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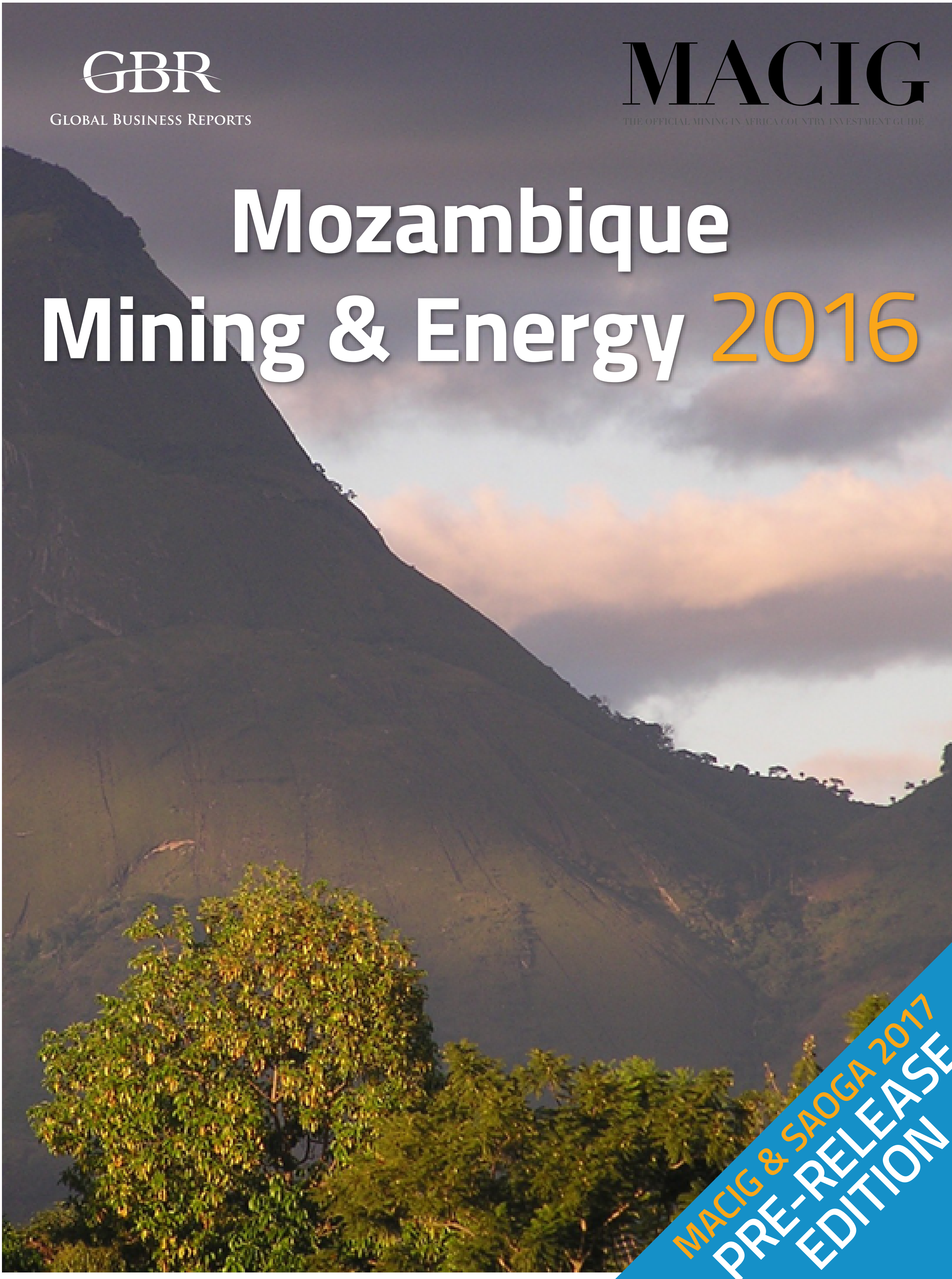
THE OFFICIAL MINING IN AFRICA COUNTRY INVESTMENT GUIDE

