IN ON AFRICA
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Connecting Africa's Potential

African Oil & Gas:
Evolving the industry post Covid-19

September 2021

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About this report

With the ever-changing landscape of energy, the oil and gas industry is set to undergo significant shifts in the coming decade and beyond. As the world begins to move away from hydrocarbon sources of fuel the industry will need to reinvent itself or stand to lose substantial ground to alternative energy sources. This IOA report seeks to provide the reader with a view of the current state of the industry, unpacking some of the main developments that have taken place in recent years, and delineating a route forward.

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Among the many facets of the industry, gas-to-power and gas flaring are two of the key priorities going forward for a number of governments that are seeking more sustainable power generation.
Image courtesy: Varodrig/WikiCommons

EXECUTIVE SUMMARY

Though the oil industry has been in decline following the price crash in 2014, the impact of Covid-19 over the course of 2020 further caused many projects to stall or be scuttled entirely, with analysts fearing that 2019 might have been the last peak year for the crude industry. In parallel, governments across the world have begun to implement various strategies as part of the energy transition and started to alter the investment landscape for fossil fuel. The industry must now navigate treacherous new waters to maintain profitability and relevance for the rest of the century and gradually shift focus to more diversified revenue generation avenues.

The culmination of factors in global oil demand and the onset of Covid-19 have pushed a realignment in strategy for major African producers toward offshore focus for new projects. In North Africa, new onshore developments have stalled in Egypt’s Western desert with attention shifting offshore; The same trend has been evident among West and East African projects in markets like Ghana, Nigeria, Senegal and Tanzania. In Central Africa, Cameroon, Equatorial Guinea and Gabon remain key contributors to regional offshore exploration and production, and though often overlooked destinations for infrastructure development, continue to offer potential in the offshore space. In the Southern African oil and gas space, although Angola has opted to shift its focus on downstream projects, Mozambique and South Africa are seeing additional investments in offshore activities. Offshore projects in these two markets could potentially soar further once security and stability (particularly in the case of Mozambique) and sound regulations are reinforced.

Nonetheless, some onshore developments are evident in East Africa, including the launch of South Sudan's first oil license bidding round and the start of the East Africa Crude Oil Pipeline (EACOP).

Despite evidence of existing opportunities both offshore and onshore, several key challenges continue to impact the growth of the oil and gas industry on the continent. These challenges range from poor government policies and weak investments in necessary infrastructure requirements, to a slow transition toward renewable energy sources and a lack of interest surrounding new project financing given volatile global prices.

Amid declining revenues for extractive industries, local governments are under considerable pressure to raise profits and ensure beneficiation for domestic communities and economies. While some states have taken the pro-market route of convincing firms with more efficient taxation schemes, others have taken a tougher stance, placing greater emphasis on environmental, social and governance (ESG) principles. Mindful that managing steeper compliance requirements while securing project financing will be an ongoing challenge in an era of fossil fuel divestment, African states are promoting development beyond simple extraction and are looking to advance up the value chain, particularly in downstream initiatives.

Though a more guided approach is needed on the part of African governments, they are advised not to push populist policies too far as they have limited leverage given volatile oil prices. African governments are instead encouraged to establish proper incentives to motivate companies to engage in ESG schemes. Private investors on the other hand are advised to diversify their domestic holdings with an eye to eventually pivot towards stronger emphasis on gas exploration and production in the coming 20 years. This strategy is not to be taken lightly however, as companies that move too early could find themselves without a feasible domestic or international market for consumption, while those that wait too long risk being shut out of fast-emerging hybrid economies. Holistically, both governments and investors need to work together in managing the energy transition and its associated challenges and opportunities in order to achieve their respective goals.

1. The State of African Oil & Gas

The last few years have seen Africa bear the fruit of the early 2000's commodities boom. Since 2010 much additional progress has been made toward new project starts as a result of the preceding commodity boom, particularly in new markets such as Kenya, Tanzania and Uganda where potential exists even though infrastructure and overall development is limited. Oil and gas legislations are modernising as well to match forthcoming activities, while midstream and downstream infrastructures are being rolled out to both increase export potential and promote the sector's value-addition.

Unfortunately, 2020 came to prove that no economic state lasts indefinitely, and 2021 now finds several planned oil and gas projects with uncertain futures as many giants in the industry and their financiers attempt to make do in an economy struck by highly volatile oil prices. Fears abound that 2019 might have been the last global peak of oil production and demand, and that going forward the industry will face ever increasing restrictions, particularly in financing, due to growing calls for divestment and the new emphasis on accelerating the renewables transition.

Though the impacts across markets differs in scale, there is no disputing that 2020 was a lost year for the industry overall, with many projects across the continent put on hold or cancelled as companies moved towards safer, more dependable investments. Some long-awaited developments were only stalled temporarily, such as the Senegal Sangomar field and EACOP, though others, particularly marginal onshore fields in countries such as Angola and Nigeria, have been put on hold perhaps indefinitely.

Additionally, insurgent activities in regions such as northern Mozambique, Nigeria's Delta State and the Horn of Africa have underlined the importance of oil and gas projects to secure the support of local communities as these have often been excepted from the benefits of these resources. The ostracisation in these locations has left various communities reeling from environmental and social impacts, sometimes pushing those most marginalised toward militant activities.

For new markets such as Namibia, Senegal and the East African countries, this should serve as a note of caution not to sideline their own communities in their plans to tap into unexplored onshore and offshore hydrocarbon reserves.

Given sufficient investment and strong policies that support local development, nascent markets like those in East Africa could grow to outclass their more established competitors if they proceed with a carefully planned growth strategy. The exploitation of gas and the construction of infrastructure for the conversion and transport of LNG offers perhaps the best new growth opportunity for producers who did not fully participate in past oil booms. Many such projects are already underway on the continent, clearly indicating that local governments have taken stock of prevailing trends and sought to position themselves accordingly.

There is limited time to prepare facilities and meet this shifting pattern of demand. Many of Africa's biggest export partners including the EU and China have plans in motion to ban the sale of new petrol and diesel fueled cars by the mid 2030's.Efforts are also underway to transition the other parts of the transport industry like aircraft and maritime vessels. Governments and investors will need to work together in close unison to ensure that Africa is not left behind at this key juncture. Recent gas developments across much of the continent highlight that governments are highly aware of the need to adapt the changing climate in the hydrocarbons space. The mort volatile nature of the gas market compared to crude oil means that A key priority for national development plans going forward will be the putting in place of policies and structures capable of mitigating against volatile commodity prices and the fallout this has on budgets and key infrastructure investments.

An oil tanker near port in Dar es Salaam, Tanzania. Local pipeline and port developments could soon see the country become the premier export hub for hydrocarbons in the region.
Image courtesy: Wiki Commons

Going forward, the direction that the industry takes in the African context will be of particular importance. Without clear policies or structured support on the part of governments, international investors will be challenged with finding attractive plays, especially for projects that require significant capital injection.

Foreign investors will also need to find middle-ground when looking at local beneficiation efforts and when navigating the impact of the current shifts in government decisions to promote the inclusion of local communities in the activities and profits of the sector.

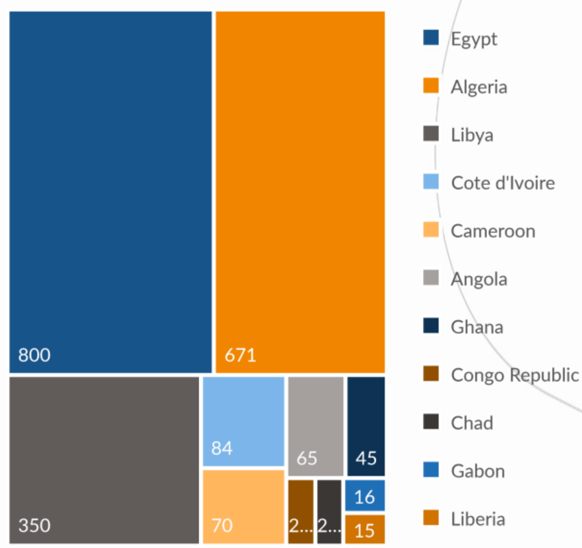
State of African Oil and Gas industry

Current factors at play in oil

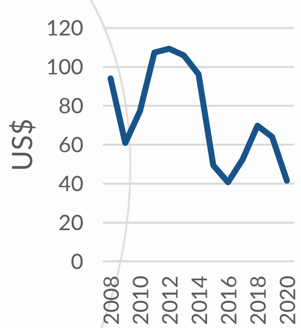
Volatile prices are forcing a policy rethink and a pivot up the value chain. Factors involved in the decline include:

- The burst of a post-2008 speculation bubble
- Rise of renewable resources given innovation and lower prices
- US Shale Gas boom since the late 2000s which made the country a competitive supplier, pulling the price down further globally
- Saudi-led OPEC response to US shale output in 2014, which also drove the price collapse even further despite their best efforts

Refining capacity in selected African countries



Basket price p/bl

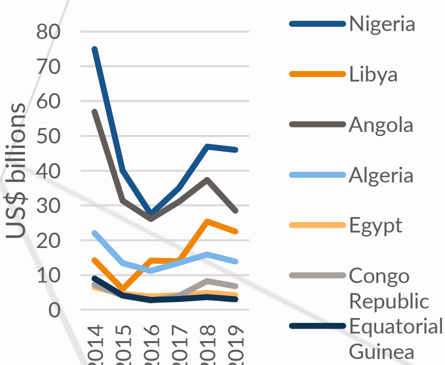


Production figures in selected African countries (b/d – 2020)	
Nigeria	1 360 000
Libya	1 170 000
Angola	1 140 000
Algeria	874 000
Egypt	560 000
Congo Republic	271 000
Ghana	189 000
Gabon	160 000
Equatorial Guinea	153 000
Chad	109 000

Gradual move to gas

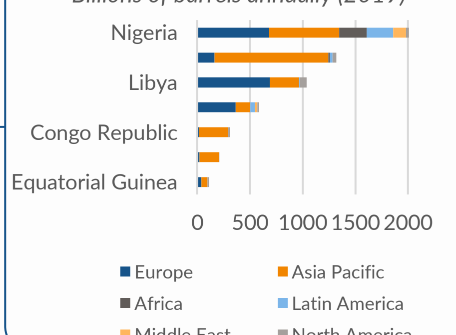
As the world pivots to gas, Sub-Saharan economies are in a prime position to close the development gaps between themselves and their North African counterparts; Mozambique, Nigeria and Tanzania are all positioning for this shift.

