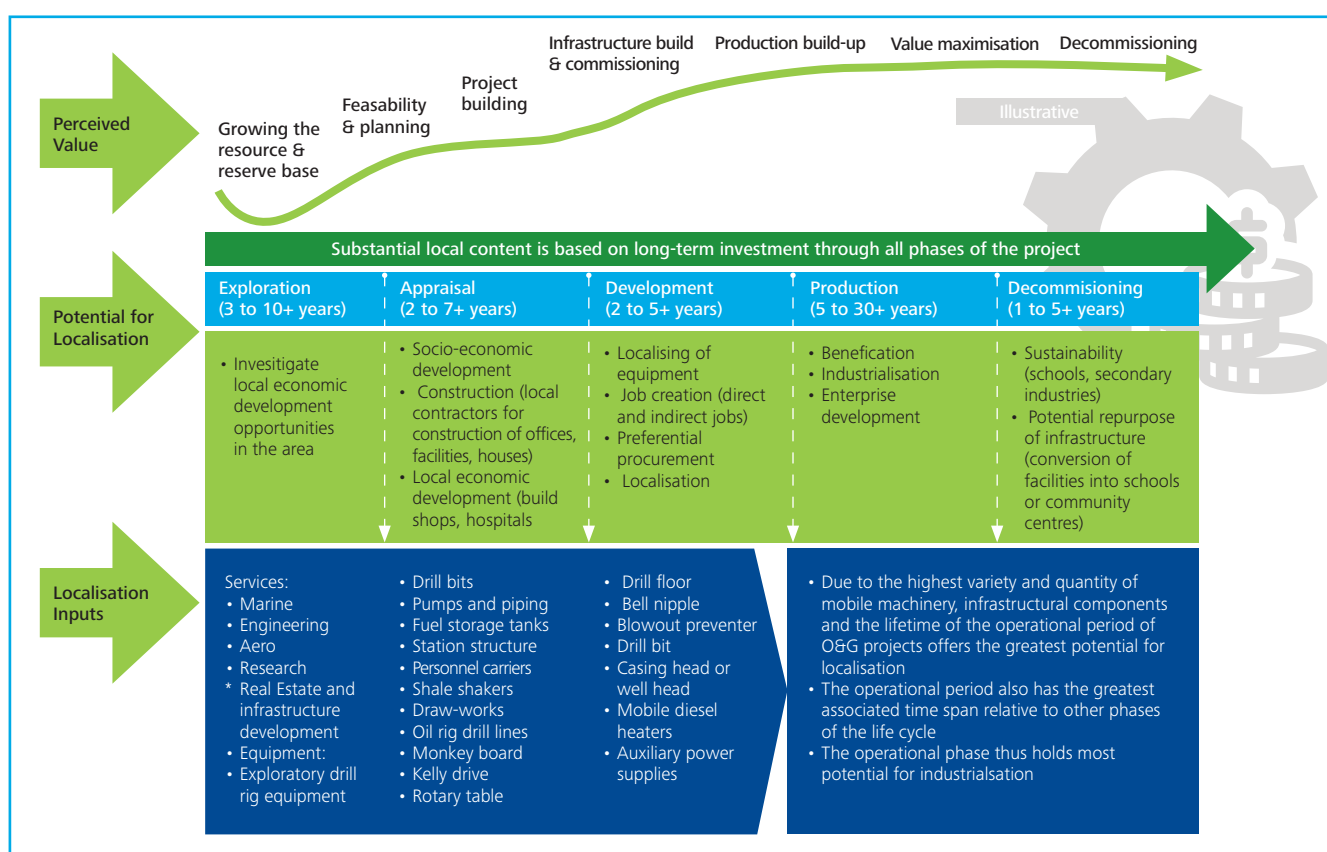
## Localisation opportunities across the oil and gas value chain

It is important to consider all localisation options across the value chain. Figures 1 and 2 below and on the following page provide some suggested example of forward and backward linkage opportunities:

### Backward linkages

Backward linkages exist when the growth of an industry leads to the growth of the industries that supply it; for example, growth of the E&P industry may encourage the growth of the Oil Field Services companies (direct) and associated suppliers (indirect = rig and ship repair, welding, scaffolding, fabrication, construction).

Figure 1. Backward linkage opportunities are possible along all links in the value chain.





## Localisation must be tailored for the company and the particular stage of maturity of the business or project.

Companies transfer knowledge of methodologies and technologies to local industry through specialised training to enable employment on oil and gas projects. Technology development in backward linkages provides a base from which sustained diversification may occur through the development of related industries. This ensures empowerment of local suppliers and transferral of major ownership and control to nationals of the host countries.