Mozambique Mining & Energy 2016



MACIG & SAOGA 2017

PRE-RELEASE EDITION

Table of Contents

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Mozambique Mining & Energy 2016

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Dear Readers,

Investing in Africa's strong natural resource potential requires significant research and an appropriate assessment of each country's unique challenges and opportunities. While the mining and oil & gas potential in Mozambique is undeniable, the sustainable development of these sectors requires careful consideration into the political stability, regulatory transparency and infrastructure. The way in which these immediate challenges are addressed will shape investor confidence and national development in this era of commodity downturn.

This pre-release edition of our research into Mozambique explores the history, geological potential and complex business environment. We aim to provide a comprehensive analysis of the investment climate for the mining and energy sectors exploring the myriad of challenges, regulatory framework, and potential rewards available for those dedicated to developing this market.

We want to thank all the company and association leaders who generously donated their time and insights to make this publication a success. We look forward to meeting with many more industry experts in the coming months as our team travels across the continent to profile to the investment destinations including Angola, Cote d'Ivoire, DRC, and Zambia.

The final reports, The Official Mining in Africa Country Investment Guide and The Sub-Saharan Oil & Gas Handbook, will be released at the 2017 Africa Mining Indaba and 2016 Africa Oil Week, respectively. All GBR publications are available digitally at www.gbreports.com or contact us for a hard copy.

Sincerely,

Molly Concannon
Project Director

Global Business Reports

Mozambique

Waiting for the cycle to turn

It is a common enough cliché when writing about Africa to remark on the vast potential that exists in a given country, while bemoaning the unfortunate present. But in Mozambique, the disparity between what is and what could be is so stark that it bears repeating.

The country hosts some of the world's largest known reserves of coking coal and natural gas, as well as substantial tracts of agricultural land and one of the longest coastlines in southern Africa. However, it remains one of the poorest countries in the world, ranked 180th out of 188 countries in the UN's Human Development Index.

Following a brutal struggle for independence from the Portuguese – won in 1975 – the country was immediately tipped into an equally brutal civil war that finally came to an end in 1992, leaving the nascent nation in tatters.

Since that time, the outlook has been more positive. Mozambique has been one of the region's star economic performers, with GDP growth averaging over 7% in the last two decades, though this headline growth has done little to lift the majority of the population out of poverty.

The recent commodities slump hit hard in Mozambique. Coal prices began to dive just as the country's mining industry was building up momentum, cutting short the mining boom in its prime. Meanwhile, the gargantuan Rovuma Basin gas fields were discovered in 2012, meaning that hydrocarbon prices collapsed just as developers were starting to seriously consider investments.

Government revenues depend heavily on contributions from foreign investors, which have fallen abruptly, though reliable figures are difficult to come by. In March, Moody's downgraded the country's credit rating from B3 to B2, citing the reduced capacity of the government to service its debt and declining foreign exchange reserves at the Bank of Mozambique.

However, behind the curtain of gloom, there are significant indications of political and economic progress.

Although new president Felipe Nyusi is a member of the FRELIMO party that has ruled Mozambique since the civil war, he is the first president not to have fought in the struggle for independence. His 2014 election victory should mark a transition from the corrupt, militaristic old guard of the party elite, epitomized by his predecessor, Armando Guebuza.

Important investments in infrastructure in the North are taking place in the form of the development of the Palma and Pemba ports and Vale's Nacala Logistics Corridor, while in February, the Mozambican government approved Eni's development plan for its Coral floating LNG train.

Assuming the country can weather the storm of low commodity prices and maintain its relative political stability, Mozambique should be in a strong position to finally capitalize on its natural assets when the cycle turns again.

Mining

When Vale inaugurated its multibillion-dollar Moatize mine in 2011, the media proclaimed the start of a coal boom in the Tete province, with major mining houses and ambitious juniors scrambling to invest. They had mixed results. Rio Tinto's 2011 acquisition of the Benga coal project for $3.7bn and subsequent sale for $50m in 2014 has become emblematic of the industry's hubris and carelessness during the boom years.

