

GHANA

An Emerging Oil Nation

The ingredients are in place for a smooth transition to newfound prosperity, but time will tell if the country is successful.

A Special Report From
Oil and Gas Investor
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Introduction

The discoveries made in 2007 at two offshore sites—West Cape Three Points and Deepwater Tano (now known as the Jubilee Fields)—heralded a seismic shift in the history of Ghanaian oil exploration. Estimates of oil reserves range from 800 million to 1.8 billion barrels of light sweet crude. Most believe these numbers do not represent the sum of Ghana's oil reserves; further exploration projects are leading the government to theorize that number might reach 5 billion by 2015.

This story is well known. Yet despite the fact that Ghana's familiarity with the extractive industries stretches back to its ancient empire, the impact the current hydrocarbon boom will have on the nation remains difficult to predict.

Exploration future

Ghana is not an entirely new market, so perhaps cannot claim the same excitement as if oil had been found in an entirely unexplored area. In fact, oil exploration has existed in Ghana since 1896, but it was not until the establishment of the Ghana National Petroleum Corp. (GNPC) Law in 1983 that serious emphasis was placed upon it. Between 1898 and the late 1990s, an estimated 100 exploration wells resulted in just one significant discovery, Saltpond oil field, which remains in production to this day.

Nevertheless, multinational interest in Ghana's offshore oil potential remained, and in 2004 the GNPC signed a Petroleum Agreement to explore the West Cape Three Points block with a consortium including Kosmos Energy acting as operator, Tullow Oil, Anadarko Petroleum, Sabre Oil and the E.O. Group. In 2006, another agreement was signed with Tullow as operator of Deepwater Tano. On June 7, 2007, Tullow announced a discovery at the Mahogany-1 well, just southwest of Takoradi in Ghana's Western Region. The well, drilled to an overall depth of 3,826 meters, penetrated gross reservoir sands of 271 meters and net hydrocarbon pay of 96 meters, with a gravity of 37 degrees API. A further discovery made via the Hyedua-1 well yielded similar results.

Following a series of similar discoveries on the Deepwater Tano and West Cape Three Points blocks, the consortiums embarked on an ambitious plan to bring the wells into production as quickly as possible. By December 2010, first oil was achieved at Jubilee, making it the fastest comprehensive full-scale development to date.

The initial project, known as Phase 1, used the floating production storage and offloading (FPSO) unit Kwame Nkrumah, anchored off the shores of Takoradi. The vessel, named after Ghana's first president, is a 60-by 330-meter-long tanker with the capacity to process 120,000 barrels per day before exporting to refineries using shuttle tankers. Oil traders Vitol and Trafigura are regular buyers of Ghanaian oil, which is then marketed to refiners internationally.

Initial production ranged from 66,000 barrels of oil per day (bopd) to 88,000 bopd, before levelling off at 70,000 bopd by the end of 2011. These targets did fall

Jumper fabrication at Technip yard. (Photo courtesy of Technip)

This report was prepared by Angela Harmantas, Pavlina Pavlova and Tom Hurst of Global Business Reports. For more information contact info@gbreports.com.



short of expected targets of 120,000, but according to Gayheart Mensah, communications manager at Tullow Oil, the primary reason relates to a technical difficulty with the oil well completion design. "The consequence of this was a situation in which we were experiencing less-than-expected flow from several of the wells. Re-designs have been successfully carried out, and we are currently monitoring the affected wells to ensure the positive impact of these changes," he says.

With Phase 1 complete, and all 17 wells brought onstream, attention is now focused on what sort of exploration potential remains in the region. Based on current proven reserves, production from Jubilee Field is expected to peak from 2013-2015 at 120,000 bopd and last for 20 years.

The next phase of development, Phase 1A, consists of eight new wells: five producers, three additional water injectors and the expansion of the subsea network. The first of the Phase 1A wells is scheduled to come onstream by mid-2012, with production expected to average between 70,000 and 90,000 bopd by the end of the year.

Additionally, in August 2011 at the West Cape Three Points block, light oil was discovered at the Akasa-1 well. The reservoirs encountered are similar in age to those discovered at Jubilee Field, and the oil



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samples recovered indicate 38 degrees API gravity. The West Cape Three Points operator, Kosmos, remains in discussions with the government of Ghana in relation to further appraisal and development plans for the Mahogany, Teak, Banda and Akasa discoveries. "The Jubilee site has unique geological characteristics, and we are convinced that equivalent geological plains can be found in other parts of the world and can reap similar rewards," says Tullow's Mensah.