Oil export earnings in selected African countries

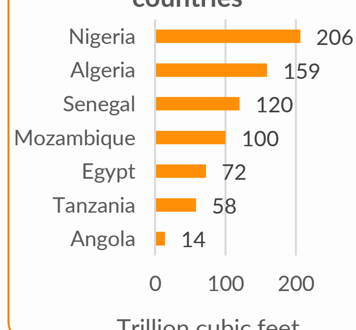


Top export destinations for African crude

Billions of barrels annually (2019)



Gas reserves in selected African countries



2. Impact of Covid-19 over 2020

Covid-19 has sent heavy shockwaves through the global oil and gas industry, the heaviest since the 2014 commodities price downturn. Border lockdowns and travel restrictions in 2020 thwarted international transportation of hydrocarbon products and largely contributed to the dramatic decline in demand and price of crude products both in Africa and around the globe.

In early December 2019, the barrel price of crude oil traded at US$68, though the price began to drop precipitously following the initial Covid-19 outbreak – the price reached a low of US$27 in late March 2020 as demand slowed and global cargo traffic came to a standstill. Soon after, panic started setting in, with traders seeking to unbundle from options on crude contracts. This compounded to the already depressed prices caused by an earlier breakdown of negotiations between members of the Organisation of Petroleum Exporting Countries (OPEC) – mainly the price war between Saudi Arabia and Russia, further pushing the price into the negatives during April of 2020.

The prolonged depression of oil prices during the Covid-19 pandemic has added great pressure on Africa's oil and gas industry, causing a spate of divestments across the continent, with many new project launches either delayed or abandoned entirely in fear of potential ramifications of the poor performance of the industry on future consumer demand. British upstream giant Tullow Oil for example announced force majeure on various projects in 2020 and opted to sell its assets in some markets like Uganda. Similarly, Eni has completely pulled out of the Republic of Congo, and Occidental is fully divesting its assets from Ghana. BP also drew down on new exploration activities in Algeria, while ExxonMobil chose to divest from offshore fields in West Africa and from mature onshore assets in Chad.

These business decisions are invariably affecting local economies, with the most punishing effects being felt by heavily oil dependent economies such as Algeria, Angola, Nigeria and South Sudan. For moderate oil and gas producing countries like Ghana which have a more diversified economy, the slowdown in the oil market was offset by better performance in other industries.

The continuous pressures resulting from an underperforming oil industry have generated notable policy responses on the continent, pushing governments to either liberalise the oil and gas space in order to attract new investments (as is the case in larger producer markets like Algeria, Angola, and Nigeria) or tighten government control of the industry to allow local markets to better navigate through the downturn (as in the case of South Sudan).

As the months progressed through mid-2020, the stagnation in oil demand and build up of inventory began to ease with the resumption of economic activities in some parts of the world; oil prices remained flat however, at around US$40 p/bl until October. Once mass vaccinations commenced toward the tail-end of 2020 the price of crude started to rebound and stood at US$75 p/bl at the end of July 2021. Despite the positive recovery in oil prices, the industry's performance is projected to remain muted in the coming years due to certain external factors such as medium-term fossil fuel divestment and a general reorientation towards less risky projects in developed markets.

A Ugandan health worker affiliated with AMISOM is administering a Covid-19 vaccine to a recipient in Somalia. The effective rollout of Covid vaccinations across the entire continent will be a deciding factor in local medium-term economic recovery.

Image courtesy: Flickr/AMISOM Public Information

Now in mid-2021, a return to a semblance of normal economic activity is evident across the world, but the oil and gas industry continues to experience sub-optimal performance compared to other industries, with demand and production still well below the sector's 2019 peak. The outlook of the industry remains subdued for the rest of 2021 and overall performance is expected at 4% below the 2019 peak.

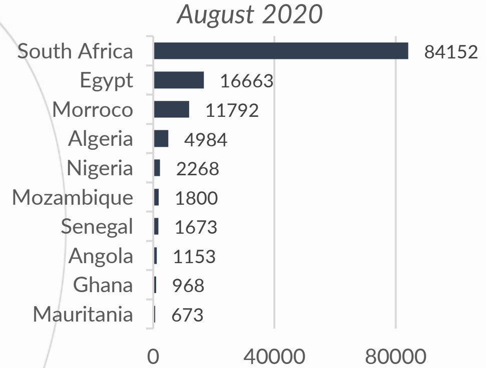
While there currently are many ongoing onshore oil and gas developments, especially in East Africa, most firms are pivoting towards offshore fields and more cost effective, risk-averse operations. Gas is expected to maintain strong demand in the long term, although increasing uncertainty in the upstream oil industry will pressure African countries to maximise their fiscal and regulatory efficiency to attract investor interest over the medium-term.

Impacts of Covid-19 in Africa

Health Impacts

The direct health impact of Covid-19 in African countries has thus far been trivial compared to some developed economies

Covid-19 deaths in selected African countries*
August 2020



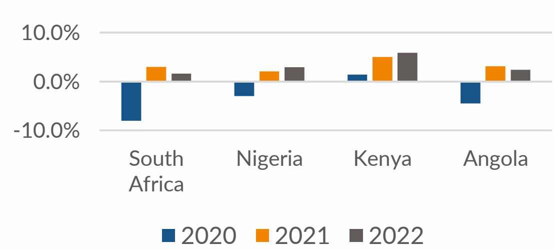
Economic impacts

The economic impacts have been more pervasive and lasting. By the end of 2021 growth is expected to rebound in some of the top economies, albeit sluggishly

40 Million

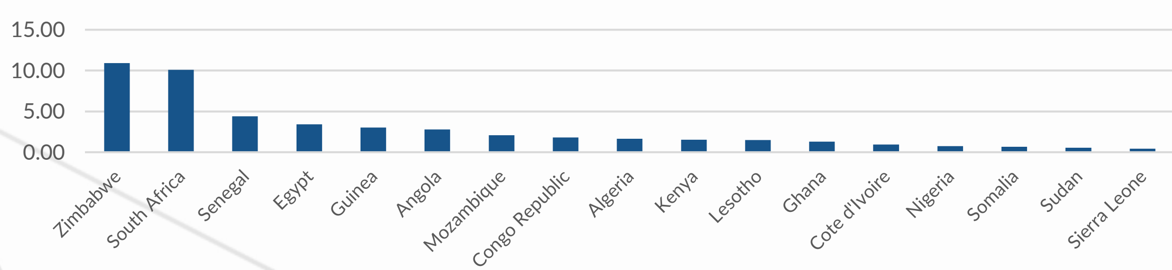
The number of Africans the World Bank predicts could be pushed into extreme poverty due to Covid-19.

Expected growth rates post 2021 in selected African markets



African countries have made significant progress on the pace of vaccinations since the beginning of this year. Major oil and gas producers like Algeria, Angola and Nigeria are however lagging behind which may impede planned progress over the rest of 2021 and going into 2022.

Fully vaccinated citizens in selected African countries (per 100 people)
September 2021



*Incidence of deaths among major producers has been limited, and given gradually rising vaccination rates it may stabilise further which will bode well for planned inland projects in particular.

3. Regional Developments

3.1 North Africa

North Africa holds a mix of mature (Egypt, Libya) and nascent oil and gas markets (Mauritania) each of which are going through important transitions during the Covid-19 pandemic period. The pandemic has caused sharp declines in oil and gas sales, forcing countries to reassess their growth strategies. In Algeria for example local authorities have made efforts to reignite international investor interest in state oil company Sonatrach, and have extended a cooperation deal with nearby Tunisia. Mauritania meanwhile has begun stepping up for the first time as a potential major oil and gas producer after the 2019 discoveries of Orca 1 and the Ahmeyin development that it shares with Senegal. In Libya exports have begun to pick up again for the first time since the end of the civil war, but the ongoing political instability has left the future of the country's economy in some doubt. Egypt had in the years prior to Covid-19 facilitated sizeable oil and gas exploration activities and still sees the hydrocarbon industry – particularly gas, which it envisions as an important step to its green transition - as a vital building block of its economy.

Algeria has historically had a belligerent and mistrusting attitude towards the broader oil and gas sector, preferring to keep the industry controlled by state-owned Sonatrach. However, the government has been trying to reverse this trend for a number of years, although major oil companies are still hesitant to commit to long term investments, mainly due to the country's unfavourable tax system and strenuous local content requirements which demand that the lion's share of revenue and ownership go the government.

The government has long been cognisant of the necessity of systemic change in salvaging the country's ailing economy and debt situation, but has been tentative to lower tax rates for fear of further decreasing state revenues.

The shock of the pandemic finally incited action – in early January 2020, the Algerian government announced that it would be introducing a new hydrocarbons law which would decrease the tax rate. This was succeeded by the signing of an MoU between Sonatrach and several oil majors in February 2021, including Eni, Occidental Petroleum and Total who played a role in helping draft the law and have plans to develop the reserves in the Berkine basin. With foreign exchange reserves expected to last until August or September 2021 the government will be under significant pressure to chart a rapprochement with the global hydrocarbons industry.