### Development of forward linkages

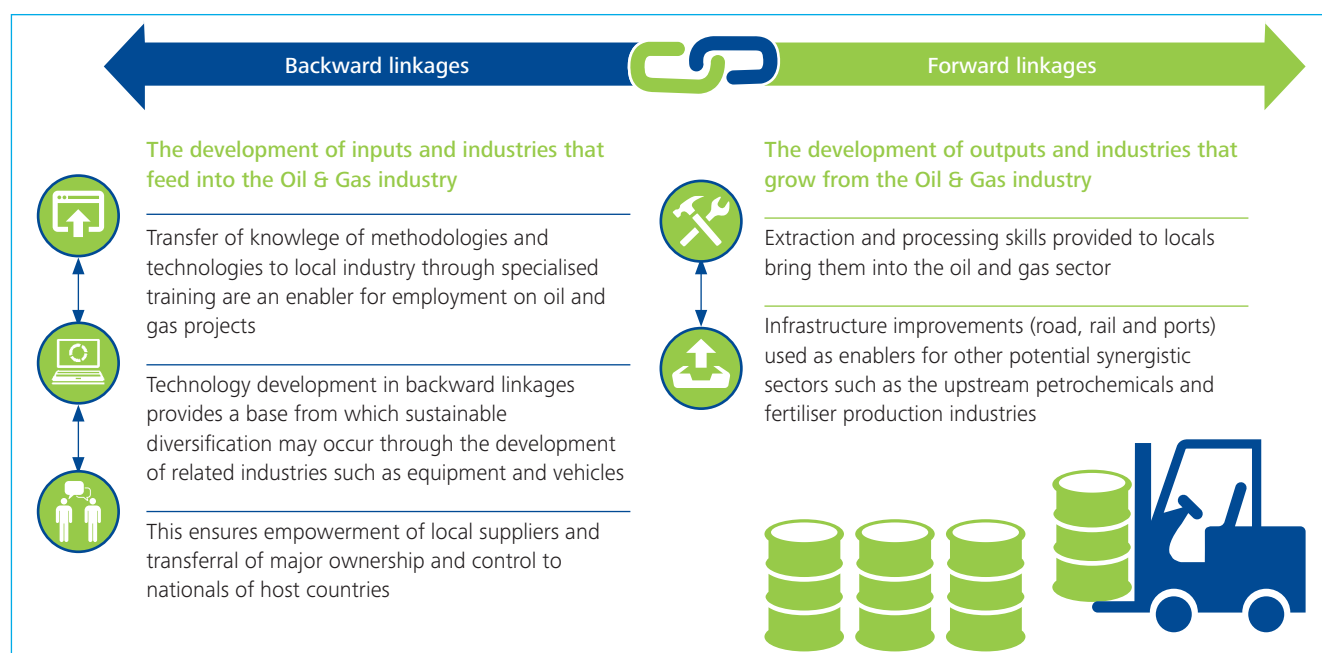
Forward linkages exist when the growth of an industry leads to the growth of the industries that use its output as input, or when the output of an industry helps propel another industry; for example, through a forward linkage E&P could create transport or even refining industries (direct) as well as associated suppliers (indirect = pressure vessel fabrication, engineering services, logistics and storage).

Local development of skills and capacity in the oil and gas sector (extraction and processing), as well as associated infrastructure improvements (road, rail and ports), aids other potential synergistic sectors such as the upstream petrochemicals and fertiliser production industries.

In this regard, the demand for petroleum products in Africa is ever increasing; however, the majority of African crude is exported and used in foreign refineries to be re-imported as finished products. This occurs as fuel marketers prefer imports from outside Africa, which supply a cheaper and higher-quality product. The lack of local beneficiation is evidenced by research, indicating that over the past decade only seven of 90 refinery projects in Africa were completed.

Making use of local skills and capacity to develop African oil and gas finished product output, as well as enabling other industries and local infrastructure to leverage off the oil and gas operations, will result in significant additional local benefits.

