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TIME TO SHIFT GEARS?

Using petroleum to generate greater wealth and opportunities in a low oil price environment

Once again, Angola, although up high on the ranking of Africa's biggest oil producers is experiencing tough times due to the sudden drop in crude oil prices. After experiencing rapid growth and development in the last couple of years, and being seen over and over again as one of the industry's darlings on the continent, the man on the street in Luanda and oil company workers and executives alike are asking "where to now?"

Low oil prices have driven hard currency reserves to levels that do not currently allow the country to settle all the imports it needs to function, those entrepreneurs that have invested in local production are finding it hard to access the raw materials required to continue manufacturing, and confidence is being affected. However, although there is always a tendency in these cycles to blame the oil industry for the country's woes, the answer (or at least part of it) may just be found in the industry itself.

The use of oil-generated revenue and petroleum resources to improve or stimulate the non-oil economy is something that has been successfully tested in various countries worldwide, and that is often on the tips of the tongues of economists that look at developing oil producing nations. Angola, in the midst of the current oil price crisis, may have two important tools right on its doorstep to do just that.

The Onshore "Miracle"

A lot has been written about the untapped potential of the Angolan onshore throughout the years. However, the truth is that, although often announced as the country's next "oil producing frontier", not much has happened in recent years. With the exception of the traditional fields, and the limited production in Soyo and the on and off efforts in Cabinda (some of which are finally coming to fruition after decades of stops, starts and stumbles), the government's successive attempts to develop the Congo and Kwanza onshore basins have never really taken off. For various reasons, including the 2008 drop in prices, the need to adequately prepare the legal framework and the local populations for the challenges of onshore exploration, and the decision to first bet on the nation's pre-salt potential, onshore stayed on the back burner until last year, when a new onshore licensing round was finally launched.

After carefully assessing the interest of the industry and the applications made, in September this year the local authorities finally announced the list of pre-qualified entities for both operators and non-operators,

where we will find some well-established names, but also medium and small sized independents from all over the world, and a significant amount of indigenous Angolan companies looking to enter the scene through what is perceived as a lower cost and lower risk play.

The issue at the moment, however, is whether or not the terms of reference also recently announced by the Ministry of Petroleum and Sonangol are sufficiently attractive in a low oil cost environment to allow the more qualified operators and the smaller sized solid and experienced companies to convince their boards that it is worthwhile to invest in the Angolan onshore at a time when other opportunities are arising worldwide as a result of companies having to readjust their portfolios.

As we all know, onshore exploration has its challenges, but as has been seen with the US shale revolution, it can also be a catalyst for huge economic development of the regions where the petroleum activities take place.

It would be a shame to see Angola miss out on the opportunity to take growth to certain less developed areas of the national territory and increase employment opportunities due to terms that the companies associate more with the prolific offshore. Perhaps a readjustment of the bidding deadlines, accompanied by a relaxing of the terms of reference (notably in terms of adding greater flexibility in the work program fixed requirements) would be sufficient to make the licensing round more attractive in the current scenario, and bring in more bids and players.

Pre-Salt Gas – can't live with it, can't live without it
Natural gas can be an oil province's best friend or worst nightmare. A blessing or a curse. On the east coast of Africa, huge natural gas discoveries launched the Mozambique and Tanzania oil industries; in Nigeria and Equatorial Guinea they allowed for the launching of successful natural gas liquefaction projects.

In Angola, the large gas discoveries in some of the country's pre-salt blocks have been an unexpected "bonus" that has left the industry scratching its head. Besides the world class crude oil discoveries in some of the pre-salt blocks (notably the Cameia Discovery), Angolan pre-salt exploration has also led to some large natural gas discoveries, two of the most relevant of which are the Azul field in Block 8 and

Bicuar field in Block 21. Traditionally Angola has been a “crude oil province,” with the legal and contractual terms mostly designed for crude oil discoveries. Even the legal framework for the Angola LNG Project (although contemplating the possibility of future non-associated gas as feedstock) was designed to monetize associated natural gas from the country’s crude oil fields.