Logistical problems have so far capped Vale's total coal exports at 6.5 million mt/y, despite nameplate production capacity of 11 million mt/y. The operators resorted to storing mined coal in stockpiles, which has caused environmental and safety problems. Heavy rains then led the Brazilian major to declare force majeure on shipments of 500,000 mt in 2013. Eventually, the company decided to take matters into its own hands, constructing the Nacala Logistics Corridor, its own integrated logistics network consisting of a 900 km railway and deep-water port complex. The project was completed in late 2015 at a cost of around $4.4 billion and Vale hopes this will now allow Moatize to become profitable.

Indian steel conglomerate Jindal is the other major producer in the region, with its Chirodzi mine currently producing approximately 3 million mt/y. Despite production capacity of nearly 10 million mt/y, Jindal has been beset with the same logistical problems as Vale, but is waiting until coal prices improve to invest in more infrastructure.

As Bill Jenkins, country manager for mining equipment producer and supplier Atlas Copco, notes: "One of the biggest challenges of doing business in Africa – not only Mozambique – is high transport costs resulting from poor infrastructure. If Mozambique is to realize its full potential, more and better infrastructure must be developed."

MINING CODE

In 2014, the Mozambican government updated the legislation that governs the mining industry, reflecting the sector's strong growth since the previous legislation was passed in 2002. "It is important to point out that the changes are evolutionary and not revolutionary," said Eduardo Calú, Managing Partner, Sal & Caldeira "Most of the changes are fairly minor."

The main changes can be divided into three broad areas: promoting local development and participation in mining, imposing more stringent requirements on mine operators and expanding the scope of activities regulated under the legislation. Taxes were not affected and are dealt with under separate legislation. Even if the fiscal regime were to change, investors are currently protected by a five-year stability agreement, which insulates them from tax hikes.

Under the new law, mine operators are required to give preference to local suppliers, assuming that the quality of the goods or services they provide is comparable with imports. Prior to this, there was a similar requirement, but it was subject to the price of Mozambican goods – if local procurement was substantially

"Our policies and fiscal regime are based upon the economic realities of the previous decade's commodity boom. Now, some commodities have lost 50% of their value in three years and we have still not adapted our laws accordingly."

- Casimiro Francisco, CEO, Empresa Moçambicana de Exploração Mineira (EMEM)

more expensive, miners could import.

New miners will also have to list their companies on the Mozambique Stock Exchange, though existing investors are exempted from this obligation.

There is now a clause that makes in-country mineral processing obligatory, if it is economically viable. While this may seem like a rather onerous obligation, there is no supporting text to define what constitutes "economically viable." Given the high cost of power and transport in Mozambique, increased levels of beneficiation are unlikely to be economically viable.

A third change to the law pertains to environmental requirements. In step with global norms, prospective miners will have to submit a decommissioning plan along with their initial feasibility studies to receive a mining license. This should not pose a particular problem, as any respectable mining house will include such plans as standard from the first stages of development.

A final issue to bear in mind is a proposed shakeup to regulatory agencies. A new High Authority for Extractive Industries is supposed to assume ultimate oversight over Mozambique's mining and oil and gas industries. However, 18 months after the plan was floated, there is still no sign of the agency becoming a reality.

Some feel that the changes did not go far enough. "Our policies and fiscal regime are based upon the economic realities of the previous decade's commodity boom," said Casimiro Francisco, CEO of Mozambique's state mining entity, EMEM. "Now, some commodities have lost 50% of their value in three years and we have still not adapted our laws accordingly."

Another complaint is a lack of consistency in application of the law across different regions. "Different provinces interpret the law differently so, in effect, there is one law for Nampula and Manica, and a different one in Maputo," said Eduardo Calú. "We are one country, not three and the practice of the law should reflect this."