Neighbouring Libya has made similar attempts to jumpstart its local oil and gas industry but still faces long term challenges borne by a protracted civil war and a long history of economic nationalism. Moving toward a potential end to hostilities in May 2021, the country's warring factions agreed to the creation of a coalition government and promised to hold elections. The country has set an ambitious oil production target of 1.5 million barrels per day (b/d) by the end of 2021, although budget approval and decisions around oil revenues have been slowed down by the still fractious nature of Libyan politics. Price collapses and armed conflict stalled Libyan production during 2020, in addition to the Covid-19 impacts, but by November the country was again producing over 1 million b/d. The country has proven to be a viable investment destination in North Africa despite all the challenges.

Rig 810 at El Merk oil field, Algeria.
The country is in a unique position to benefit from new developments with a recently liberalised oil and gas industry. Algeria already has several decades of oil and gas initiatives which have positioned it as one of the few countries in the region where interest in onshore developments has persisted through the Covid-19 downturn.
Image courtesy: aka4ajax/WikiCommons

Egypt is one of the most developed and dynamic local hydrocarbon markets in the North African region, with oil, gas and other related activities accounting for over 18% of its GDP. The Egyptian government has a vital stake in the region's oil and gas industry and maintains a presence throughout the value chain through five state-owned companies. The country has been a notable oil and gas producer for many decades, though exploration and production (E&P) activities only began to accelerate after President Abdel el-Sisi's announcement in 2016 that the country would position itself as a regional oil and gas hub. E&P activities are currently concentrated in three key regions of the country, namely the Western Desert, the Gulf of Suez and the Mediterranean Sea., and following the announcement of planned investments valued at over US$1 billion for exploration activities – more than 60 companies altogether are invested in the region, including BP, Chevron, ExxonMobil and Haliburton.

Other developments include the institution of a digital subsurface database to aid the exploration industry. Egypt is also a continental leader in downstream production and the government is planning to expand on this legacy through some US$38 billion in investment into the local petrochemical industry over the next four years.

Though presently a marginal economy, Mauritania has the potential to become a major player in the international oil and gas space following the discovery of large offshore gas concessions in the country in recent years. Mauritania and its neighbour Senegal have been producing gas in small amounts since the mid 2000's, but the confirmed 15 trillion cubic feet of gas discovered by BP and Kosmos Energy offshore in the Ahmeyim/Tortue field have granted these two countries a lucrative opportunity to claim a spot among the world's major oil and gas potential producers. The main challenge for Mauritania, however, is attracting the needed investment to develop the necessary infrastructure. Initial pilot projects following the discovery generated little tangible interest and 2020 caused some major oil and gas companies to defer their investment decisions. Local authorities nonetheless put together an oil and gas master plan in April 2021 to drive the exploration and development of its reserves. Mauritania could become a key supplier of liquefied natural gas (LNG) to nearby European nations, should the country secure the necessary investments.

BP's planned developments offshore in Senegal's Tortue gas field. The project combines an ultra-deepwater subsea system, which will be tied to the mid-water floating, production, storage and offloading (FPSO) facility to convert the produced gas into liquefied natural gas (LNG). BP estimates that this gas concession will have a 30-year life cycle.

Image courtesy: Flickr/ BP

3.2 Central Africa

The Central Africa region has not often been recognised as an important contributor to the African oil and gas industry, despite the potential of markets such as Gabon which has been an OPEC member since 1975 (undeterred by a lapse in membership over the 1990s-2000s) and has been a sizeable contributor to the continent's extractive industry at large over the years. The already minimal contributions from Central African oil and gas producers like Gabon, Cameroon and Equatorial Guinea, have further waned in recent years as a result of tightening oil prices, especially since the market crash of 2014. Security challenges have also posed a particular hinderance for Cameroon in terms of attracting new investment in both onshore and offshore exploration initiatives.

Notwithstanding the present challenges, oil and gas producing markets in the region have looked to revamp their policies and legislation to incentivise additional E&P investments. Gabon has been most progressive in this regard, though both Cameroon and Equatorial Guinea have made strides toward positioning the industry as a core pivot of national policy, alongside development initiatives in power generation, among others.

As the most mature oil market in the region, Gabon holds the most potential for further development and upgrade of infrastructure. Following a down period of lacklustre developments in the early 2010s, coupled with a poor regulatory environment and depressed oil prices in 2014, the industry required considerable modernisation to survive and prevent further widening of budgetary deficits. The new hydrocarbon code promulgated in 2019 sought to provide a more conducive environment for business activity with the state pulling back on its own interests to entice further participation – among the updates was an axing of corporate tax from 35% to 0%, a reduction in government stake in E&P activities to 10%, and a cap of 15% interest for the Gabon Oil Company in E&P contracts.

Due to Covid-19 restrictions in 2020 the initial proposed closing date for the 12th licensing round, which saw a total of 35 new onshore and offshore blocks up for grabs, was extended to mid-2020 and again to mid-2021 to allow investors more time to navigate the impacts of the pandemic on global oil demand.

Equatorial Guinea too has made motions to modernise its oil and gas industry following significant declines in production over the last few years – from over 240,000 b/d in 2016 to 110,000 b/d in 2019 – even after becoming a member of OPEC in 2017. Some strides have been made in terms of policy, particularly in the last 12 months as the Covid-19 pandemic impacted the industry. In May 2020, the Ministry of Mines and Hydrocarbons extended exploration licenses for an additional two years while simultaneously relaxing various capital requirements around E&P activities. The government has also made progress toward developing a new Gas Master Plan, a new modular refinery at Punta Europa and moving on onshore exploration on the mainland Rio Muni region, among other things. Back-to-back campaigns over 2019 and 2020 have been largely responsible for the reinvigoration of activities in the sector given the clear communication by the state about the intended contribution of the oil and gas industry going forward. These campaigns led to large FDB commitments – estimated at US$1.1 billion for the remainder of 2021 and 2022.

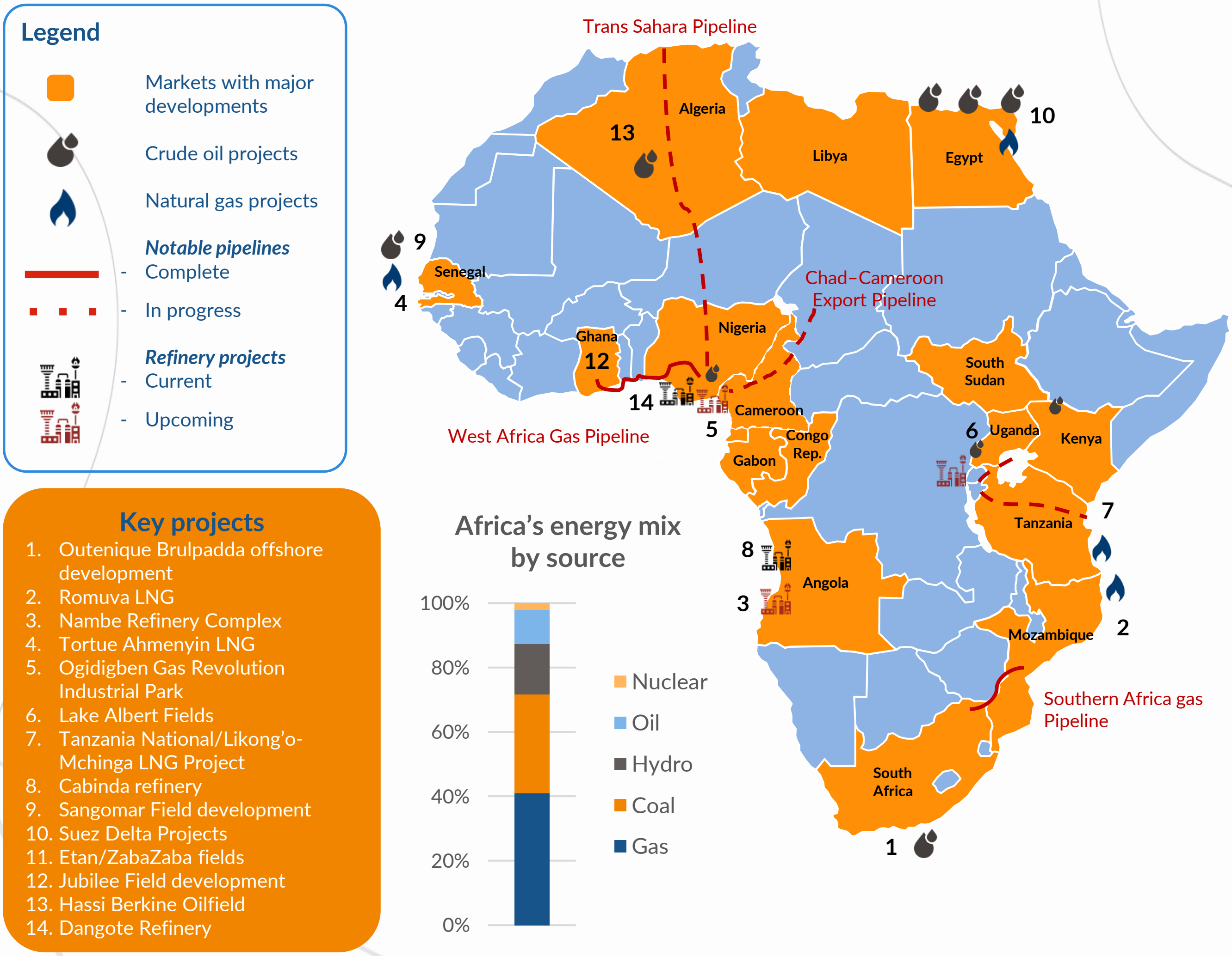
A view of the Okume offshore facility in Equatorial Guinea. The site is owned by Trident Energy ,which has been operating at Okume since its first initial drilling in 2001.The field reached its peak production in 2010 but exploration continues in the area.
Image courtesy: Flickr/espinozr

Similar to its southern neighbours, Cameroon has also experienced various oil production declines in recent years amid lower investment interests in exploration activities due to weak oil prices and various security issues in the northern region. The country's 2020-2024 development plan calls for a substantial increase in contribution from the oil and gas industry to economic development, though this continues to be hobbled by the instability in various northern and south-western parts of the country.