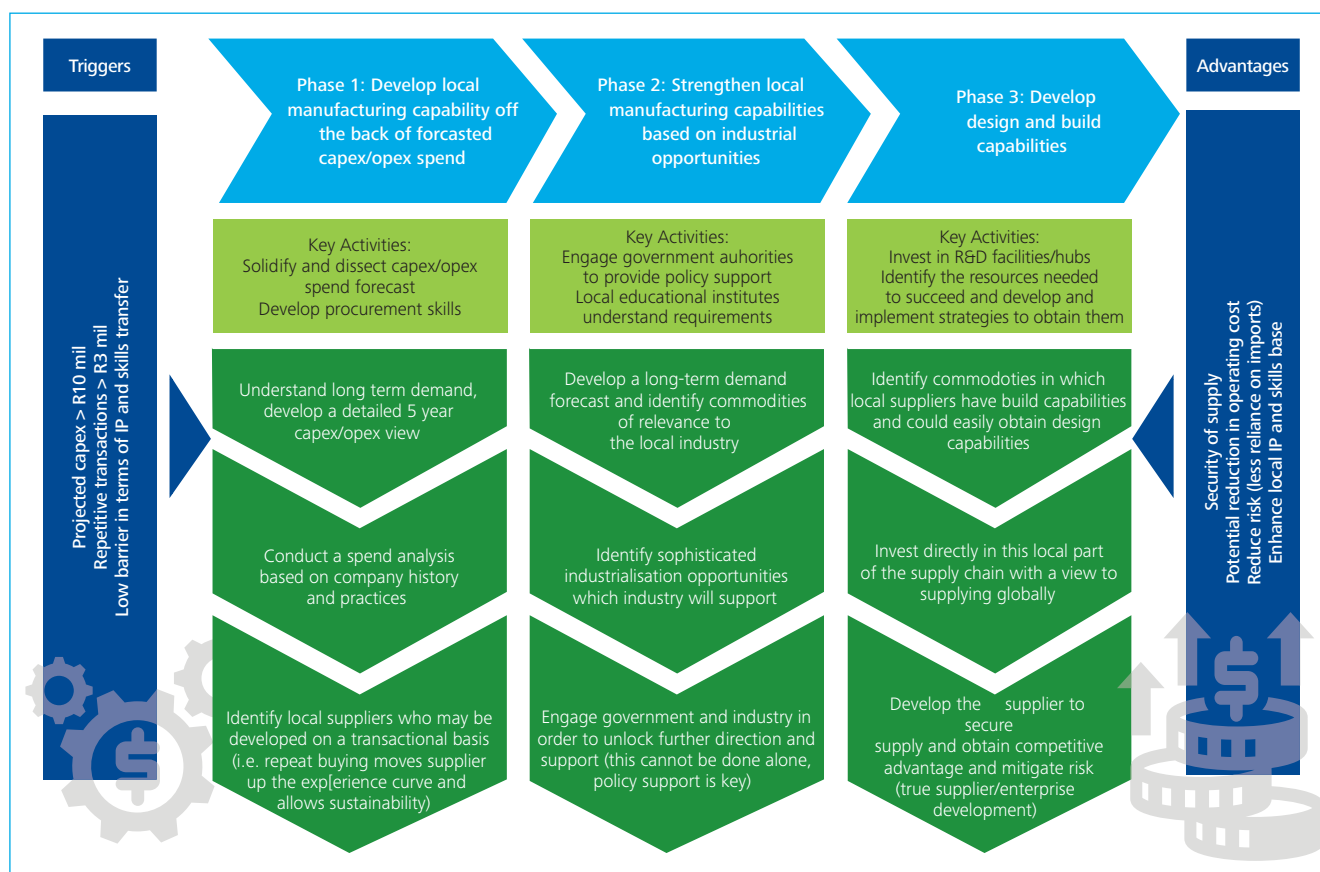
Figure 2: Backward and Forward linkages



# Taking advantage of localisation opportunities as a result of long-term spend

Localisation must be tailored for the company and the particular stage of maturity of the business or project. For many upstream oil and gas companies as well as oil field services companies, a long-term, high-capex-spend project offers the opportunity to explore local manufacturing capabilities (enterprise and supplier development) by leveraging on the forecasted spend. It is pointless developing enterprises and suppliers, only to watch them fail due to sole reliance on the developer who may close down due to an exhausted reserve or curtailing of operations for financial reasons. Here, the long-term nature of the repeat Capex/Opex spend results in a steady demand, thereby enhancing the sustainability chances of the supplier. Furthermore, repeat buying allows the supplier to move up the experience curve, thereby addressing operational efficiency issues to rapidly become profitable.

Figure 3: Localisation strategic journey through supplier and enterprise development



The typical triggers for such localisation, and advantages thereof, are shown above.

The model is made up of three distinct phases:

**Phase 1:** This is typified by developing the local manufacturing/servicing capability on the back of the forecasted Capex/Opex spend. It is therefore critical that organisations understand the long-term demands by unpacking their forecasted spend. Interestingly, spend analyses tend to be historically focused for the purposes of cost reduction. Here a forecast spend analysis (based on actual project plans or projects of a similar nature) must be conducted to identify commodities that will be subject to repetitive procurement transactions. In other words, a shortlist of opportunity commodities is identified. The next step involves leveraging commodity and industry knowledge to prioritise which commodities should be focused on in terms of developing local suppliers. Accordingly, in this phase, local supplier development is driven by procurement on a transactional basis.



As such, suitable in-house skills are required in order to analyse forecasted spend, and to identify appropriate opportunities while not exposing the project or organisation to undue risk and delay. Phase 1 can last anywhere from three to five years before the organisation has enough institutional and local industry knowledge to move on to Phase 2.