"Mozambique has plenty of unexplored ground and there are still fantastic opportunities to discover new mineral deposits. We also see great potential for construction materials as the domestic market is growing rapidly."

Mário Deus, Managing Partner, Gondwana

MORE MINERAL DIVERSIFICATION

Mozambican mining is not just a story about coal. According to Mário Deus, Managing Director of local consultancy Gondwana: "Mozambique has plenty of unexplored ground and there are still fantastic opportunities to discover new mineral deposits. We also see great potential for construction materials as the domestic market is growing rapidly."

Mozambique's surface geology is fairly well understood, albeit to a fairly low level, and the country is mapped to a scale of 1:250,000. This is not a sufficient level of detail for a junior mining company to work with but the Ministry of Mines is working to create a 1:50,000 scale map. It is yet to be decided if this will take the form of airborne geophysical surveys or geochemical work.

Uniquely in the region, Kenmare Resources operates a dredge mine that filters heavy mineral sands for zircon and ilmenite, a titanium ore. Kenmare ramped up to full capacity in 2013, posting record production figures in Q3 2015. Their coastal location insulates them from the logistical issues that plague inland mines. According to Mozambique manager Gareth Clifton: "While we complain about the quality of power, the cost of power remains reasonable. As we dredge mine, our costs are very low and we would be towards the bottom of the industry cost curve."

Although not yet in production, Syrah Resources' Balama project has the potential to become one of the region's major graphite hubs. With a JORC Compliant Ore Reserves of 81.4 mt at 16.2% total graphitic carbon for 13.2 mt of contained flake graphite, Balama is the largest graphite ore reserve in the world. "Our objective is to develop the mine and put graphite into production by the beginning of 2017," said Syrah's Mozambique manager, Dinis Napido. "A key advantage of our Mozambique operation is its low production cash costs of US$286 per product mt," he added.

"We now have the full package. The project will generate good commercial returns, but also unprecedented socio-economic returns."

Ben James, Managing Director, Baobab Resources

The Company successfully completed an US$148 million capital raising during August 2015 and is now underway with project development.

Baobab Resources is probably Mozambique's most ambitious mine project. Initially envisaged as an iron ore mine and pig iron smelter, the owners now plan to build a fully integrated steel mill. With a proven reserve of 1 billion mt iron ore and major coal producers in close proximity, the company believes it can supply steel products to southern Africa more cheaply than they can be imported from China. "We now have the full package," said managing director Ben James. "The project will generate good commercial returns, but also unprecedented socio-economic returns."

Looking to the future, Casimiro Francisco of EMEM believes that REEs could form a significant part of Mozambique's export economy. "There is a very interesting situation arising within the rare earths market. Some countries have already depleted their resources, but demand continues to grow. Mozambique hosts rich reserves that could help plug this supply gap," he said.

Eduardo Calú

Managing Partner,
Sal & Caldeira Advogados, Lda.,

Please provide a brief introduction to Sal & Caldeira?

Sal and Caldeira is a full service Mozambican law firm with offices in Maputo, Tete, and Pemba. As such, we are in a strong position to serve the country's mining and oil and gas hubs. We offer a complete range of services from corporate law through to labour and administrative law, tax and litigation. We are particularly strong in the area of natural resources and are founding members of the Mozambican International Petroleum Operators Association (AMOPI). Through AMOPI, we are also involved in the development of resource legislation, because AMOPI is the interlocutor on legislation vis-à-vis MIRAM.

For investors coming into Mozambique what are the key competitive advantages of Sal & Caldeira?

Sal & Caldeira's main competitive advantage is that we are a thoroughly Mozambican firm. Many of our competitors are based overseas with just a branch in Mozambique. This is not ideal. Anybody can read the legislation and understand what is written on the page; it is quite another thing to be here on the ground dealing with institutions everyday, to be culturally Mozambican. Out of our team of more than 80 people, only two are expatriates.

In 2014 there were some changes made to the mining law. Could you elaborate on how these changes will affect investors?