The Chad-Cameroon oil export pipeline has made gratifying contributions to the country's fiscal revenue, drawing in over US$40 million tariffs in 2019.

Singaporean-based Perenco Energy is the largest stakeholder and developer in the country's oil and gas resources and works in partnership with the national hydrocarbons company (Société Nationale des Hydrocarbures). The company is currently spearheading the development of Cameroon's natural gas market through the world's first floating liquefaction plant. Through its efforts to develop the gas industry, Perenco has positioned itself as a key turnkey service provider in the power generation space as well as in the processing of extracted gas required to power the 216MW Kribi gas plan.

Notable Oil and Gas developments in Africa



3.3 West Africa

Some notable realignments have become evident in the West African oil and gas industry, both in terms of focus on which resources to exploit as well as how this fits into broader state strategies for the years ahead. Nigeria as the lead producer in the region has struggled in recent years and has sought to gradually reduce its dependence on raw hydrocarbon exports through refinery upgrades, and the construction of an industrial complex and manufacturing plants to supply equipment required in the industry. Numerous new projects and licensing rounds still form part of future initiatives for the country, though there will be a renewed focus on developing gas to feed into the national electricity supply chain.

Neighbouring Ghana has already moved toward developing and incorporating its own gas reserves while similarly moving to open new licensing rounds for additional offshore field developments. Senegal has moved in parallel to the two incumbents and has placed broader development of the oil and gas industry high on the agenda following the significant offshore discoveries in 2019. The Senegalese government's agenda also has a strong focus on gas-to-power in conjunction with developing nascent reserves. The government is looking to capture the potential of oil and gas resources across the broader spectrum of the economy. All things considered there is strong potential for the region's oil and gas industry to develop further over the next five years.

Probably the hardest hit of all of Africa's hydrocarbon-dependent economies, Nigeria has had a considerably tougher time as a result of the decline in global oil prices since 2014, with persistent budget deficits over the last decade. These deficits became more pronounced since the price crash, with debt-to-GDP rising to over 60% in the first half of 2019. With the challenge at hand the government has made strides to diversify the economy while also strategically moving on new E&P licensing rounds, alongside midstream and downstream infrastructure development. The government has also placed additional emphasis on increasing the participation of gas in development plans for both the industry and the broader economy. Licensing rounds were planned for mid-2020 to assist the country with output increases necessary to plug some of the budget deficit. Planned tax hikes were set to move in parallel, while marginal field licenses were also made available in mid-2020 for the first time since 2002.

Leading up to 2025 Nigeria is set to account for the lion's share of new projects in Africa, at nearly a quarter of all planned new oil and gas developments – in total the country will see some 100 new oil and gas projects take hape by 2025. Among these new projects is the US$20 billion Ogidigben Gas Revolution Industrial Park which will see the development of a refinery and a petrochemical complex; the rehabilitation of the Port Harcourt refinery at a cost of US$1.5 billion; and the completion of the Emeyal 1 Oil and Gas Park in Bayelsa State which is set to reduce the importation of finished equipment for the oil and gas industry.

The Nigerian National Petroleum Corporation (NNPC) signs a US$1.5 billion contract with Italy's Technimont in March 2021 for the rehabilitation of the PH Refinery. The revitalisation of the domestic refining industry is a key objective in the government's new oil and gas policy.
Image courtesy: Flickr/Simon Ugwu

Further west, though not a historically active market in the oil and gas space, Ghana has made substantial progress in actively tapping into its nascent oil and gas reserves. In recent years, the country has looked to open additional blocks for development beyond its maturing Jubilee field, with ExxonMobil being the first major to secure a license for exploration in late 2018. Tullow Oil, another major operator in the country, has embarked on a four-year programme to expand the production capacity of gas deposits at the Jubilee field, while also looking to minimise gas flaring at the TEN gas field by 2025.

The Sankofa Gas project is another notable development in the country's recent past and has significantly contributed to its gas extraction capacity and gas-to-power generation plans. Accrued benefits since the launch of this project in 2019 have resulted in an energy saving of around 12 million barrels of oil. The country is set to increase the use of gas-generated power following the arrival of a regasification unit at the Tema LNG terminal in early 2021. The initiative will not only see more gas added to the regional grid but will also minimise the dependence on the West African Gas Pipeline which has historically been unstable in terms of supply.

Though small in comparison to other producers in the region, Senegal stands as a key development market for oil and gas following the recent discoveries offshore and across the nautical border with Mauritania. Senegal aims to capitalise on the sizeable reserves in the Grand Tortue Ahmeyim gas field and has jumped on board the US$4.8 billion project spearheaded by BP and Kosmos Energy which will see about 2.5 million tons of liquefied natural gas produced annually, with first gas set for delivery in 2023. At present, Australia's Woodside Energy and FAR Limited are already invested in the other major offshore reserve – the Sangomar Field Development – with first oil also expected in 2023. This reserve is set to be a regional game-changer with its 460+ million barrels of exploitable resources.

The new discoveries and initiatives are favourable developments for the Senegalese economy given the trudges in production experienced in 2020, and will bode well for economic growth in the years to come. Senegal is also hosting the first MSGBC Oil, Gas & Power Summit in October 2021, which will further support the plans for the sector by potentially attracting additional investor interest both in the country and to the region more broadly.

Senegalese President Macky Sall receives a delegation from CRGN Energy in mid-2020 to discuss the progress of the SNE field in Sangomar. Once complete, the project will produce 200,000 barrels of oil a day.
Image courtesy: Flickr/Présidence Sénégal

3.4 East Africa

Often overlooked in terms of oil and gas developments, East African markets currently present some of the most attractive opportunities on the continent. Substantial offshore oil and gas fields exist at various points along the coast, stretching from northern Mozambique's Romuva Basin, through the Tanzanian Lindi gas fields, and up to Kenya's Lamu basin and the coast of Somalia. Ongoing onshore explorations since the 2000s have also revealed major crude oil reserves around key locations like the Lake Albert Graben in Uganda and the Turkana fields in northern Kenya. The challenges experienced during 2020 dealt a significant blow to the local oil and gas industry, with force majeures and investment deferrals being common in the region, particularly in Kenya and Tanzania.

Fortunately, 2021 has seen the local industry in thaw as foreign majors, including Eni, Total and Tullow Oil, reignite the battle for market share. French oil and gas major Total has also strategically positioned itself as the dominant stakeholder in the development of the region's upstream and midstream resources for the long term, with local governments also taking a long-term stance as they aim to advance their local markets up the value chain and enhance their refining and power generation capacity.

South Sudan is in the unique position of being the most mature market in the region, and yet the most underdeveloped. The start of 2021 saw local production resume in the country and now stands at 174,000 b/d, a figure which the government hopes to eventually push up to 300,000 b/d. 10 years after independence from neighbouring Sudan, the country has only explored about 30% of its total acreage. There is however potential for further development in the sector, with over 14 blocks currently up for bidding. Juba plans on advancing up the petroleum value chain through the construction of new installations, including an oil refinery, a thermal power plant, and fuel storage facilities. The government has also signaled its intent to take full control of its own oil production by 2027 and has begun laying the groundwork for this transition with the construction of a local data storage and training facility. With the market still reeling from years of civil war, the number of E&P operators is currently limited, due to high levels of risk involved in investing in the country.

The two main operators involved in developing nascent resources are the national oil company – Nile Petroleum, and Chinese-based Sinopec. Petrodar, Greater Pioneer and Sudd Petroleum are some of the junior operators in the market who mostly operate through joint ventures. More firms will likely enter the market in the future with the upcoming oil licensing round – a first of its kind – announced in late June 2021.

Across the southern border, Uganda offers a sizeable market for E&P activities as it seeks to become a major oil producer through its 2.2-billion-barrel reserve potential. However, the distance between the oil-rich Lake Albert Graben and nearby ports (for export), as well as the viscous quality of the crude oil itself, point to extensive investment requirements for the construction of a heated pipeline to make the sector's potential viable. Following a prolonged period of negotiations between the Ugandan government, Total, and various other stakeholders, the construction of the EACOP from Hoima and Bulisa in Uganda to the Tanzanian Port of Tanga was finally signed into force in mid-April 2021. This agreement owed much to the influence of Total, which has positioned itself as the dominant oil major in control of E&P and even midstream activities in the region. Along the way to signing the accords, Total bought out Tullow Oil's Ugandan assets in April 2020, granting it a de facto operating monopoly over the Lake Albert development project. Total followed this up by signing an operating agreement with the Ugandan government in September of the same year, whilst also brokering the final EACOP agreement between Uganda and Tanzania – Total has stated that it hopes to see production begin by 2022.

Aside from Total, a few other notable operators are involved in the local oil and gas industry, including China's CNOOC, Nigeria's Oranto Petroleum, and Siemens who is providing engineering expertise across various projects. Another key initiative tied to the EACOP pipeline is the construction of an oil refinery at the lake city of Hoima which is set to begin soon.

