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Exploration in a Low Price Environment
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Summary

Over the past decade, oil prices have fallen from an all-time high of over $140 per barrel in 2008 to around $55 per barrel today. Not surprisingly, this has resulted in lower corporate earnings and a decrease in upstream capital expenditure by IOCs, with the number of frontier exploration wells drilled at the lowest level in years. At the same time, commercial success rates in global deepwater exploration drilling has also steadily fallen over the past 5 to 10 years, from 20% to less than 5%. It is evident that in the current economic environment, oil and gas companies need to significantly improve exploration performance in order to remain competitive. It is essential that exploration and development decisions are underpinned with a robust understanding of the subsurface. New technology is the life blood of our industry and must be constantly developed to achieve exploration success.
ABSTRACT

Over the past decade, oil prices have fallen from an all-time high of over $140 per barrel in 2008 to around $55 per barrel today. Not surprisingly, this has resulted in lower corporate earnings and a decrease in upstream capital expenditure by IOCs, with the number of frontier exploration wells drilled at the lowest level in years. At the same time, commercial success rates in global deepwater exploration drilling has also steadily fallen over the past 5 to 10 years, from 20% to less than 5%. It is evident that in the current economic environment, oil and gas companies need to significantly improve exploration performance in order to remain competitive. It is essential that exploration and development decisions are underpinned with a robust understanding of the subsurface. New technology is the life blood of our industry and must be constantly developed to achieve exploration success.

ExxonMobil’s exploration strategy is founded on Genetic Basin Analysis - an integrated full systems approach to the fundamental processes of how sedimentary basins form, fill and evolve, in order to predict the distribution and quality of regional hydrocarbon systems, and ultimately to identify the highest quality acreage. These predictions require calibration, often in areas where little data exists. As an example, the successful application of leading-edge geochemical technologies can now enable us to derive source information, which in turn allows us to test regional models. The application of integrated technologies for data collection and processing builds a more comprehensive picture of regional hydrocarbon systems. Seismic calibration is continually being enhanced by advances in technology. Compute intensive leading-edge Full-Wavefield Inversion uses the iterative full-physics approach to resolve geological features at the seismic scale, and creates superior and more detailed predictions of the sub-surface.

ExxonMobil has a proud history of technical innovation throughout the business cycle. Such innovation has been deployed across the globe, including here in Africa, where we have been active for more than 100 years. IOCs must work with host governments and NOCs to ensure the collective desires, strengths and capabilities come together to maximize value. Our mutual success is directly tied to our ability to listen and to understand each other’s needs, recognize one another’s strengths and build long term partnerships founded on value creation and fair and equitable sharing. When this is achieved, IOCs are incentivized to invest and to deploy their proprietary technologies, project and risk management expertise and financing capabilities.