Regulatory framework

The regulatory framework governing Ghana's offshore petroleum industry is both extensive and complicated, falling under a variety of domestic laws and international maritime treaties. This is compounded by



Deep Blue, the world's largest purpose-built ultra-deepwater pipelay and subsea construction vessel, anchored off the coast of Ghana. (Photo courtesy of Technip)

the fact that “Ghana was not prepared in advance for the discovery of oil, so the country is still trying to develop its resources to meet the demand,” says Hon. Joe Oteng-Adjei, Ghana’s Minister of Energy.

The primary administrative responsibility for Ghana’s offshore fields lies with the GNPC, which holds both commercial and regulatory responsibility. The GNPC acts as a commercial, or private, entity with which international oil companies (IOCs) must enter into a Petroleum Agreement. Under a typical agreement, GNPC takes a 10% initial interest, with an additional 5% interest should the project become commercial. Exploration periods last up to seven years, at which point the contract can be renegotiated.

The government takes its royalties in the form of oil, which the GNPC then sells on the market. For example, the overall total output for the first year of operation was 24,451,452 barrels. Ghana’s share, made up of royalties, carried and participation interests, was 3,930,189 barrels representing 16.08%.

With growth, challenges

If Ghana succumbs to the resource nationalism that has grabbed so many countries over the past couple of years, there is less chance that it will attract the necessary explorers. Ghana’s decision late last year to re-examine the fiscal arrangements of the mining sector could well be a sensible decision in line with the International Monetary Fund’s (IMF) advice to raise taxes. Yet some are seeing it as a populist measure driven by the upcoming elections.

In 1977, *The Economist* coined the phrase “Dutch Disease” to describe the effect that the 1959 discovery of gas had on the Netherlands; notably, the decline of other economic sectors caused by an influx of foreign capital that strengthened the local currency and made these other sectors less competitive against foreign imports.

Fear of Dutch Disease affects all sub-Saharan African nations to varying extents. With some commentators saying that Australia is falling into this trap, one is forced to wonder how Ghana, with industries such as manufacturing much less developed, will cope.

Other challenges may also arise. Neighboring Nigeria, although arguably turning a corner recently, is famous for the sectarian strife brought about by the lack of benefits provided by the oil industry to its local communities. There have already been signs of frustration in Ghana that the number of jobs expected has not materialized.

Avoiding Dutch Disease

Ghana is much better positioned than its neighbours to cope with these issues. Its GDP-per-capita, which stood at \$2,500 in 2010, nonetheless outperforms its neighbors and even regional giant Nigeria. The proper-

tion of its population living below the national poverty line has fallen from 51.7% in 1992 to 39.5% in 1998 and 28.5% in 2006, and undoubtedly it has fallen further since then. In 2011 it ranked 69th in Transparency International’s Corruption Perceptions Index, tied with the European nations of Italy and Slovakia and above Latin American powerhouse Brazil.

The government has taken clear steps towards responsible management of the Jubilee discoveries with the Petroleum Revenue Management Act, which mandates the distribution of petroleum revenues and codifies clear reporting methods throughout multiple levels of government. “Parliament has already passed a law that clearly states that 20% of oil and gas revenue will go towards education and 50% will go towards sustainable development, which is an important issue that Nigeria did not establish,” says Anthony Matthews, managing partner at Matthews Consult, a corporate law

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The government seeks to achieve a minimum of 90% local content and local participation in all aspects of the oil and gas industry value chain within a decade.

firm in Accra that works with a number of oil and gas clients.

The common symptoms of Dutch Disease have not yet materialized. Whereas concerns about the disease in Australia have been partly fueled by the rapid appreciation of the Australian dollar against the U.S. dollar since 2009, the Ghanaian Cedi has depreciated against the U.S. dollar in the same time period.

Ghana also benefits from having a diverse economy. Fluctuations in oil prices will not have as great an impact on its GDP as, for example, they would in Angola, whose economy is dependent on oil revenues to the tune of 97%. “Ghana has one of the most diversified economies in Africa, relying not solely on diamonds or copper, but a combination of gold, oil, cocoa and agriculture,” says Benjamin Dabrah, managing director at Barclays Bank Ghana.