Neighbouring Tanzania has also begun its own ascent as an important player in the local oil and gas space. Besides the lucky windfall of outcompeting Kenya as final preferred route for the EACOP, the country has begun to develop its own potential as an LNG producer with interim President Samia Hassan announcing that the country would prioritise the development of its Lindi fields in the lead-up to 2028. This is in marked contrast to the sentiment over the last few years under the previous administration of late President John Magafuli, which oftentimes gravitated towards resource nationalism and resulted in tax hikes, a hostile rhetoric toward foreign companies and stiff local content requirements for operation. In May 2021, interim president Hassan announced the planned construction of a US$1.1 billion 600 km pipeline between Dar es Salaam and Kenya's coastal city of Mombasa which will supply Kenyan households and industry with Tanzanian gas. A consortium of major LNG companies have sought to invest in the Lindi field developments, including Royal Dutch Shell and Norway's Equinor, though the latter has warned of an exit if it doesn't see committed regulatory reform. Addressing various policy issues will be a key necessary ingredient to maintaining investor interest ahead of planned bidding rounds in 2022.

Similar to its counterpart to the west, Kenya confirmed its first significant oil discovery in 2012 when Tullow Oil discovered at least 2 billion barrels of oil in the South Lokichar Basin in the Turkana region close to the border with Uganda. In preparation for E&P the local legislature passed its modernised Petroleum Bill in 2017, though concerns still rage that Kenya's oil and gas policy will follow in the footsteps of the mining industry's framework by emphasising community beneficiation and consent above their feasible limits. Kenya has already lost its chance to host the EACOP partly for this reason. Nevertheless, there are signs that foreign multinationals are still interested in developing the country's oil and gas resources. Tullow Oil, which declared force majeure over its holdings in the Turkana fields during early 2020, later announced in August that same year that it would be returning and was granted until the end of June 2021 to provide an investment plan. Meanwhile Total procured a deal in 2018 that would see a local replica of the EACOP pipeline come to fruition between the Turkana fields and the Lamu port for export to Asian markets.

A seismic survey conducted in April 2014 at Block 11A in Kenya near the border with South Sudan and Uganda. The presence of oil and gas reserves inland across multiple East African countries has led to a boom in local pipeline projects in recent years.

Image courtesy: ENH

3.5 Southern Africa

The southern African region has made considerable forward motions in developing oil and gas reserves, particularly offshore. The big talking point in the region's oil and gas space in recent years has undoubtedly been Mozambique following the substantial offshore gas discoveries in the northern Rovuma Basin along the border with Tanzania in late 2011. These discoveries prompted international majors to move in relatively quickly through various consortiums and partnerships to support extraction. Much investment has already flowed into several key projects, although hobbled by a growing security threat in areas close to operations.

Its southern neighbour South Africa has faced onshore challenges of a different kind which have stunted the development of its own potential onshore gas reserves amid civil society concerns. The country has however had more luck offshore with substantial discoveries made in 2019 and 2020 which it is now looking to develop. On the other side of the coast Angola has made considerable progress following the change in presidential administrations, and has targeted more marginal offshore fields for E&P while in parallel looking to boost available downstream infrastructure and capacity through the construction of a new refinery and storage terminal.

In Mozambique, a number of major oil and gas companies have shown interest in developing deposits, including Chevron, ExxonMobil and Total, alongside a few eastern operators such as Japan's Mitsui, Malaysia's Petronas and China's CNPC. Three major projects are driving development, namely the Mozambique LNG Project spearheaded by Total to the value of US$20 billion; the Coral FLNG Project being developed by Eni and ExxonMobil to the tune of US$4.7 billion; and the Rovuma LNG Project which is another joint initiative by ExxonMobil, Eni and CNPC totalling US$30 billion. A number of developments took place in 2020, such as the mid-July announcement by Total that it had secured close to US$16 billion in funding for the Mozambique LNG project, with numerous US companies set to supply equipment, pipeline material and cooling systems, among other things, valued at some US$1.8 billion.

Part and parcel of this development is the construction of an LNG terminal which will also be driven by Total in partnership with Mozambique-based Matola Gas Company at a cost of US$300 million, while Japan will contribute US$14 billion toward additional E&P activity to bolster available capacity. One issue preventing further development is the security concern in the north. Despite signing a security pact with the government in August 2020, Total continues to face challenges in sustaining its operations in the country – the situation has deteriorated further in 2021 with the French major pulling out some staff in January and repeating the move with a blanket cover for all staff in late April.

Offshore developments in South Africa have been equally positive with Total striking a sizeable offshore gas deposit in the Southern Outeniqua Basin amounting to around 1 billion barrels of oil equivalent. The company made another significant discovery in the Luiperd prospect in late 2020, bringing the potential total of commercially exploitable reserves to 1.5 billion barrels of oil equivalent. The two discoveries have been touted as potential game-changers for the country's energy priorities and for weaning off imported gas from Mozambique. Onshore, the country has struggled to move forward the development of shale gas reserves over the last decade due to pushback from civil society groups concerned about the environmental impact of such operations using fracking techniques in a water-scarce region. Discussions have been muted since the initial discovery, with additional debate ensuing on the pros and cons of moving forward with developing the potentially gas-rich Karoo region amidst societal concerns and the lack of apparent readiness to actually benefit from the resource.

Though the potential is there, too much is uncertain and more in-depth geological studies are necessary to prove the commercially extractible quantities of gas, alongside setting up the necessary infrastructure, policy, and monitoring mechanisms for extraction. The only licensed onshore operator in the E&P space is Renergen who operates the Virginia Gas Project in the central Free State province - the company is planning to start supplying the market with LNG over the course of 2021.

Angola is the most mature market in the region, but has undergone its own share of shifts following the change in administration from long-time ruler Eduardo dos Santos in 2017. Since then, incoming president João Lourenço has made considerable strides to revamp and modernise the oil and gas industry in order to attract additional investments. New E&P licensing rounds were made available by the National Agency of Petroleum, Gas and Biofuels in late 2019, with another round announced in late April 2021.

Given the oil price volatility in recent years, Angola has also made forward motions on developing midstream and downstream infrastructure. Among the key projects is the December 2020 presidential authorisation for the construction of the Barra do Dande at close to US$643 million, which will double storage capacity at the terminal.

The development comes alongside the awarded construction of the Cabinda refinery to Brazilian conglomerate Odebrecht to the tune of US$920 million.

Italy's Eni is another major stakeholder in the country's oil and gas industry and has also made bold moves to promote its positioning in the market for the years ahead. The company committed some US$7 billion in early April 2021 toward various activities including E&P, refining, and solar energy for the next four years. The decision comes off the back of the government's announced target of close to US$68 billion in investment to develop marginal fields across the country's various oil concessions over the next five years.

Exploratory oil drilling at the F-0 field in South Africa.
Investor commitment awaits final clarity on South Africa's oil and gas policy, with the Gas Utilization Master Plan already promising developments. The plan would see all 4 of South Africa's new Special Economic Zone (SEZ) port complexes receive upgrades to their gas transport facilities, thus unlocking gas use for the domestic market.
Image courtesy: Pinterest/ Oilpro.com

4. Challenges & Opportunities

4.1 Policy and Regulation

The notable changes in African oil and gas policies are driven by three key motivations; First is the pronounced liberalisation of laws to incentivise investments from foreign firms – this trend is relatively new in nascent markets like Somalia but also in more established markets like Angola and Gabon. The second key driver is somewhat of a counterbalancing force to the first and falls under the position of populist policies which normally take root in more-developed oil and gas markets to pressure already engaged companies to adhere to high tax rates and stringent local content requirements. Amidst the tug of war between liberal and nationalist policies is a third driver which manifests in the form of a push by African legislatures to bring extractive policies in line with global best practices. These policies emphasise the protection of the environment and human settlements, and the consent and beneficiation of local communities. This is a commonality across most, if not all, markets regardless of their political orientation, with Kenya's Petroleum Act of 2019 and the more recent Nigerian Petroleum Bill being two examples of this trend.

Liberalised oil and gas markets are becoming more common in Africa in line with the general trends across all industries. Unlike the telecoms space for example "liberalised" should not necessarily be taken to mean "still underdeveloped". In some cases countries with extensive portfolios of pre-existing infrastructure have come to the table after many years of falling revenues and poor governance by state owned companies. Algeria serves as a key example of this with state-owned Sonatrach having relinquished near total control of local oil production in early 2021. In Angola, the demise of the Dos Santos regime has allowed the new government to similarly reorganise the local oil industry and move it along a path of privatisation. Cameroon has led the charge with oil and gas liberalisation in West Africa with its April 2019 revamped oil legislation – the new code provides favourable operating terms to foreign companies, and grants tax holidays for oil E&P in the upstream industry.

This has been balanced by a larger emphasis on local content requirements, including the use of indigenous labour and services for future projects. Gabon has struck a similar balance by lowering tax rates in exchange for a higher government stake in operations. Evidently, markets that are almost entirely nascent have proven to be the most amenable to foreign companies, with Somalia serving as the best example of a market looking to make headway in E&P.

On the other side of the spectrum lie countries which have taken a more antagonistic approach to locally invested multinationals. A growing trend of resource nationalism has begun to take root especially in economies that have been hard-hit by the slump in oil prices over the last few years and the drop in consumer demand resulting from Covid-19 movement restrictions. This trend is best epitomised in the East African region where governments have squared off with local majors - Kenya for example found itself trailing behind its regional counterparts after being denied the opportunity to host EACOP over concerns that its community consent and beneficiation scheme would pose too many obstacles to construction.

Until very recently, Tanzania was anathema in the investment community due to ex-President Magufuli's campaign of so-called "economic warfare" against extractive industries. A positive shift is however imminent in the coming year(s) under a new administration. South Sudan too has stated that it seeks full control over the local upstream industry by 2026, despite its limited leverage. Further south in South Africa, the potential to develop and position the market as a potential oil and gas major in the region is also being curtailed by a pronounced anti-business climate. It is likely that negotiations to commercialise the Brulpadda concession will stall, unless clarity is reached on the future of local oil and gas policy, local content requirements and beneficiation, and even the future of private land ownership.

