Exploration creativity in the golden age of Super Basins

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Many Super Basins were thought to be on their way out of sustainable production. Key enablers that have made possible old basins reaching new production peaks include hydraulic fracturing in horizontal wells and enhanced seismic imaging. Each basin has unique geoscience architecture. A common scheme includes multiple rich source rocks located beneath thick sedimentary packages containing many reservoirs and seals.

Onshore basins like the Permian (in Texas and New Mexico) are dominated by perfecting multi-lateral multidirectional drilling, finding the right fluid mix, varying hydraulic fracture stages, prop materials, and well length in the realization of unconventional resources. These basins are benefiting from multi generations of engineering refinements and breakthroughs.

Other basins, many offshore, are benefiting from improved seismic imaging to unlock deeper or hidden basins, sedimentary packages previously obscured for various reasons. Many of the new resources are being found below salt or around basement highs. Examples include GOM, Brazil, and the European North Sea. Some basins benefit from both engineering and seismic. In all cases, understanding the geoscience architecture is key to success. This is also important in conjugate margins plays.