



Image: University of Ontario

AFRICAN LNG INDUSTRY REPRESENTS VIABLE OPPORTUNITIES

GLOBAL SMART COMMODITY MANAGEMENT SOFTWARE SOLUTIONS FIRM, EKA, REFLECTS ON SOME DEVELOPMENTS IN THE OIL AND GAS INDUSTRY IN AFRICA AMID DIFFERENT CHALLENGES FROM REGION.

BY MARY DEFILIPPE, DIRECTOR OF MARKETING COMMUNICATIONS AT EKA

EVEN THE BRIEFEST OVERVIEW OF THE OIL AND GAS SECTOR IN AFRICA CONFIRMS THE INTERCONNECTED NATURE OF THE INDUSTRY, AND ILLUSTRATES THE MULTIPLE FACTORS THAT DETERMINE WHETHER PRODUCERS, REFINERS, TRANSPORTERS, AND TRADERS ARE SUCCESSFUL OR NOT.

In fact it is often misleading to speak of an African oil and gas sector, when different countries are taking different approaches – and facing very different challenges. For example, while Angola, a member of the Organisation of the Petroleum Exporting Countries (OPEC), considers how to respond to the cartel's decision to cut production, fellow member Nigeria is developing the offshore Egina field and looking for the political stability to control Islamic militants in its production heartlands.

On the other hand, countries like Chad and Gabon are looking to benefit from OPEC's harder prices, while Kenya and Uganda are more focused on protecting pipeline assets and vessels in the face of local bandits and re-emergent Somali piracy.

Joint ventures abound

Africa demonstrates that no country – indeed no continent – operates in isolation. Joint ventures with foreign players abound.

China continues to invest heavily, despite its own slowdown, while South Africa is talking of exporting to Singapore, and a number of countries are also in conversations with Iran to increase its stake in various operations.

What happens to one African country often affects its neighbours and competitors: what happens in the rest of the world can have a similar impact.

Against this background, one of the most notable developments of late has been the growth in Africa's liquefied natural gas (LNG) industry. In West Africa, Equatorial Guinea's Fortuna LNG project is estimated to hold almost 96.3 billion cubic meters of natural gas; the Nigeria Liquefied Natural Gas Company (NLNG) says it could unlock three times as much gas as the country's proven reserves if it carries out its expansion plans – and is in talks with potential buyers for gas supply contracts; new LNG terminals are being developed in Sierra Leone among others.

In East and Southern Africa, Tanzania and Mozambique are home to the region's largest natural gas reserves with a combined capacity of nearly 250 trillion cubic feet – and a very convenient coastline from which to supply demand for LNG from China, Japan, India, and the Middle East in the face of stiff competition from other major LNG producers.

These are just some of the examples of Africa's rapidly expanding but highly unpredictable oil, gas, and liquids sector. All this has created a market environment that is changing fast, not just for native organisations, but for global players with a major stake in downstream operations.



Every organisation has to coordinate a multitude of localised but interdependent actors, mitigate significant interconnected risk factors, and make real-time decisions with consequences that ripple out to almost every area of the business.

However, for LNG operators, there are extra considerations. They need to develop sourcing strategies for natural gas coming from new suppliers, as well as demand management strategies to sell the liquefied product. Other areas of the business need to ensure seamless logistics, to avoid negative effects on delivery and storage costs and eventually margins.

Exploring LNG

The advantage of LNG in contrast to natural gas is transportability, but this advantage also comes with complex calculations that take into account compliance and regulatory requirements for certain routes, ports, and births. Not every port accepts LNG, and not every vessel is equipped to transport it.

Routes for other raw commodities or refined products may not be suitable for highly inflammable LNG. Operators need to get the balance right between fleet availability, route choice and the need to minimise losses from in-transit boil-off – and the consequent effect on volumes and contracts to purchase.

These calculations also feed into investment decisions in new facilities: can the refinery be reached by safe pipelines? What losses will ensue? Are other forms of transport needed? In addition, customer behavior and demand patterns, changes to local economics and international geopolitics, weather conditions, and climate impacts need to be taken into account.

Equally important, mobile support makes essential functions and insight in even the remotest locations. Both overcome the absence of robust fixed telecoms infrastructure that often characterises emerging markets.

For independent or downstream specialists – with or without some degree of public ownership – one wrong move can have wide-reaching consequences. For vertically integrated companies, insufficient support and insight into the refining, liquefaction, regasification, logistics, and customer-serving segments of the business can easily eat into the profits made by the substantial investments in upstream operations.

Solutions

The complexities, causalities, and co-dependencies involved create a picture that is simply too big for the human eye to see unaided. Traditional ETRM solutions are necessary, but they are not sufficient. Largely transactional, these systems do not have strong analytical capabilities.

Consequently, they do not offer the complex logic required to manage Africa's unique energy market challenges, and cannot provide a complete picture of an organisation's total positions, exposures, dependencies, and counterparties.

What businesses need are systems that enable users to deploy advanced analytics in order to support predictive capabilities and proactive support. These allow today's decision-makers, wrestling with growing volumes of data, to derive insight needed to inform their choices. Without adequate analytical capability, crucial decisions can be made with limited or insufficient evidence.

Fortunately, as the demands on systems have grown, the means of deploying them have put them in reach of a far greater number of companies.

The number of cloud deployments are only set to accelerate and will provide the computing heft needed to provide real-time analysis and visualisations of key data.

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The African LNG industry represents huge opportunities provided operators of all stripes have the right tools at every stage of the value chain.

But as we have seen before, with payments and telecoms sectors, Africa's emerging markets often leapfrog cumbersome legacy systems and become pioneering adopters of the cutting edge. The oil and gas sector could well be the latest addition to that list.

About the author



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