

GNPC Chief on TEN Development

On August 18, 2016, Ghana saw Tullow Oil and its partners formally open the production valves to flow oil and gas in the Tweneboa, Enyenra, and Ntomme fields, or the TEN fields, as it is better known. The Ghana National Petroleum Corporation (GNPC) played a vital role in the identification, mapping of the leads and prospects even before the first discovery of the three fields was made.



Alexander Kofi

In an exclusive interview, GNPC Acting Chief Executive Officer, Alexander Kofi Mensah Mould told *Petroleum Africa* that this milestone has been achieved largely in part, by the efforts of GNPC playing its role as National Oil Company (NOC). Way before the current operator and partners were awarded the block, GNPC had carried out extensive data acquisition and consolidation with vintage ones and had identified the leads and prospects that has now become the TEN field. This data on the offshore area, was used in a marketing drive by the Corporation which attracted investors, as well as Tullow Oil and its partners to the petroleum industry in Ghana.

The prospects and leads identified enabled the State and GNPC to negotiate from an informed position during the contracting process with the partners. The data set was also foundational to the work of Tullow and its partners leading to the discovery, development and successful startup of the TEN field in August 2016.

According to Mr. Mould, “GNPC also played critical roles in the exploration, appraisal and the development concept selection.” This led to the successful submission and approval of the Plan of Development to Ghanaian authorities in May 2013.

The underlying principle of GNPC as an NOC was to protect national interest, at the same time, creating the right environment for a fair return for investors such as Tullow Oil. This GNPC pursued by ensuring that the TEN Plan of Development had national interest at the fore and also had enough offerings for the partners to develop the field. GNPC also ensured that the operator and partners committed to creating opportunities for Ghanaians to gain experience and develop skills. This all combined to a successful development of the project.

“As partners, we collaborated in achieving a development concept that will optimize oil and gas production,” Mr. Mould said.

The full field development consists of 24 wells in total, a combination of water and gas injection, as well as production wells which are connected to the FPSO through subsea infrastructure. Ten (10) wells were required for the partners to achieve first oil.

The bulk of the subsea work was carried out by a consortium made up of Technip and Subsea7 (TS7) starting in the second half of 2015.

Mr. Mould continued that regarding local participation, “GNPC leveraged on the TEN project development to convince its partners to agree to some level of engineering, fabrication and construction of some major components of the field development infrastructure such as FPSO spools, suction piles, mud mat, jumpers, sleepers, gas export manifold, assembling and testing of 23 Christmas trees etc... by local Ghanaian companies and personnel in Ghana.”

“TEN is Ghana’s first oil and gas project where important FPSO and subsea production components have been fabricated in-country. The total local content involvement in-country exceeded the regulatory threshold of 10%,” he said.

One of the most important of the subsea parts, the gas export manifold, was manufactured in Takoradi by Belmet7, a JV between Belmet Ghana and Subsea 7. The highly technical piece of subsea equipment, comprising of a series of valves, pipes and connectors, was the first of its type to be built in Ghana, marking a step-up in the complexity of oil and gas work undertaken in-country, according to Tullow. At the



TEN Development FPSO Prof. John Evans Atta Mills

peak of activity, 90 workers were employed on the manifold fabrication, 90% of whom were Ghanaians. The manifold was completed ahead of schedule in June 2016.

The FPSO for the TEN development, the FPSO *Prof. John Evans Atta Mills*, has a capacity of 80,000 bpd and gas processing compression capacity of 170 MMscf/d. In 2017 the project is expected to reach its peak crude production plateau and begin gas exports. However, the gas export from the field will reach plateau in 2018, when production from the main non-associated gas reservoir, Tweneboa, is added to the production from the TEN field.

Mould said the corporation led the process of negotiating the agreed price of TEN associated and non-associated gas. “This major effort resulted in the reduction in TEN associated gas price from the initial proposed price of \$9.50/mmBtu to the achieved price of \$0.5/mmBtu, and agreed \$3.00/mmBtu for non-associated gas. The reduced price was a result of the GNPC led optimization of the whole TEN field development concept, drilling and completion of wells which resulted in a significant savings in capex. The price reduction resulted in savings of \$2.9 billion over the field life through reduction in gas price alone. The effect of the reduced TEN gas price is that it would push down the aggregated national gas price which would positively impact the cost of power generated from gas in the Country.

The TEN and Jubilee gas exports will be tied into the Ghana National Gas Company (GNGC) offshore pipeline, which will send the gas to the Atuabo gas processing plant in Ghana’s Western Region. “GNPC also secured the option to further reduce the TEN gas prices by financing 40% of the \$75 million TEN-to-Jubilee interconnection. GNPC achieved cumulative cost savings of \$3.83 billion for the State over the entire field life.

The reduced gas price were not the only savings that were initiated by GNPC. “Through GNPC’s discussion and negotiations with the TEN development partners, the final approved development cost was reduced to \$5.077 billion, resulting in a development cost savings of about \$880 million to the State” the GNPC chief told *Petroleum Africa*.

The addition of TEN production to Ghana’s capacity is a big boon for the country. The fact that it was brought onstream on schedule and on budget can be attributed in part, to the leadership and optimization prowess of GNPC as a national oil company, lending credence to why the firm has oft been a contender in *Petroleum Africa*’s NOC of the Year awards. By taking a hands-on approach to the TEN project GNPC has proven that a state company can leave a tangible legacy in building its human capital and operating competencies, as well as influencing the development while creating value in mega energy project such as TEN. Mould summed it up best, “Through the active involvement of personnel seconded from GNPC and continuous close collaborations with our partners, the project has been delivered on schedule and within budget.”

The TEN Project is a joint venture operated by Tullow Oil. Interests in the partnership are: Tullow Oil, 47.185%; Kosmos Energy, 17%; Anadarko Petroleum Corporation, 17%; Ghana National Petroleum Corporation, 15%; and PetroSA with 3.815%. 