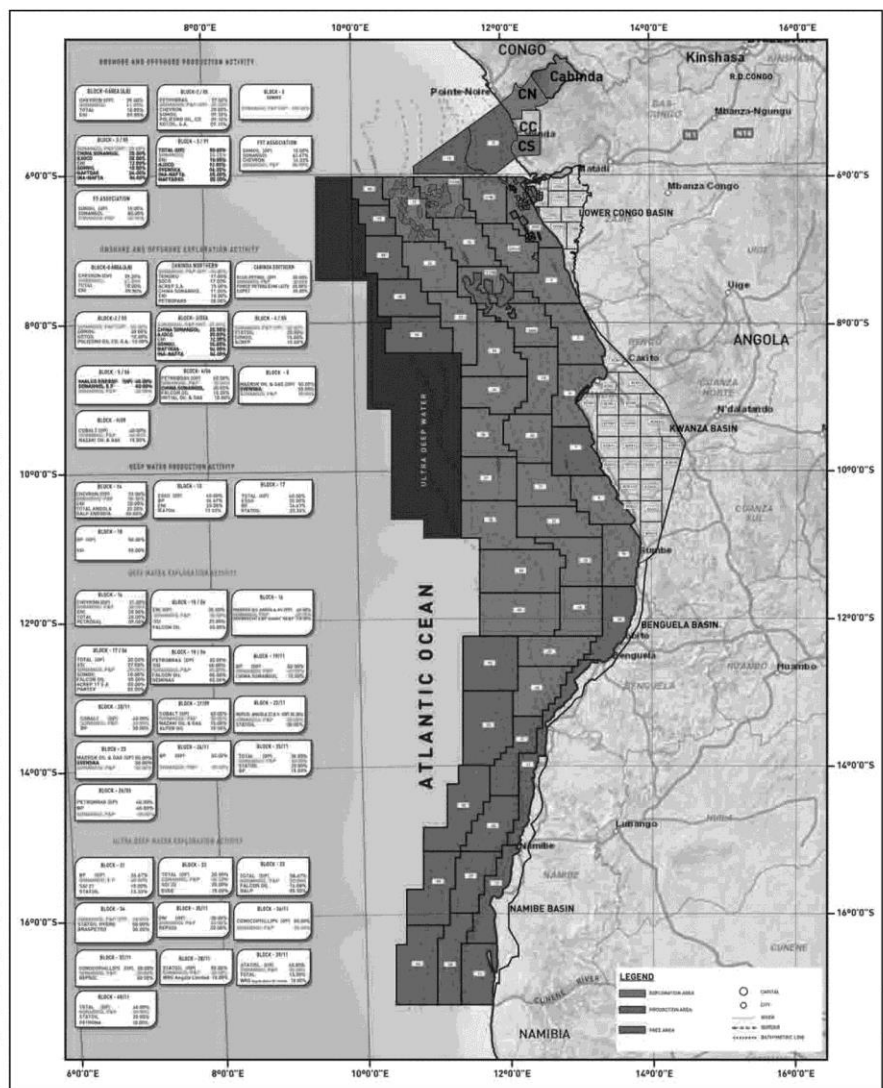
Faced with large discoveries of gaseous hydrocarbons, the question now is how to monetize this gas within the existing framework, or how to negotiate and approve changes to the framework that will allow this gas to be used to the benefit of the country. Of course the ideal solution would be to involve the international oil companies that have made the discoveries in their development as this would not only allow them to recover their investment and make an adequate return, but also send a clear and positive message to the international industry. This, however, requires an agreement first and foremost on the development model for the natural gas’ monetization, but also on the commercial and technical terms of the development.

With the sharp drop in oil prices, petroleum companies active in E&P operations are increasingly focusing on taking calculated risks and anticipated planning. Unexpected events and unforeseen circumstances are, at times like this, the worst fear for businesses. Natural gas discoveries in large quantities are frequently on the top of the difficulties companies have been recently facing while drilling in Angola, in addition to high operating costs. Hard to market and expensive to transport, surplus natural gas is frequently seen as a hurdle for operations, especially for companies who came to the country to find oil.

So where can we find the middle ground where the country’s and the companies’ interests can meet?

