

## **Emerging Shale and Tight-Sand Plays, Perth Basin, Western Australia**

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### **Abstract**

Exploration of shale petroleum in the Perth Basin was driven by the rapid increase in shale gas production in the US after 2005. Since the early 70s, hydrocarbon trapped within the source rocks was known and addressed in many publications, but the production of these hydrocarbons was proved when US gas reserves globally rated the highest in 2009. Production from these reservoirs has changed the position of the US from importer to exporter; it achieved the world's highest oil and gas production in 2014. In shale reservoir, trapping mechanisms are typically subtle and cover large basinal areas; the timing of charge versus trap formation is not as critical as it is in conventional reservoir systems. The US achieved production from shale reservoirs by using a combination of horizontal drilling and hydraulic fracturing. The geological understanding and petroleum prospectivity of the Perth Basin is gradually growing with regard to tight and conventional reservoirs. The Perth Basin has a well-developed infrastructure to explore and exploit shale petroleum resources.