

Oil and Gas Investment Overview of Iraq

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Key Stats and Figures

Proven Oil Reserves:

115 billion barrels

Estimated Unproven Reserves:

45 to 215 billion barrels

Proven Gas Reserves:

112 trillion cubic feet (TCF)

Estimated Probable Gas Reserves:

275 to 300 TCF

2008 Production:

2.4 million barrels per day (BPD)

2018 Target Production:

6 million BPD



Photo credit: Thomas Hartwell/USAID

Sector Overview

Iraq is blessed with vast reserves of oil and natural gas, and is one of the most promising, still largely undeveloped sources of hydrocarbon resources in the world. After decades of underinvestment due to conflict and sanctions, Iraq is actively seeking international investment and expertise to help in the development of its oil and gas sectors. From efforts to harness associated gas from southern oil fields to the launching and negotiation of Iraq's first post-war oil and gas bid rounds, Iraq has begun the process of substantial reengagement with investors from around the world.

Oil

There are 115 billion barrels of proven reserves in Iraq, with experts estimating that there may be an additional 45 to 215 billion barrels of probable and possible reserves. Iraq's 115 billion barrels of proven oil reserves are found in 80 fields, of which only 17 have been significantly developed.

Approximately 75% of the proven reserves are concentrated in several super-giant fields in the southeastern part of the country near the borders with Kuwait and Iran, with an additional 20% located in the northern part of the country near Kirkuk.

Despite its massive potential, Iraqi production averaged 2.4 million bpd in 2008, well below levels that might be expected given Iraq's reserves, and still lagging behind pre-war capacity of 2.8M bpd. The majority of this production comes from just three fields: Kirkuk, North Rumaila, and South Rumaila.

Gas

Iraq is similarly rich in natural gas, with 112 TCF in proven reserves, the tenth largest in the world, and an estimated 275-300 TCF in probable reserves. Of Iraq's proven reserves, roughly 70% are located in the southern part of the country, mostly in associated fields. Roughly 20% of Iraq's known gas reserves are non-associated, primarily in several fields in the northern part of the country.

Gas production has increased since 2003, but Iraq's dry natural gas production of approximately 105 billion cubic feet (Bcf) in recent years is still well below the peak of 215 Bcf in 1989. The Ministry of Oil (MoO) estimates that 60% of associated natural gas is flared due to the lack of infrastructure for utilizing the resources for consumption and export.

Midstream and Downstream Oil and Gas Pipeline

Iraq has an extensive, 4,350 mile-long pipeline infrastructure that is critical for exports of oil and, to a lesser extent, gas. Three primary arteries link to Saudi Arabia, Turkey, and Syria, and a fourth runs internally, called the Strategic Line.

In its present condition, Iraq's export infrastructure can handle about 2.5 million barrels per day. Of this, roughly three-quarters is exported from the Basra oil terminal in the south and the majority of the remainder via the Northern Pipeline leading from Kirkuk to the Turkish port of Ceyhan. Both of these export routes require major upgrades before greater volumes can be achieved.

"Iraq is on a par with Saudi Arabia. It has hardly touched its oil resources."

Tariq Shafiq, former executive director of Iraqi National Oil Company, now president of US-based Petrolog



Refining

Although ten refineries exist on paper, only three, in Baiji (Salah Al Din), Basrah, and Daura (Baghdad), are operating at significant capacity and even these are all working below design capacity. Current domestic refinery capacity is roughly 580,000 bpd.

The Role of Government in Oil and Gas

The Ministry of Oil (MoO) is responsible for the country's oil and gas industry including encouraging investments, operation of infrastructure, planning, and recommending and overseeing policies. The ministry also operates and manages 16 state-owned oil companies and five training centers or institutes focused on the oil and gas industry.

Opportunities for Investment in the Iraqi Oil and Gas Sector

Oil and Gas

The Government of Iraq has announced ambitious plans to boost its oil production and exports over the next decade. The MoO aims to increase production to 4.1 million bpd by 2012 and to 6 million bpd by 2018 and is counting on international investment as the main driver of this increased production. The main avenue for international investors seeking to enter Iraq's oil and gas market is through the MoO's bid rounds.

The first round offered up six oil fields including the super-giant Rumaila field, Iraq's largest, and two gas fields. The round was completed in late June 2009 with the awarding of one field, Rumaila, to a consortium of BP and CNPC. The expected production increase from the Rumaila field is expected to yield a boost in Iraq's total production of more than 70% over current levels. The second bid round, expected in early December 2009, will include several oil and gas fields, including four super giants: East Baghdad, Halfaya, Majnoon, and West Qurna. The southern field of Majnoon is the largest of the new oil fields earmarked for development, with proven reserves of 12 billion barrels.



Photo credit: Tina Hager

Iraq also has vast amounts of unproven reserves throughout the country with estimates ranging between 45 and 215 Bbl. To date, only about 10% of the country has been surveyed for gas and oil deposits, creating a considerable opportunity for investors.

Although less publicized, Iraq's gas is highly coveted, and there remains significant debate over the future of its gas reserves. The desire of European markets and the Nabucco gas pipeline's promoters to secure supply alternatives to Russian gas have made Iraq an attractive target for those promoting rapid development of the country's export

potential. Prime Minister Maliki and other Iraqi officials have clearly expressed the country's willingness and desire to help meet growing global demand for natural gas. However, aggressive export plans will have to compete with domestic demand of gas for electricity production. Although most recent deals have focused on production for domestic use, exports are seen as an eventual long-term objective. In both scenarios, strong markets exist for Iraq's natural gas.

Iraq's oil and gas is also easily extractable. The cost of bringing oil and gas production on line in Iraq is among the lowest in the world. The country's oil lies in enormous fields that can be tapped by relatively shallow wells. Iraqi oil rises rapidly to the surface because of high pressure on the oil reservoirs from water and associated natural gas deposits. More than a third of Iraq's reserves lie just 600 meters below the earth's surface, and some of Iraq's fields are among the world's largest. A barrel of Iraqi oil can be produced for less than \$1.50 USD. This is similar to production costs in Saudi Arabia and lower than virtually any other country.

Mid and Downstream

As Iraq improves its existing infrastructure and new production comes online, the country will need massive investments in the mid and downstream petroleum sector. To substantially increase production, significant investments will be required along the country's export routes, particularly in the Basrah port area and along the northern pipeline between Kirkuk and Ceyhan. In the south, the needs are broad including new pipeline to connect exiting supplies to refineries, the construction of storage facilities, and port expansion. In the north, pipelines will require significant repair, and border stations will require new or renovated

pumping and metering facilities. Iraq also once exported natural gas to Kuwait, and there has been much discussion of developing the infrastructure to allow Iraq to again become a natural gas exporter. In the long-term, a more extensive gas infrastructure will be required in order for Iraq to tap into gas pipeline routes in Turkey that feed European markets.

Iraq is also committed to making massive improvements in its refining capacity over the next decade. Currently, the country's refinery network is outdated and incapable of meeting growing domestic demand. Despite its massive resource base, Iraq relies on imports for a quarter of its refined product demand. However, the MoO's 10-year plan calls for a 150% increase in refining capacity by 2017. To achieve this increase, Iraq is seeking \$15-\$20 billion in investments for the construction of four new refineries and sizeable expansions to the existing Daura and Basrah facilities.

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