Most of the changes are fairly minor. There are now tighter rules governing indirect transfers of mining titles. Similarly, the scope of transactions covered under the capital gains obligations is much greater. Aside from this, formerly, mines had to be developed according to a strict timeline based on when land rights and environmental permits were issued. Under the new law, the timeline is less rigid.

Do you think there will be any changes to the regulatory bodies?

The new legislation heralded the creation of a National Institute for Mining. There are also plans for a High Authority for Extractive Industries, which is supposed to govern both the petroleum and mining sectors. However, a year after the concept was created, we are yet to see what the government plans to do with it.•

Oil and Gas

Until relatively recently, sub-Saharan Africa's oil and gas industry was focused almost exclusively in the West, with Nigeria and Angola serving as the region's two primary hubs, but the discovery of Mozambique's vast offshore gas fields is pulling the traditional centre of gravity further east.

Mozambique's section of the Rovuma Basin, which is also shared with Tanzania, is believed to hold up to 170 trillion cubic feet of natural gas. Standard Bank estimates that this is enough to make Mozambique the world's third largest exporter of LNG, adding $39 billion to the local economy.

The deposit was discovered in 2012 by two exploration consortiums led by Eni and Anadarko Petroleum, and delineated in more detail through subsequent drilling campaigns in 2013.

A combination of the slump in global oil prices and local regulatory uncertainty stymied initial hopes that Mozambique would become an LNG exporter by 2016. At this point, the earliest any potential production is likely to come online is 2020.

"Encom is preparing to enter the oil and gas sector. We have participated in workshops and have identified where the company can add value by creating sustainable and innovation solutions."

**- Abreu Muhimua,
CEO,
ENCOM**

At present, Mozambique's only gas production comes from SASOL's onshore operations in Inhambane Province. Gas is extracted at the Pande and Temane fields then transported via a 525 km pipeline to Ressano Garcia, and finally over the border to industrial clients in South Africa.

THE PETROLEUM LAW: A LONG TIME IN THE MAKING

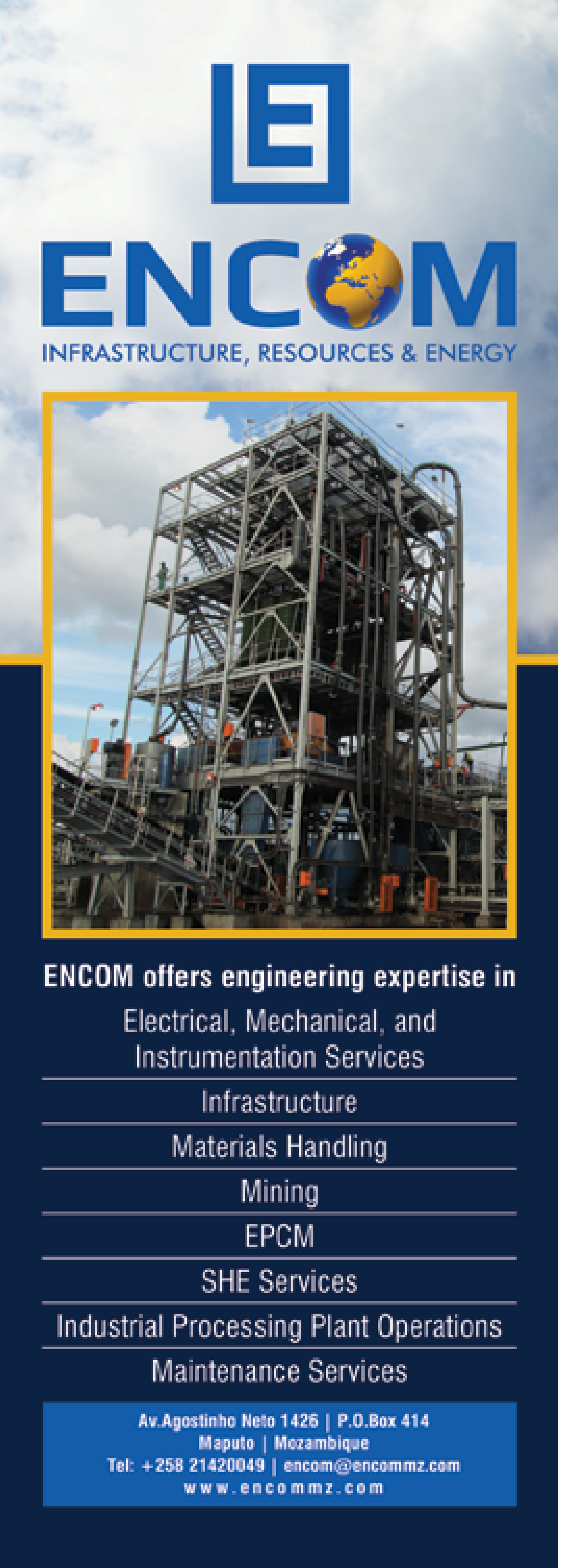
One of the principal reasons why Mozambique's oil and gas industry has struggled to get off the ground was the delay in introducing new legislation. After two years of deliberation, the Petroleum Law and Petroleum Tax Law were released in Q4 2014, drawing considerable controversy.