Gas to Power and Other Solutions

In line with the government’s purpose of spreading the benefits of Angola’s prolific oil and gas industry to other sectors, gas-to-power appears to be an interesting alternative to monetize all or some of the gas recently found, as this would not only contribute to the industrialization and economic development of the country, but also to the satisfaction of the basic needs of the Angolan population, the vast majority of which is still deprived from power, particularly in rural areas. It would also allow the country to lower its CO₂ emissions, in



Source: Sonangol

line with ambitions and expectations of citizens worldwide and the most recent discussions within the international community (Angola still generates most of its power from “dirty sources” including diesel generators and power plants).

With an electricity production of 5.512 billion kWh (2011 est.), an electricity consumption of 4.875 billion kWh (2011 est.), and an installed electricity generating capacity of 1.657 million kW (2011 est.), the Angolan government has been aiming to increase the electrification rate of the country from 33% (in 2014) to 60% (in 2025), to satisfy consumer demand. The government wishes to increase the country’s electricity generating capacity through an integrated reform, which involves promoting renewable energy sources, enacting sector-oriented legislation, creating specific public funds, and investing in hydroelectric projects, such as the expansion of the Cambambe dam (in the Kwanza North Province), and the construction of both the Lauca dam (in the Kwanza North Province) and the combined-cycle power plant of Soyo (in the Zaire Province).

Local Impact

These plans, however, do not exclude the importance that gas-to-power solutions can have in the country's energy mix, particularly in areas which will not directly benefit from hydroelectric projects.

It is true that the existence of cutting-edge technology and the possibility of implementation of structural projects, would allow the recent gas finds to be monetized thus benefiting local communities and allowing for the electrification of the country and generation of power for non-oil-sector industrial development (crucial to ensure sustainable economic development of the country and job creation). However, the oil companies that invested in exploration and made the discoveries will also need to be convinced that the solution will add value to their shareholders while at the same time not overexposing them to areas of activity that are not within their traditional core.

Angola does not have specific legislation applicable to upstream gas projects. The main statute on this matter is the Petroleum Activities Law which only sets forth limited rules, including that natural gas produced from any petroleum deposit must be exploited, and flaring of gas is expressly forbidden, except for short periods of time when so required for purposes of testing or any other operating reasons. These rules are similar to those included in the majority (if not all) of petroleum contracts (with slight changes in the latest generation contracts), which do not give companies an adequate or even clear legal framework or set of rights to be able to fully commit to investing significant resources in negotiating and developing gas projects. Due to the lack of legislation on this matter, in some cases, the authorities and petroleum companies have attempted to negotiate specific agreements governing the use of surplus gas. However, it has not always been easy to reach an agreement or even an alignment of positions on essential aspects of the projects, including take-or-pay and deliver-or-pay obligations, funding of the projects, among other important issues.

Where to Now?

The end of the civil war and the stable political environment that it gave rise to, along with the vast hydrocarbon resources discovered, are some of the reasons that contributed to rank the Angolan petroleum sector among the most attractive sub-Saharan provinces in which to invest.

Recent gas discoveries may be channeled to gas-to-power projects, thus bringing the electricity and gas markets together to promote economic growth and enhance the basic living standards of local communities. Nonetheless, the attractiveness of gas monetization projects, typically capital intensive long-term investments, does not depend solely on the volume of gas found, as the existence of large hydrocarbon reservoirs does not justify, *per se*, that the oil companies assume both the inherent financial and operational risks. They also depend, among others, on electricity price stability, market conditions, transport infrastructure, and applicable legislation.

Therefore, the Angolan government's drive to bring more power to local communities and cities should be balanced with a business-friendly environment capable of turning surplus gas into an attractive opportunity for current and future investors in the country. Another alternative would be to use the gas for gas-to-liquids developments or as feedstock for petrochemical projects. Both these solutions would allow not only for the diversification of the local economy, but also wider job creation and provide solutions for the use of the gas. However, in all the above cases, the main drivers capable of convincing oil companies to participate in such schemes will most likely be a reasonable off-take price, stable and reliable legal framework, and an adequate risk/reward scenario.

Should Angola show the creativity to attract foreign investors to the country's onshore and to "less orthodox" (at least at a local level) gas monetization projects, it may well ride out the oil price slump with relative tranquility. If things stay as they are, there may be more economic turbulence until the days of a high oil price return. **P**

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