While the industry may not be providing employment at quite the rate that some hoped, local content laws have been a key agenda for the Ghanaian government since the very beginning. The government seeks to achieve a minimum of 90% local content and local participation in all aspects of the oil and gas industry value chain within a decade. The policy framework has proposed specific targets for direct employment in oil and gas exploration and production. At the management level, 50% of the management staff must be Ghanaians from the start of petroleum activities of the licensee, with the percentage increasing to 80% within five years.

Success stories abound. “The Jubilee Fields project was completed with 45,000 Ghanaian man-hours without one incident onsite or one lost-time injury,” says Stephane

Sole, country manager at Technip, a French company that provided engineering and construction services at Jubilee.

“Foreign companies that come to Ghana must demonstrate that they are making a long-term commitment to operations in the country and are not here just to make short-term gains,” says Phyllis Christian, chief executive officer and managing consultant with ShawbellConsulting, which provides legal and business advisory services to companies in Ghana. “This is particularly relevant to the oil and gas sector as we have seen many countries that have discovered oil and been exploited by multinational companies that have at best limited interest in benefiting the local population. A company that becomes a trusted brand will be more successful than one that is not.”

Finally, in terms of attracting investment, Ghana scores well. Its rank on the Heritage Institute’s Index of Economic Freedom has increased dramatically over the past five years and is now above the



**Phyllis Christian, chief executive officer,
ShawbellConsulting**

OilandGasInvestor.com • August 2012

“Ghana’s energy consumption will continue to grow and gas will become an important source of power. This presents challenges but also represents an excellent opportunity for investors to come in and monetize gas power generation in Ghana,” says Kweku Awotwi, chief executive officer, Volta River Authority.



world average. According to Hon. Joe Oteng-Adjei, Minister of Energy, the political stability that the country enjoys has increased the amount of investment into the country. “Ghana will be able to raise the necessary investment that the country requires if it continues to maintain an attractive investment climate with clear regulations for investors.”

The enabling industry

For the oil and gas industry to benefit Ghana in a significant, sustainable and optimal way, it must not only be a success in itself, but must also involve and support other segments of Ghana’s economy.

A good example is the power sector. The rapid progression to full production has prompted a boom in the oil and gas industry over the past five years, increasing pressure on the national power grid’s already stretched system. Ghana’s use of electricity is increasing rapidly, and the current infrastructure does not have the capacity to sustain this growth.

The industry may be contributing to the challenges, but it is also providing the solution. According to Kweku Awotwi, chief executive officer of the Volta River Authority, the company’s expansion plans include using gas instead of hydroelectricity: “The VRA will add 450 megawatts of capacity to Ghana’s national

grid over the next three to four years, and is expected to reach a total capacity of 3,000 megawatts by 2019. To finance this growth, we hope to raise around US\$250 million from commercial buyers by the end of this year. Ghana’s energy consumption will continue to grow and gas will become an important source of power. This presents challenges but also represents an excellent opportunity for investors to come in and monetize

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To maintain this leadership, VRA is expanding its thermal generation capacity to take advantage of Ghana gas and also introducing solar and wind into its portfolio to ensure reliability, sustainability and competitiveness in the West African energy market.

For more information and investment, contact:
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The Takoradi Thermal Power Station is undergoing expansion to increase installed capacity by 110 megawatts through a joint venture with Abu Dhabi's TAQA Energy. (Photo courtesy of VRA)

gas power generation in Ghana.”

Another sector benefiting from oil and gas activity is the financial sector. Since the discovery of oil, this sector's share of GDP has risen from 7.8% in 2005 to 9.3% in 2010. The Ghanaian Stock Exchange saw market

turnover increase 224% in 2010 and its first international oil company, Tullow Oil, listed on it last year.

This is not to imply that non-E&P companies have an easy ride by relying on the oil producers. Now that Phase 1 of production has come to a close, the industry as a whole has entered a quiet period as companies wait until the next phase begins later this year. For service companies, managing growth in order to develop sustainably yet remain responsive to the fluctuations of the oil industry is a major challenge. “The rate of production from oil fields is not reliable and the surges and downturns have an instant impact on our business,” says Soraya Anglow, executive director at Greenline Logistics, a Takoradi-based haulage company. “Many companies will make large investments or diversify their services anticipating growth that never comes.”

Nevertheless, the booming industry offers potential for growth, provided that service companies heed this cautionary note. “The oil and gas sector has enabled our company to grow every year, and Wood & Associates is able to choose clients carefully,” says James Wood, managing director at Edward Mensah, Wood & Associates Ltd., an insurance brokerage.