The main thrust of the legislation was to increase the country's share of benefits from any potential projects and to broaden the scope of application to include all midstream infrastructure, including LNG plants. Despite considerable interest from investors, the new laws do not cover gas-to-liquids projects, as these are deemed not to be petroleum operations.

It is also worth noting that the Eni and Anadarko projects in Offshore Areas 1 and 4 are governed by their own separate legislation, which was issued as a governmental decree in January 2015.

ENH, the national oil company, will now

IMAGE: Courtesy of ENCOM



take a more active role in new projects. All exploration and production activities must now be carried out in partnership with the organisation. It will also assume leadership in downstream activities such as refining and marketing oil and gas products. Meanwhile, state participation in concessions is set to increase, though there are no specific guidelines on how this participation would be financed.

More stringent local content regulations are another key feature. Foreign suppliers must now associate themselves with a Mozambican entity, while oil companies are obliged to give preference to local suppliers, as long as their cost does not exceed that of imports by more than 10%. Training and local hiring regulations are less clear. Although companies are required to provide employment and training to Mozambican nationals, there are no firm details on how many workers must be taken on to fulfil this requirement.

As it stands, there are very few Mozambican companies that operate within the oil and gas sphere, although there are a high number of engineers with experience in the mining industry. Abreu Muhimua is an example of such an engineer. Formerly the managing director of DRA, he decided to set up his own business to take advantage of the forthcoming gas boom. "Encom is preparing to enter the oil and gas sector. We have participated in workshops and have identified where the company can add value by creating sustainable and innovation solutions," he said.

Possibly the most controversial clause is that at least 25% of petroleum produced by a Mozambican operation must be allocated to the domestic market.

As with the new mining legislation, oil and gas companies must now list on the local stock exchange. However, there is no reference to the timing of the listing, or what proportion of the share capital must be listed.

The petroleum tax law does not bring any particularly drastic changes. Production taxes for crude and natural gas remain at 10% and 6% respectively, although the pricing methodology used to assess the tax base is now more sophisticated. Corporation tax is also unchanged at 32%. Certain tax incentives, such as an exemption on import duties for capital equipment during the first five years of development, have been introduced.

MOVING ON WITH THE MEGAPROJECTS

On February 23rd 2016, the Mozambican government gave formal approval to Eni's plan of development (POD) for its 3.4 million mt/y Coral floating LNG (FLNG) train, although the company has yet to give a final investment decision.

