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Successful Lithology and Fluid Prediction based exploration in East Africa, Tanzania, Block 2

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In 2007 Statoil ASA was awarded the rights to explore for hydrocarbons in Block 2, offshore Tanzania. At that time no deep water wells were drilled in the area. From being unexplored, deep water offshore Tanzania has over recent years turned into a prolific gas province, with great exploration success both in Block 2 and in neighbouring licenses.

Since 2012 Statoil ASA and license partner ExxonMobil Exploration and Production Tanzania Limited have had two drilling campaigns with a total of 14 exploration and appraisal wells which have resulted in 8 announced discoveries. The total in-place volume discovered in Block 2 now exceeds 20 tcf of gas.

This talk will provide some of the exploration highlights, explaining successes and failures. We will present how the geological understanding of the area has evolved over time, and demonstrate the impact that state of the art geophysical workflows have in fluid and lithology prediction.

Extensive use of AVO attributes like coloured inversion and extended elastic impedance rotations enabled de-risking of prospects and thereby maturation of prospects into drilling candidates very efficiently. Interpretation of angle stacks and pre-stack gather analysis has become essential to understand prospectivity. The widespread application of advanced seismic interpretation techniques has provided involved explorationists a true challenge and has given an incredible learning curve. The outcome will provide memories for a life time, as LFP based exploration in Block 2 has been a great success delivering a string of world class discoveries.