**Phase 2:** The next phase is to strengthen local manufacturing based on industrial opportunities. Here, long-term demand forecasts allow companies to engage the necessary authorities and education institutes for direction and support. The first step is to leverage off the long-term demand forecast conducted in Phase 1 and to identify commodities of relevance to the local industry. This requires an understanding of the character of the local industry to match-make these characteristics with more sophisticated industrialisation opportunities. The intention is to strengthen the local industry by obtaining stakeholder (government/educational institute) support. This ensures that the correctly trained human resources are produced locally, while government and industry support is leveraged to create a more sophisticated industry, ready to take advantage in terms of supplying the organisation with more advanced commodities. Phase 2 therefore involves transforming the local industry to become more sophisticated, thereby allowing it to take advantage of more advanced procurement opportunities that would otherwise be off-shore. Examples of such activities include maintenance and repair capabilities, component manufacture and upgrade capabilities, as well as industries based on by-products. For instance in the case of Mozambique, as highlighted previously, a four-train LNG plant would result in a significant amount of by-product material being available (e.g. associated hydrocarbons, known as “natural gas liquids” [NGLs] can be very valuable by-products of natural gas processing). NGLs include ethane, propane, butane, iso-butane and natural gasoline.

These NGLs are sold separately and have a variety of different uses; raw materials for oil refineries or petrochemical plants, as sources of energy, and for enhancing oil recovery in oil wells. Therefore, opportunities may arise in complementary industries (e.g. LPG production, storage and distribution) to undertake localisation and address Mozambique’s socio-economic needs through such synergies. Accordingly, the timeframe of this phase depends on a variety of factors (nature and maturity of local industry, skills levels, sophistication of commodities procured). Since it takes time to understand the local industry, such a phase is typically undertaken within five to ten years of the company operating in the local industry.

**Phase 3:** The final phase involves developing a local design and build capability through investment in research and development facilities and hubs, while ensuring the resources needed to succeed are identified. Strategies are developed and implemented to obtain such resources. Here, a company must have the ability to identify commodities in which local suppliers have built capabilities and could easily obtain design capabilities. The aim here is to invest directly in this local part of the supply chain with a view to supplying globally.

A company may therefore develop the supplier to secure supply, obtain a competitive advantage or mitigate risk. As in Phase 2, the timeframe of this phase depends on a variety of factors (complexity of commodity, type of value chain, number of competitors and sophistication of the industry). It typically requires significant operational experience within an industry (approximately 10 years) and a deep understanding of the industry and market before such companies will undertake such backward integration.

# The way forward regarding localisation and local content



## Government policy

Policy governing local content and localisation in Africa needs to be brought in line with international standards through legislated compliance requirements for exploration and production licences supported by structured incentive plans aimed at ensuring full industry participation.

### Incentives

Tax and royalties Incentives/breaks on localisation initiatives that oil and gas companies undertake.	For compliant companies, preferential trading status with government.	Preferential infrastructural allotment for compliant companies, e.g. rail slots, port allocation for bulk oil liftings/equipment shipping.
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## Company policy

IOCs policies need to support the following key enablers to guide the implementing localisation:

**Capacity and capability enablers** are defined by formalised roles and responsibilities designed to ensure localisation implementation occurs. These enablers provide internal support, internal structure and skills development.

**Process enablers** allow for companies to develop a stepped strategic process that ensures high-value generating localisation opportunities be identified and prioritised. Monitoring of internal compliance and evaluating completed projects and initiatives will assure continual learning. An evaluation process performed post-contract localisation, integrated with a new contract management policy will ensure parties meet their obligations and provide industrialisation benefits.

**Mind-set and behaviour enablers** ensure the correct approach and behaviour regarding local content be maintained as a key enabler for company staff and stakeholders. Continuous engagement with the supplier base will lead to better understanding of localisation opportunities.

## End note

Given the immense potential that the African oil and gas industry holds, it is critical that all stakeholders be committed to sustainable local content development. We believe that localisation offers such an opportunity. The nature of the oil and gas industry, namely the long-term high capex spend projects, offers the opportunity to explore local manufacturing capabilities (enterprise and supplier development) by leveraging on the forecasted spend. The approach above provides a structured way of identifying localisation opportunities and of harnessing the necessary resources to take advantage of these.

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Given the immense potential that the African oil and gas industry holds, it is critical that all stakeholders be committed to sustainable local content development.



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## Glossary

b/d = Barrels per day

Capex = Capital expenditure

EIA = US Energy Information Administration

E&P = Exploration and Production

IOC = international oil company

LNG = liquid natural gas

NGO = non-governmental organisation

NOC = national oil company

Opex = operating expenditure

TCF = trillion cubic feet

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