Eni first submitted its POD in the last quarter of 2014. It took over a year for the regulator to come to an agreement on all the terms and conditions. One of the most contentious areas was the amount of gas that would be allocated for use within the country. The state initially demanded that the operator set aside 25% of total production to promote development of local industry. However, the high costs and engineering challenges posed by constructing a pipeline from the offshore production site to the mainland made

"We have already started on the Phase 1 development of Pemba, which is predicted to run from 2015 to 2018. By the end of this period, we should have an 800 m quay, 80 Ha of land for commercial use around the port and 200 residential units."

- André da Silva, CEO, PCD

this option unviable.

Instead, Eni has pledged to implement a more comprehensive local content strategy, though details of this have not been made public. Additionally, the operator has guaranteed to offer condensate – a by-product of the liquefaction process with applications as an industrial feedstock – at a discount to market prices. The pricing formula by which this discount would be calculated is also yet to be released.

The ball is now in the Italians' court. While Eni executives are enthusiastic to get the project underway, the current low oil prices appear to have dampened the spirits of the remaining members of the consortium. The other parties involved are China National Petroleum Corp (20%), Kogas (10%), Galp Energia (10%) and ENH (10%).

The total cost of the project is estimated at between $8 billion and $9 billion. While modest compared to some of the larger projects that have been constructed in recent years, there are some factors that may lead lenders to view Coral as a risky investment.

On the project side, FLNG is a relatively unproven technology and this will be the first such project in the Indian Ocean. The potential for unforeseen snags in both developmental and operational phases is high.

Market fundamentals are not looking so bright. A slew of new LNG projects in Asia and Australia have led to oversupply in the East. In parallel, subdued economic growth in the primary markets of China, Japan and South Korea suggests that prices are unlikely to strengthen in the near future.

That being said, financiers are likely to take a long-term view of the project. Recognising that the oil and gas industry is cyclical and that prices will eventually rise again, development of Coral is almost inevitable; it is simply a question of when it is going to happen. The quality and scale of the resource dictate that eventually it will be exploited.

The status of Anadarko's 12 million mt/y onshore project is less clear. In a press conference in March, the company announced that it would have only minimal funding in place for this year. In the meantime, the American independent is looking to secure at least 8 million mt/y of long-term sales contracts and moving forward with legal requirements.

Late last year, country manager John Peffer announced that the company would be giving a final investment decision at some point in 2016. With an estimated price tag of $20 billion, the project is more expensive that Eni's smaller floating production site. Export credit agencies are expected to finance up to 60% of the project.

PORTS AND EXPORTS

After the logistical quagmire in which the country's mining companies found themselves, it became clear that to maximize the potential from Mozambique's gas reserves, it would be necessary to construct world-class infrastructure around them.

This realization led to the formation of Portos de Cabo Delgado (PCD), a public sector joint venture between ENH and CFM, the national ports and rail company. PCD is tasked with developing the Pemba and Palma ports in the Cabo Delgado province where the oil and gas activity will take place.

Palma is the closest land to the Area 1 and 4 offshore developments and will eventually be the site of Anadarko's liquefaction plant. The plan is to have some marine infrastructure in place to facilitate this construction effort, and then also to export the gas itself when the plant comes online.

The development of Pemba is an even larger undertaking. The vision is for the port to become a regional hub for oil and gas services, based on the Onne oil and gas port in the Niger Delta, which brings together 170 companies involved in the hydrocarbons sector. "We have already started on the Phase 1 development of Pemba, which is predicted to run from 2015 to 2018," said PCD's CEO, André da Silva. "By the end of this period, we should have an 800 m quay, 80 Ha of land for commercial use around the port and 200 residential units."

This first phase will require investment of approximately $400 million.

A key investor in the project is Orleans Invest, the operator of Nigeria's Onne Port. They have a proven track record of developing similar infrastructure and are expected to bring a large number of their clients from Nigeria into Mozambique.

Da Silva is optimistic about the future of the project and brushes off concerns about major delays with the LNG investments. "It is only a matter of time before these resources are exploited, and when extraction commences. the operators will need large-scale marine infrastructure. PCD will already have the necessary facilities in place. If the projects are delayed, all that happens is that our investment will take longer to recover," he said.•

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