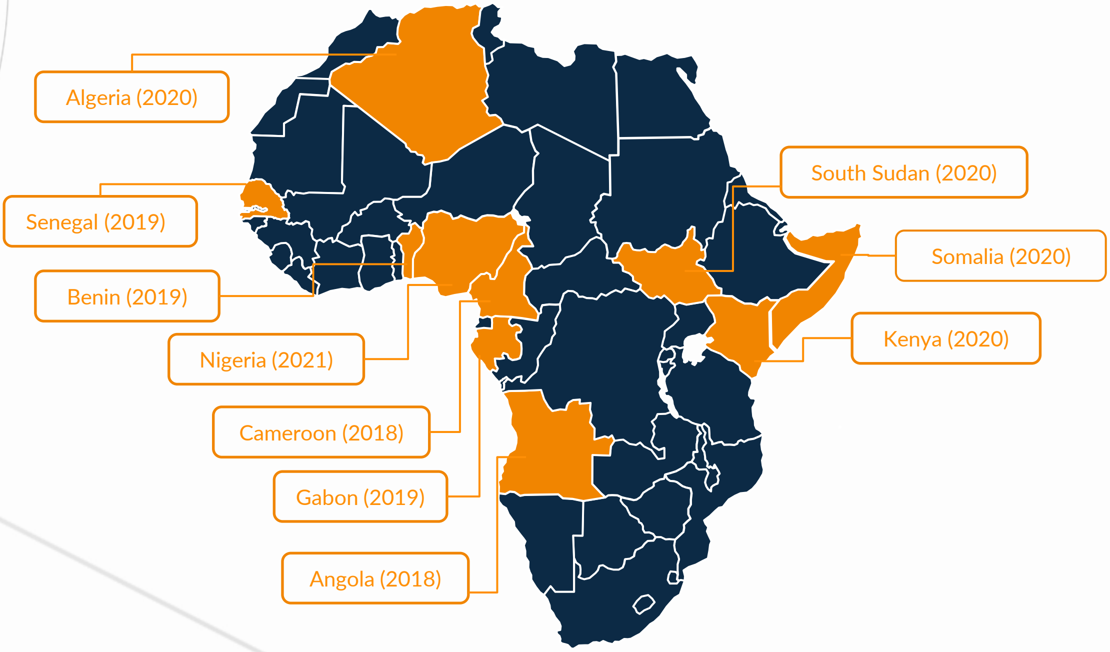
With Covid-19 weighing heavily on the world economy and African nations struggling with slow growth and high youth unemployment, it is probable that such nationalist policies will remain popular going forward.

Despite the dichotomous stance on policies, one common trend across markets regardless of their business friendliness is their emphasis on introducing modern ESG principles to the oil and gas space. Kenya has historically been considered a challenging environment for extractive industries, with political interference a common occurrence. The country's petroleum code has also taken the lead in the sector, with its emphasis on community participation, consent and beneficiation often dubbed excessive among industry stakeholders.

Nigeria by contrast is generally considered quite pro-market despite its well publicised issues with corruption and general lack of transparency. After many years of stalled progress, the Nigieran senate finally passed the long-awaited Petroleum Industry Bill in July 2021, which demonstrates a renewed focus on environmental and social governance and places them on an equal footing with pro-market governance and tax rationalisation policies. Similar clauses can be found in the policies of Algeria, Gabon, Kenya and Uganda.

An illustration of the devastation caused by repeated oil spills in the Delta State of Nigeria.
Such environmental damages and the negative impact of operations on local communities have been key drivers behind stricter ESG legislation in Africa's modern oil and gas codes, and one of the key drivers for reform in Nigeria's own policy environment.
Image courtesy: Wiki Commons

Recent oil and gas policy updates in selected African markets



4.2 Energy transition

Capitalising on the persistently low oil price, the energy transition has gained traction over the last few years. Even amidst scepticism that there will be an oil rebound in the post Covid-19 period, the overarching shift toward cleaner fuels has and will continue to change the African oil and gas industry. A core strategy adopted by a number of governments in positioning for this shift has been to increasingly leverage unexplored and under-explored natural gas reservoirs to support upcoming energy initiatives in power generation (more on this in the section to follow) and transportation. As demand for this resource grows given its more limited carbon footprint in comparison to oil and coal, developed and emerging African hydrocarbon suppliers such as Nigeria, South Africa and Tanzania, could capitalise on this development in both their local extractives and power generation industries to improve energy security for the future. Key to their success will be the establishment of stable gas supplies, developed supply chains and favourable fiscal terms for further engagement.

Nigeria is one market that has made motions toward gas consumption as a preferred fuel source. The West African state began to implement its National Gas Expansion Programme in December 2020 and started to distribute compressed natural gas (CNG) and LNG at various fuel stations owned by the Nigerian National Petroleum Corporation. The country has made a concerted effort to build a culture of gas usage for transportation and in the execution of projects – this trend is set to increase demand for gas to 7.4 billion cubic feet per day by 2027. Enyo Retail and Supply is an independent player in the market who has put forward plans to invest in 20 new LNG plants and to establish its first LPG filling station later this year.

Going forward it will be important for Nigeria to continue growing the necessary supporting infrastructure to increase uptake, while simultaneously ensuring that there is both sufficient supply to key manufacturers and converters. The country should also consider incentivising additional investment through favourable fiscal terms. Some positive moves have already been made in in this regard in recent months with the commissioning of the country's first electric vehicle (EV) charging station.

South Africa has also moved on positioning for the uptake of CNG over the last few years, beginning in 2018 when Delta Natural Gas established the first of 400 filling stations in the country's economic hub of Johannesburg. Babcock – the distributors for DAF trucks – Introduced CNG dual-fuel trucks to the South African market in 2020 and has also moved on exports to other Southern African countries. The company, along with Black Knight Logistics, introduced its first CNG filling station back in 2019 in preparation for commencing the move of its fleet to CNG. The Virginia Gas project operated by Renergen is set to act as a feeder system for this and other CNG filling stations when completed later in 2021, but will replace CNG with LNG given its denser quality and ability to sustain long-haul trucks over greater distances.

South Africa already has various supply agreements with Mozambique and can build on this through developing its own domestic production capacity in ensuring greater price parity and competitiveness of CNG against petrol and diesel variants. The country's first couple of EV busses also hit the Cape Town roads in late July 2021.

Tanzania too has made motions to start introducing CNG as a viable alternative to petrol and called for interested bidders to approach the government in building CNG filling stations in 2019. Swedish bus and truck manufacturer Scania also recently announced its plans to introduce CNG buses to the market in order to leverage the country's vast gas resources and move toward cleaner transportation.

Key oil and gas majors operating in the E&P space are aligning with the drive toward gas, with Orca Energy's subsidiary Pan African Energy putting in place distribution mechanisms over the last few years in Dar es Salaam to supply the industry while preparing for the growth in uptake among the public transport industry. Much of the potential success of the strategy will rest on the government's ability to incentivise additional near-shore and offshore E&P activity to ensure consistent supply for domestic consumption.

A Scania biomethane-powered bus in Sunderland, United Kingdom.
The rollout of gas filling stations in African markets like Nigeria, South Africa and Tanzania could soon render such busses a common staple across the continent's transportation system.
Image courtesy: Flickr/Denizci Online

4.3 Infrastructure & Utilities

Though progress has been made in terms of economic diversification there is still room for improvement. In the oil and gas industry this is reflected by the growing move away from purely upstream activities to economies which look to incorporate more midstream and downstream operations. Crude oil and natural gas pipelines have proliferated across the continent in recent years, and refinery operations are similarity becoming more and more common outside of the traditional oil and gas majors. These developments have largely been aided by local content requirements which have aimed to enhancing the technical expertise of the domestic economy. Meanwhile in the downstream space the continent has shown a strong pivot towards exploiting the full potential of gas, not only as a good for export but as a source of energy generation and utility for domestic and industry use. This move is becoming more evident in a number of prominent economies, including Kenya, Nigeria and Tanzania. South Africa is also making concerted effort to add more gas to the power generation programme in moving away from coal.

Upstream development has been the focal point of discussion for many years, with Africa's vast size making the construction of pipelines a key necessity for the transportation, refining and export of oil and gas products. Several major projects have been earmarked in this regard to strengthen delivery capacity to coastal locations and across borders. Prominent examples include the latest development surrounding the Uganda-Tanzania EACOP initiative and the Tanga-Dar es Salaam-Mombasa LNG pipeline. The South Africa-Mozambique gas pipeline – dubbed the "African Renaissance Pipeline Project', and the planned Trans-Sahara pipeline which will stretch from Nigeria to Algeria and across the Mediterranean to the EU, are two additional examples of major midstream developments that will enhance the continent's ability to deliver more oil and gas to major consumer markets both in Africa and outside.

In-country midstream networks are also expanding to match. Nigeria for example is currently building the Trans-Nigerian Gas Pipeline which will stretch the entire length of the country from North to South. It is particularly notable that the majority of these new projects almost exclusively focus on the transport of gas in laying the foundation for a smoother transition toward the utility of this resource over oil.

Buoyed by the expansion in midstream activities and transport networks, Africa's refining capacity is also on the rise, with governments directing efforts to move up the value chain in generating additional revenue from hydrocarbon resource exploitation. One of the core objectives of the Ugandan government during the EACOP negotiation process was to also tie in E&P activities to both midstream and downstream developments through the construction of the Hoima refinery, which is also closely associated with natural gas liquefaction facilities presently under construction along the East African coast - Tanzania is moving in parallel to Uganda and looking to enhance the value add within its own gas reserve pool.

