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A Recipe for Exploration Success in the 21st Century - Exploration Ingredients that Led to BP’s Deep Raven Success Story

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SUMMARY

This oral presentation discusses a holistic set of ingredients used to deliver deep water gas exploration success in the Nile Delta of Egypt. An exemplary of BP’s renown exploration method as applied in North Africa.
This presentation pulls together a holistic view of BP’s successful search for deep gas in the Nile Delta, both as an example of the BP work processes that underpin its renowned exploration success worldwide, as well as the relationships and organization that led to a Egypt / BP win-win for LNG gas export from the Nile Delta.

The Nile Delta of Egypt has enjoyed a sustained 10 year period of recent exploration success, with the discovery of over 50 Tcf new resources. BG, BP and ENI have all been major foreign operators involved with Egypt to deliver the confidence to move forward and commence LNG gas export to Europe and beyond. In BP’s case, four key elements were combined to provide exploration success:

**Clarity of exploration strategy, alignment to national energy aims**
Since 2000, BP has had a strategic focus on the search for deep condensate-rich gas under the offshore Nile Delta. In its focus, BP has been careful to align its goals with Egyptian authority aims to develop its emerging major gas resource potential. This builds on a long history of mutual respect & working relationships that have been developed over 40 years of Gulf of Suez and onshore oil exploration.

**A winning team**
Critical mass underpins any successful exploration effort, directing resources to tackle focused work in reducing risk and validating gas exploration & development concepts. BP Egypt has a large in-country multidisciplinary team comprising technical experts with global experience combined with young emerging technical and leadership national talent within a strong coaching and mentorship work environment. Five key teams have been combined to deliver success: a regional team to assess the best places to explore for gas in Egypt from a bottoms-up perspective; a dedicated prospects team to spend quality time minimizing the risk profile on a wide prospect inventory alongside a dedicated well planning team; a strong commercial team links to both maximize economic value and assess project commercial drivers and last, but not least, a dedicated seismic acquisition and processing team to deliver the right quality of seismic in order to place the Nile prospects at the top of BP exploration options worldwide.

**The application of BP’s proven exploration methodology**
Over the last 10 years BP has built much of its reputation on achieving continued exploration success in reserves replacement. How this has been achieved is through a carefully crafted exploration methodology where plays and prospects from all over the world are compared using prescribed clear and common exploration processes that include understanding how the bottom’s up petroleum play potential fits with top down seismic attribute qualities. Key aspects of this “quality through choice” process are shown relative to the successful Raven prospect example in the Nile Delta.

**The seismic ability to see & explore deep in the Nile Delta**
Messinian evaporates severely degrade the deep seismic illumination across much of the Nile Delta such that very low risk DHI supported exploration in the overlying Pliocene section is absent for the deeper play potential. Over the last five years a dedicated seismic acquisition and processing team have been at the forefront of the application of new large exploration 3D acquisition techniques and have been able to dramatically improve the deeper seismic image to a point where prospect drill-out is finally underway. Key to delivery of Raven exploration success has not only been the well placement but the seismically derived pore pressure prediction to allow the deep highly overpressured reservoir targets to be reached.