

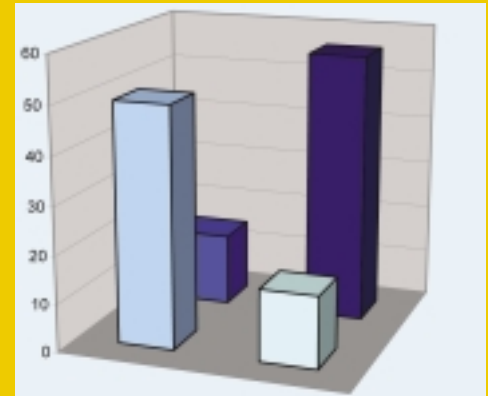
The deep-water success

Deep-water (>300m) oil production in the Gulf of Mexico began in 1979 with Shell's Cognac field that was discovered in 1975, 30 years ago. Since then, deep-water exploration and production has grown with tremendous advances in technology. As a result, deep-water oil production grew from less than 100,000 bopd in the early 1990s to approximately 1 million bopd in 2004. The trend is the same for deep-water gas production that increased more than tenfold between 1992 and 2002.

Minerals Management Service (MMS) has estimated that the Gulf may contain as much as 136 billion barrels (21 billion m³) of oil equivalents, shallow- and deep-water (>200m) combined (compare graph). More than 40% may come from deep-water. In comparison, according to BP Statistical Review of World Energy, the proven oil and gas reserves of the United States are slightly in excess of 60 billion barrels oil equivalents.

The overall oil production in the Gulf of Mexico (shallow- and deep-water combined) is currently 1.5 million barrels of oil per day (bopd), which is roughly equivalent to the daily output in countries like Brazil and Nigeria. The larger part of the oil production is now from deep-water with approximately 1 million barrels of oil being produced every day. Shallow-water production is on decline and is now only slightly in excess of 500,000 bopd. Deep-water production overtook shallow-water production in 2000.

Based on incentives under the President's Energy Plan, oil production is set to increase



The back row (dark blue) shows deep-water Gulf of Mexico reserves already discovered (left), in billions of oil equivalents, and what remains to be discovered (right). The front row (light blue) illustrates that most of the shallow water oil and gas have already been discovered. The data are from the Minerals Management Service.

to 2 million bopd next year, and it could rise further in the years to come according to predictions made by MMS. This increase is expected to come from deep-water plays.

Exploration last year proved another 12 deep-water discoveries in the Gulf of Mexico. According to Chris Oynes, Gulf of Mexico MMS Regional Director, "some of these new deep-water discoveries are opening up new areas for natural gas development in the eastern Gulf." The 2004 success comes in addition to the 13 discoveries in deep water in 2003, 17 in 2002 and 32 in 2001. The exploration success rate has been estimated to 25 percent.

CONVERSION FACTORS

Crude oil

1 m³ = 6.29 barrels
 1 barrel = 0.159 m³
 1 tonne = 7,49 barrels

Natural gas

1 m³ = 35.3 ft³
 1 ft³ = 0.028 m³

Energy

1000 m³ gas = 1 m³ o.e.
 1 tonne NGL = 1.9 m³ o.e.

Numbers

Million = 1 x 10⁶
 Billion = 1 x 10⁹
 Trillion = 1 x 10¹²

Supergiant field

Recoverable reserves > 5 billion barrels (800 million Sm³) of oil equivalents

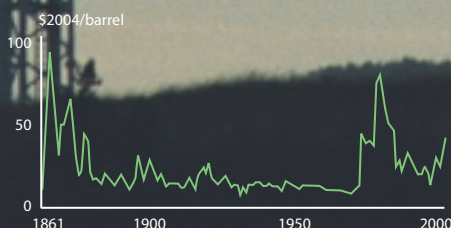
Giant field

Recoverable reserves > 500 million barrels (80 million Sm³) of oil equivalents

Major field

Recoverable reserves > 100 million barrels (16 Sm³) of oil equivalents

Historic oil price



The geological setting of the Gulf of Mexico is unique as the majority of the producing reservoirs are in young sedimentary rocks. Minerals Management Service says that 99% of the oil and gas reserves are in Miocene, Pliocene (Upper Tertiary/Neogene) and Pleistocene (Quaternary) formations. The geological province is also quite unique in terms of discovered and undiscovered oil and gas resources, which according to the same source, is more than 100 billion barrels of oil equivalents.