Refineries are not a new concept for many of the key producers such as Angola and Nigeria, but never have refinery developments been so widely dispersed across various African geographies in the past. For one, the Dangote refinery under construction in southern Nigeria is set to be the largest in the world once completed, while the US$20 billion Ogidigben Gas Revolution Industrial Park (GRIP) will see the country move up the value chain through innovation and research. Angola too is making strides in this regard with the Namibe refinery complex in the southern region of the country. The Angolan government is also looking for interested investors to complete the Lobito refinery. The emergence of such large-scale refinery projects are closely tied to a sentiment among African leaders that the continent should be more self-sufficient in terms of fuel production, which the Covid-19 has served to underline further as demand for unprocessed crude oil and gas dwindled. Fuel security has also been cited as a key motivation behind the planned refinery development project in Ethiopia.

The most important shift in the local infrastructure landscape has been the reorientation away from hydrocarbons as a mere export commodity towards being viewed as a utility for domestic industrialisation. This is especially true for gas which can be utilised as a sustainable complement to domestic power grids. Structural factors in the global economy, particularly the US shale revolution, have ensured that gas is no longer the rare commodity that it once was, allowing even countries with minimal reserves to set up gas utilities provided they have the infrastructure to receive imports, e.g. via offshore floating storage and regasification units (FSRUs) or onshore LNG terminals and related infrastructure. More developed states like South Africa and countries in North Africa have laid down hydrocarbon-powered electrical grids before, but only in recent years have plans for gas power generation and home utility networks become more ubiquitous – at least 14 African countries are currently planning gas-fired power and utilities networks.

Two regions of note in this regard are West Africa, specifically Nigeria and Niger, and the East African coast. In Niger gas transmission systems will be developed off the back of the trans-Saharan gas pipeline, which is expected to supply power plants in the south of the country and mining operations in the north. In Nigeria numerous gas power plants are in the works including the planned 1500MW Okija power station and the 1350MW gas plant in Abuja, though lack of financing has caused projects to stall.

On the East coast, Tanzanian authorities have flagged gas, and LNG in particular, as a key priority with construction of a US$23 billion near-shore LNG processing and export terminal to begin by 2023. Though gas-to-power plants are the most common, oil-to-power plants will remain a key part of many local economies, including Egypt, which is expected to rely on such facilities until at least 2028.

SASOL workers operating on a gas pipeline in Temane, Mozambique.
The pipeline is still responsible for transporting the majority of gas that SASOL utilises in its South African operations. Once current inland reserves are depleted the pipeline could still serve as the main thoroughfare for gas from the planned Maputo terminal to the South African market.
Image courtesy: WikiCommons

4.4 Financing

The economic logic underpinning the oil and gas industry has changed considerably over the last decade and has in turn changed the strategy for project financing. A stricter legal regime following the global financial crisis of 2008 and the oil price slump since 2014 have resulted in a tougher investment environment in Africa with only the most risk-tolerant oil and gas majors providing initial greenfield financing along with technical expertise, with the remainder of investments coming from banking consortiums and governments. Foreign venture capital firms tend to prevail, though local players have become increasingly active in recent years, including South-African based Standard Bank, which has actively invested in East African projects, such as the Rovuma gas fields and EACOP.

In the wake of the Covid-19 pandemic, project financing now faces two key risks; persistently-depressed oil prices, which have thinned margins and caused investors to avoid nascent developments especially onshore, and the renewed push for fossil fuel divestment in favour of green energy which risks making it impossible for private consortiums to justify project financing in the long-term. The future solution for project financing will likely be a strong pivot towards the exploitation of gas as an intermediary source during the transition period. LNG is widely considered to be a more sustainable solution for industry in this change-over and Africa with its abundant gas reserves is well poised to to be a key supplier to the global market, Asia in particular.

Broadly-speaking, the continent has historically been considered a risky investment destination given various security challenges in producer countries alongside tough political environments to do business in. Project financing is under pressure as the pace of renewables technology development continues to shift attitudes towards a divestment from hydrocarbon projects. Social attitudes and more stringent banking regulations since 2008 have resulted in financial institutions taking a strict stance when it comes to investing in African oil and gas projects.

There are also deeper, structural problems that can dissuade companies from investing, including the financing costs for local infrastructure development which are higher than elsewhere in the world. Oil and gas projects are illiquid and very vulnerable to an often mercurial regulation and policy environment. For this reason, project financing is often a product of government-led investment, along with support provided by global, regional and state-owned financial organisations such as China Exim Bank, the AfDB and the World Bank. Private investment, which does occur in some cases, comes at the hands of less risk-averse players such as international and local private equity funds, or oil and gas majors involved in joint ventures. Such partnerships are usually able to bypass local debt by utilising funds generated from purchases of their stock on international exchanges. This, along with their technical competency, renders them indispensable partners for the continent’s long-term oil and gas development.

The additional challenges surrounding Covid-19 have also had a profound effect on the local oil and gas financing space with the industry overall only just beginning to recover. A number of major firms were forced to declare force majeure or abandon projects entirely; Tullow Oil declared force majeure on its Kenyan operations and is yet to provide the local government with an investment plan, while Chevron, Eni and Shell are selling off their fields in Nigeria, including a 45% stake in the OM17 field valued at US$1.1 billion. Though offshore E&P developments are already underway, with Woodside Energy (the main operator of the Rufisque Offshore, Sangomar Offshore and Sangomar Deep Offshore joint venture) noting in July 2021 that drilling would commence shortly, the Greater Tortue Ahmeyim and Sangomar fields are both only scheduled to deliver first production in 2023.

The recent challenges have shaken the oil and gas landscape, with more financially stable firms buying up assets in an attempt to secure presence and even set up regional monopolies - Total is on track to establish undisputed hegemony over the east African landscape in this way. Local governments have much less leverage in this regard as national oil companies are tied to the financial health of their government, like Sonatrach in Algeria or Sonangol in Angola. Markets that are likely to continue to perform well in the medium term will be those with offshore oil and gas deposits and secure coastlines as these are the most cost effective to invest in under the present circumstances - Tullow Oil's strategy points to this trend with 90% of its investment slated for offshore developments in the coming years.

The ongoing trend of divestment from hydrocarbon projects does cast some uncertainty around the future of the African oil and gas industry. Though the drawbacks of financing from key developmental agencies are an obvious risk, a global shift towards renewables is likely a bigger systemic concern for the industry throughout the continent.

Another key risk to be considered before any reserve is tapped is the reservoir risk, or the likelihood that enough product can be exploited to pay back the original investment within its lifespan. With both the European Union and China set to ban the sale of new petrol and diesel vehicles by 2035, and some already claiming that 2019 was the last great peak in oil demand, there is a real risk that many current projects in the pipeline might not become viable within the next decade. A more optimistic view will simply mean that oil declines in favour of natural gas, which can still be used to power industry, transportation, and residential homes both across Africa and abroad. Countries on the continent, including Egypt, Nigeria, Senegal and Tanzania are investing in LNG infrastructure, and oil and gas majors are directing attention toward this avenue. Although LNG competes favourably with renewables, it is still firmly rooted in the hydrocarbons space. According to the World Bank, the continent will require an ongoing US$43 billion annually to fund energy infrastructure projects. Financing natural gas projects to reach this goal remains both a pragmatic and profitable option for investors to consider.

Financing and the Future: Investing in African Oil and Gas

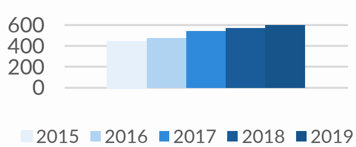
Africa's Finance Conundrum

- **Africa's infrastructure investments surrounding oil and gas are considered risky**
- **Unable to fund its own infrastructure, the continent relies on private and institutional investors**
- **Expanding on investment drives to support gas infrastructure development provides a way of balancing some of the pitfalls**

US$48 Billion

The amount the World Bank estimates that Africa will require annually to fund its energy projects

Growth in African external debt (US$ billions)



Financing strategies for the future

International Organisations → World Bank, AfDB and others can secure investors through targeted drives, particularly those that have a greener basis for emissions

Private investors → Companies who have a higher risk appetite can assist to hedge against over-exposure and provide support

Divestment from hydrocarbon industry

2019

The AfDB divests from future coal projects, setting a precedent for crude oil

2021

- The IEA has reported that no additional hydrocarbon projects can be allowed if the world is to keep to CO2 targets.
- A Dutch court ordered Shell to reduce its emissions by 45% by 2035, while BP plans to halt new oil and gas projects

Divested oil and gas assets

2014 – US$ 52 billion
2020 – US$ 14 trillion

US$40 billion

The amount of assets EU oil and gas firms have dumped in recent months

How have African countries responded?

In some African states local stakeholders have threatened to boycott firms that fully divest from the industry given the high dependence in some countries. However, this is premature as other options for sustainable development remain open.

Same game, new players

- Kosmos Energy has expanded its presence in Mauritania and Senegal
- Africa Oil Corporation is a key stakeholder in developments in Kenya
- State oil firms such as Angola's Sonangol and Algeria's Sonatrach have sought backing from new private investors to strengthen their positions

5. Recommendations

If the prevailing consensus holds firm the global oil and gas industry only has a few decades to enmesh itself into the new renewables-based economy by 2050 – this leaves only 1.5 times the lifespan of some of Africa's most recent production contracts. In the long-term crude oil is expected to transition from the key axis of the world's energy supply to a much smaller part of a broader hybrid and renewables-led ecosystem. The timing of this transition will be of the essence as it will not be immediate, nor evenly distributed across the world, thereby opening an avenue for crude oil and refined petroleum in niche developing markets such as those in Africa. When looking at gas, the reverse logic will apply as it would be unwise to immediately abandon crude oil projects in favour of gas when the sub-saharan African market in particular is still in the infancy stages of development and uptake. Leaving such investments for too late however will also face challenges as companies who have made the first mover advantage, including Total, will be in a strong position to corner the E&P place.