Other companies are looking to expand beyond the borders of Ghana. “In 2012 we are expanding our operations by opening offices in Liberia and Sierra Leone, where there is active oil and gas exploration,” says Frank Tony Eshun, managing director at Damco, a worldwide provider of freight forwarding and supply chain management services.

As long as the industry can responsibly manage its newfound oil wealth, the future seems bright for the country. The government's Petroleum Revenue Management Act stands as a hopeful sign that, in the years to come, hundreds of millions of dollars in oil revenue will go towards the economic benefit of the entire country. □

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Congreso Mexicano del Petróleo 2012

Actualmente Petróleos Mexicanos por medio de su Corporativo y sus cuatro Organismos Subsidiarios, ha unido los esfuerzos de los congresos y exposiciones petroleras de la Asociación de Ingenieros Petroleros de México, A. C., del Colegio de Ingenieros Petroleros de México, de la Sociedad de Ingenieros Petroleros (SPE), de la Asociación Mexicana de Geólogos Petroleros y de la Asociación Mexicana de Geofísicos de Exploración, para presentar anualmente una versión del Congreso y Exposición Internacional del Petróleo en México.

Este año, la Asociación de Ingenieros Petroleros de México (AIPM), los invita a participar en el Congreso Mexicano del Petróleo 2012, que la Asociación tendrá la oportunidad de organizar en las instalaciones del centro de Convenciones Banamex de la Ciudad de México, del 9 al 13 de septiembre de 2012.

El principal objetivo de este evento es el de: "Proporcionar un foro para el intercambio de ideas, experiencias y tecnologías de vanguardia entre los profesionales de las geociencias y la ingeniería petrolera, los prestadores de servicio y empresas líderes en el ramo petrolero nacional e internacional; para continuar afrontando los retos en la exploración y producción de hidrocarburos en México".

Se espera la asistencia de 5,000 personas entre congresistas e invitados y en la exposición industrial se tiene un estimado de alrededor de 350 compañías nacionales y extranjeras proveedoras de productos y servicios, en un total de 1,000 stands distribuidos en más de 26,000 m² de piso de exposición.

El Congreso Mexicano del Petróleo 2006 realizado en la Ciudad de Cancún, Quintana Roo, marcó la diferencia en relación a otros congresos petroleros, ya que reunió por primera vez a las 5 Asociaciones más importantes en el campo de las geociencias además de contar con el auspicio de Petróleos Mexicanos.



Asimismo, dentro de la Exhibición, la cual estuvo a cargo del Grupo Comunicador Alba, tuvo en los tres niveles del Cancún Center la presencia de 410 stands de empresas nacionales e internacionales como: Halliburton, Schlumberger, Grupo Lico, Veritas, Northern Power, Petrobras, Submarelher, Rosen y Tubacero, entre otras.

Hoy, después de 5 congresos y exposiciones organizadas con este formato, se espera la organización de un evento, sin precedentes en la industria petrolera, ya que las metas fijadas, se vuelven más y más ambiciosas, lo que nos lleva a la organización de eventos cada vez más grandes y con una logística más complicada.

La Exposición Tecnológica del Congreso Mexicano del Petróleo 2012, logrará la interacción entre los congresistas y empresas participantes, originada gracias a la creación del espacio idóneo para el intercambio de nuevas tecnologías y desarrollos inigualables para el mundo petrolero, y encaminada hacia el desarrollo integral del campo petrolero nacional.

Las expectativas para la realización del Congreso Mexicano del Petróleo 2012, no solo son grandes a nivel cuantitativo, sino también en el aspecto cualitativo, ya que el Comité organizador se esforzó especialmente en el armado de un programa técnico de alto nivel, el cual considera ponencias con autores de reconocido prestigio, que abordarán temas actuales y de gran interés en diversas materias.

Grupo Comunicador Alba, compañía encargada de la organización del evento, ha trabajado desde su fundación exclusivamente para la Industria Petrolera Nacional, contribuyendo a su desarrollo, respetando sus políticas y con el mismo compromiso hacia la excelencia, que nos permitirá continuar conjuntamente trabajando para el beneficio de todos los mexicanos.

Hoy, con más de 15 años de experiencia, Grupo Comunicador Alba cuenta con la infraestructura técnica y el equipo humano, necesarios para la realización de cualquier proyecto, con la creatividad y tecnologías adecuadas para ofrecer un servicio de calidad al mejor costo.

