

EA02

Keynote Presentation: On-shore and Off-shore Exploration History and Discoveries to Date in Tanzania

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SUMMARY

Five phases of exploration history have evolved in Tanzania since in the 1950s. Phase One (1952-1964) had BP and Shell companies conducted exploration in coastal basins and the Islands. Extensive geological work was conducted including drilling of more than 100 stratigraphic shallow boreholes, gravity, aeromagnetic, seismic reflection and refraction surveys. Four wildcats were drilled, one each on Zanzibar, Pemba, and Mafia Islands and in the Mandawa Salt Basin. The second Phase (1969-1979) is associated with large regional, on and offshore, seismic surveys were conducted. During that period three onshore and two offshore wells, including the significant gas discovery at Songo Songo in 1974 were drilled. Third Phase (1980-1991) recognized drilling of more wells including the Mnazi bay gas discovery well as a result of good oil price. Fourth phase (1992-2002) recorded low level of exploration activities. The current Phase V (2005 to 2015) has registered extensive geophysical surveys to include 2D and 3D marine seismic surveys. About 27 deep sea wells among with the appraisal wells were also drilled. Offshore discoveries encountered natural gas amounting to about 47.08TCF on the mean side and 8TCF on-shore. This indicates gas already been discovered in Tanzania to be approximately 55.08TCF to date.

Introduction

Exploration of Oil and Gas in Tanzania started since 1952, with the first natural gas discovery made in 1974 in Songo Songo, Kilwa district in Lindi Region. It took two decades to realise natural gas discovery in Tanzania. Eight years later, in 1982, the second discovery was made in Mtwara Region at Mnazi Bay. The commercialisation of Songo Songo and Mnazi bay in 2004 and 2006 respectively increases both on-shore and off-shore oil and gas exploration activities by multinationals in Tanzania.

The history of Oil and Gas in Tanzania is categorised in five phases: Phase I: 1952- 1964, Phase II: 1969-1979, Phase III: 1980-1991, Phase IV: 1992-1999, and Phase V: 2000 to-date.

Phase I: 1952-1964

The Phase was characterised by a concessionary system where British Petroleum (BP) and Shell were awarded concessions along the coast. This includes the Islands of Mafia, Pemba and Zanzibar. The drilling of four wells (Mafia-1, Zanzibar-1, Mandawa-7 and Pemba-1) did not discover any commercially viable hydrocarbon. British Petroleum (BP) and Shell left.

Phase II: 1969-1979

This phase was characterised by two important events in the history of Oil and Gas in Tanzania. First was the establishment of the State owned Company, the Tanzania Petroleum Development Corporation (TPDC) in 1969, and second was a significant discovery of gas at Songo Songo in 1974. After the establishment of TPDC, the first Production Sharing Agreement (PSA) was signed between TPDC and AGIP (General Italian Oil Company) on the concessions that were being managed by BP/Shell during the first phase.

In 1973, AGIP partnered with AMOCO and drilled five wells (Ras Machuis-1, Songo songo-1, Kisangire-1, Kisarawe-1, and Kizimbani-1). This Phase led to a significant gas discovery at Songo Songo in 1974. The discovery was confirmed by TPDC in its three well programme (Songo songo 2, 3 and 4) implemented from 1975-79.

Phase III: 1980-1991

The beginning of this phase saw the enactment of the Petroleum (Exploration and Production) Act of 1980, and the discovery of gas in Mnazi Bay-1 well by AGIP in 1982.

During this Phase, more drilling occurred being a result of the enactment of the Petroleum Act and the effect of high oil prices in early 1980s. The state company, TPDC, involved in the development of Songo Songo (Songo songo wells 5, 6, 7, 8 and 9), drilling of three wildcats wells at Kimbiji East-1 and Kimbiji Main 1 and TanCan-1 in 1982-83 as well as carried out several seismic programmes. Shell was licensed areas of Ruvu, Selous, Mandawa, and Mafia. IEDC (International Economic Development Corporation) were given Tanga and Ruvu, Elf (French Company) was licensed areas of Mafia and Nyuni, AMOCO were licensed areas of Rukwa Basin. About 16 wells were drilled during this Phase out of which only four (4) encountered natural gas.

Phase IV: 1992-1999

The fourth phase was characterised by little exploratory activities in its first years, lack of active concessions, and initiatives by Government to further develop the Songo Songo gas field. TPDC and TANESCO (Tanzania Electric Supply Company), in collaboration with Canadian companies, Ocelot and Trans-Canada Pipelines, started to actively engage the Songo Songo gas field development, transmission and utilization of discovered natural gas.

In this Phase, exploration licenses in 1995 were issued in the coastal basins to international companies including Dublin-Tanganyika Oil Company, Exxon Mobil, Shell, KUFPEC (Kuwait Foreign Petroleum Exploration Company), and Amoco which accelerated the exploration activities. Dublin-Tanganyika Oil Company drilled two wells (Gamma-1 and East Lika-1) in the Mandawa Basin in 1996/97. Exploration agreements were signed between TPDC with Canadian companies Antrim Resources for Zanzibar and Canop World-wide for Bigwa Mafia area, and Ndovu Resources of Australia for Nyuni Island. Twelve wells were drilled during this phase. The onshore petroleum operations have realised 56 drilled wells with an estimated volume of natural gas potential of about 8TCF.

Phase V: 2000 to-date

This Phase is characterised by Deepsea operations which have recorded a significant success in terms of discoveries. Several companies were licensed to operate during this period. These include Petrobras (Block 5, 2004), Ophir Energy (Block 1, 2005), Ophir Energy (Blocks 3, 4, 2006), Petrobras (Block 6, 2006), Statoil (Block 2, 2007), Dominion (Block - 7, 2007), Petrobras (Block - 8, 2012). A total of 18 wells have been drilled by Statoil and 16 by BG since 2010 with Gas Initial in Place of about 47TCF in 2015. To date, about 90 wells have been drilled in Tanzania since 1952 from onshore and offshore basins. Discussion between Government and gas developers are underway on how to commercialise the deepsea gas through LNG project.