Governments and investors have divergent interests at heart when looking at the 'on the ground' impacts of the energy transition in Africa. While the former seeks to extract as much tax as possible for the benefit of the broader economy, the latter seeks to minimise costs and increase revenue generation in a tight price environment. This means that successful projects must represent a compromise between the two stakeholder groups where each feels that their requirements have been at least satisfactorily met. In the current operating environment managing populist policy vs capitalise sentiment is no small feat, though the aforementioned examples of pro-business legislation and ongoing projects across the continent suggest that this kind of compromise is possible. Nevertheless, there are a number of key motions which both government and the private industry should take into account going forward.

5.1 For government

Ensure a good balance between local beneficiation and ease of doing business

Conceptualising the tug of war between companies and governments as a zero-sum game of exploitation is a negative way to view the relationship. Examples from around the world show that oil and gas developments can and have had beneficial long-term impacts on local societies, provided that a strong foundation for policy and regulation is in place. Making it easy for companies to invest should not necessarily mean having to compromise on the interests of local communities and natural ecosystems. Instead, governments can mitigate against the disincentives of environmental protection clauses and community beneficiation by for example rationalising the tax scheme and removing opacity from the bidding and procurement process. Nigeria's most recent oil and gas bill offers a clear demonstration of how this can be achieved, and Algeria's new agreements with oil and gas majors demonstrate that pro-market reforms can have immediate tangible benefits.

Encourage investment by tackling risky externalities

Another way by which governments can attract investment is by addressing the long-held concerns that create the perception of the continent as an inherently risky destination for capital. Africa has achieved average growth rates well in excess of many advanced economies over the last two decades, but the continent's historical reputation for instability and corruption still stymies additional investment inflows. Shifting such an attitude is a long-term endeavour and involves political considerations unique to each country. These considerations can however be broadly summarised under three core points, namely 1) the creation of a transparent business environment, 2) ensuring the rule of law and the safeguarding of foreign firms' private property rights, and 3) the fostering of democratic rule with smooth transitions of power and continuity in the legal rights afforded to investors. Making such motions will provide a conducive ground for foreign investors to better work with government in both drawing value from projects as well as aligning with local development imperatives.

Carefully balance gas demand with supply

As demand for gas rises in parallel to waning oil demand, its associated infrastructure for E&P will provide room for large scale capital projects, but it will be necessary for African governments to approach the gas transition with some caution. This is particularly important for those countries that do not have access to their own gas reserves, and which must therefore rely on international imports. The prevailing economics of the moment allow for gas to be imported quite cheaply, but once global demand begins to ramp up African countries that have begun to rely too extensively on international supply could find themselves on the backfoot, now dependent on an expensive imported commodity. Conversely, African states that find themselves too heavily dependent on Gas exports could face the same problems of plateauing demand that major oil exporters are facing now after 2035 when the global gas industry is expected to peak. African states that are positioning as producers could hedge against these risks by creating a specialised regional market for African gas, potentially establishing an OPEC-like agreement for daily production with an eye on maintaining price stability despite the limited international interest in such a venture given the currently low prices.

5.2 For investors

Plan carefully in shifting focus from oil to gas

Much ground still needs to be covered technologically before major demand industries like aviation and maritime transport are converted away from petroleum-based fuels and toward gas and other alternatives. Leading up to 2040 oil producers need to capitalise on the remaining demand for crude and refined petroleum in more developed European and Chinese transport markets before the sale of new petrol/diesel vehicles is phased out and entry into new market niches for LNG export becomes difficult to acquire. In developing markets, the industry will continue to see oil demand growth in large geographies that lack access to electric-charging infrastructure for new EV models.

As such, though gas offers its own challenges from the perspective of lacking infrastructure and market demand, new government initiatives will over time facilitate further infrastructure development and provide a conducive environment for consumer uptake. There is also additional scope for gas uptake in the utility space as African states move into cleaner energy generation initiatives.

Begin to see the benefits of local investment

There is no getting around the fact that African governments will be taking a firmer stance on local beneficiation initiatives alongside issues like environmental damage which are an ever-present concern. As gas demand rises both domestically as well as in other regions of the world, having to invest in the local market should be viewed as beneficial in the long-term context of positioning for future demand. With many African countries seeking to reach high if not middle income status by 2050, Africa will increasingly shift from being merely a supplier of hydrocarbons to an actual end user in and of itself, which will open additional room for local investment in developing existing and new production sites. By investing in local content firms, and midstream and downstream transport and distribution infrastructure, companies will foster both a new market for future products as well as a production channel for export supply.

Don't write off undeveloped markets

The post Covid-19 period has seen oil and gas majors cut back on capital spending and retreat to safer and more offshore-driven projects as safer bets, which has in turn placed the future of more nascent African markets that are looking to develop their industries in jeopardy. Though this strategy is understandable from a risk management perspective it nevertheless places private companies in a situation where they are dependent on a select few governments for their African projects, which could be riskier in the long run. Markets with few immediate prospects of foreign capital injection would be far more willing to negotiate with oil and gas companies for more lenient terms, and could provide an early mover advantage much like MTN has achieved across the content in the telecoms space. Taking this into account on new investments should form part of corporate strategy going forward as it has the potential to pay dividend in the longer-term.

Opportunities for Future Consideration

Crude oil value chain

1. Offshore exploration

As oil and gas majors spin off their offshore holdings and dither on new ones, smaller more agile firms can fill the gap

2. SOE privatisation

State oil companies are looking to attract private investment and achieve greater control over their domestic industry.

3. Refineries/Mid Stream

African governments, particularly East African ones, are pushing to foster and expand their refinery capacity, and require foreign investment to do so

4. Digitisation

Amid price volatility and calls for environmental cost reduction, there is more space than ever for investments into efficiency enhancing technology

30%

The rough amount of “legacy fields” in Africa most in need of digitization

US$20 Million

The expected increase in annual returns on a 100-well project following digitisation

2 Arms of opportunity in the digitisation space

Control systems/ data collection

Remote sensors, actuators, IoT networks, SCADA control systems

Data Analysis

Software for monitoring and work scheduling/ preventive maintenance

Top markets of demand up to 2030

Europe - With the switch to renewables Europe is set to balance carbon deficits with additional LNG.

Asia - The region will further increase its share of total LNG imports from Africa, from 69% in 2019 to 77% by 2025.

Gas value chain

1. Reservoir gas

Gas in tis natural state, found on its own or in/near crude oil deposits.

2. Regasification

Moving LNG from gas to liquid and back to enhance transportation

3. Liquefaction

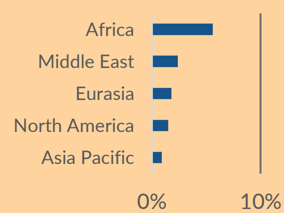
The gas is cooled to -160C degrees, transforming it into a liquid which can be transported.

4. Transportation

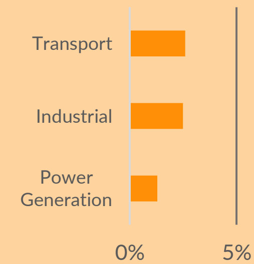
LNG is shifted in insulated tankers and then traded on the international market

What makes Africa unique?
The African continent is the fastest growing LNG market in the world.

Annual LNG consumption growth rates leading up to 2025



Key industry drivers of future growth



US$20 billion

The amount poured into Northern Mozambique's LNG projects alone

Risks to consider

2025

Increasing liquefaction capacity outgrowing demand could lead to oversupply and market shrinkage

2037

Global gas demand is expected to reach final peak, Renewables transitions should by this point be well on their way to achieve the 2050 decarbonisation goal

6. Conclusion

The African oil and gas industry stands at a threshold, forcing stakeholders to dramatically reassess their strategies for the next few decades. New players are emerging in the African oil and gas space, particularly in East Africa, while long time oil majors are investing heavily into advancing up the value chain with midstream and upstream infrastructure. Covid-19 has led to extensive redrafting of priorities, moving the oil and gas industry from a 'business as usual' approach to a new paradigm where crude oil will play a smaller part in certain local economies instead of its main axis – value addition is particularly high on the agenda among incumbent markets like Angola and Nigeria, but is also front of mind for emerging markets like Tanzania and Uganda.

Long-term divestment away from oil and gas projects will eventually make the funding of new production challenging and will require that early motions are made to decrease dependency on hydrocarbon resources, both for energy and revenue generation. Economic populism has surged across the continent and African governments are becoming more consistent than ever before in drawing out maximum benefit from their natural resources given revenue shortfalls and growing budget deficits.

Though stricter ESG requirements also heighten compliance risks for externalities like environmental impacts, they are necessary in appeasing local communities who have been impacted negatively by both environmental degradation as well as limited beneficiation from hydrocarbon resources.

Yet, as old opportunities fall away, new ones arise. Gas for one is being championed in major export markets as a more sustainable transitory alternative to crude oil for a variety of applications, from energy generation and marine transport to home utility such as heating and cooking. This offers up a vast new frontier for gas developers in African markets as governments push initiatives to make gas available and affordable for domestic consumption. The transition will not however be an easy one as infrastructure is still in significant need of investment and development while its regionalised nature and seasonal demand swings make it a markedly different industry to trade in compared to conventional crude oil. Regardless, African states are making an early start which will place them and their investors in good stead to secure the continent's future as a continuing major hub for energy exploration and production leading up to 2050.

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