

Iraq

Although Iraq has been producing oil for many years, its turbulent history has prevented it from fully tapping the resources in place. Now in the forefront of the energy and geopolitical scene, Iraq appears to many observers to be a key element of the world oil market, now and in the future.

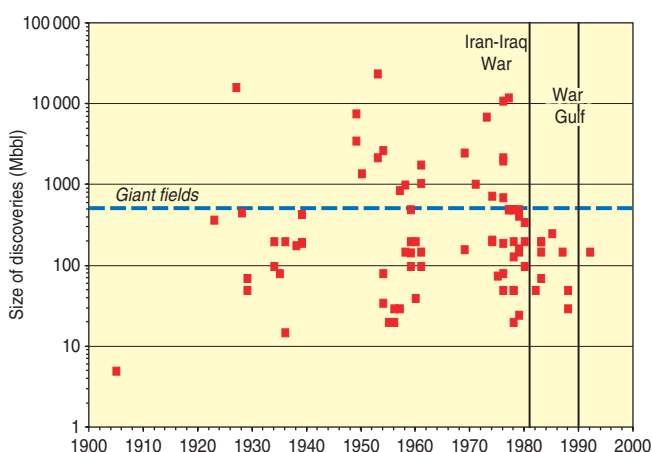
Large, Relatively Undeveloped Reserves

Iraq has been producing oil for many years: in fact, the earliest discoveries date to the very beginning of the 20th century. Kirkuk, the second largest field in the country in terms of reserves and production, was found in the 1920s.

Although there is some uncertainty as to the exact amount of reserves, with evaluations ranging from 78 to 115 billion barrels, depending on the source, all experts agree that they are enormous and place Iraq in the top five in the world.

Nine-tenths of Iraqi oil reserves are concentrated in giant fields⁽¹⁾, of which there are 26, all discovered more than a quarter of a century ago (Fig. 1). Yet in terms of production infrastructure, these fields remain relatively, and in some cases completely, undeveloped. Before the American military intervention last March, national production capacity only drew on about ten fields, including the two largest, Kirkuk and Rumaila.

Fig. 1 Oil discoveries in Iraq



Iraq also possesses large gas reserves, estimated at about 3,100 bcm. Compared to the national oil reserves, this figure might seem small, but it still places Iraq among the top ten world-wide for gas reserves.

(1) Giant field: A field whose ultimate recoverable reserves exceed 500 million barrels.

High Potential for Future Discoveries

Iraq is divided into two large oil provinces: the Arabian platform (200,000 km²) and the Zagros region (45,000 km²). All discoveries made to date in the country are distributed along a NW-SE axis parallel to the boundary between these two provinces.

Although it has been producing for many decades, Iraq has not been explored extensively, to the contrary. Since the end of the 1970s, drilling activity has been virtually nonexistent. The density of discovered fields per unit area remains low compared to neighboring countries: 1 field for Iraq versus at least 2 for its neighbors (and 3 for Kuwait and the Emirates) per 4,000 km².

Nor have the lower depths been explored to any great degree. In the past, drilling stopped at the first layers permeated with oil, without any reconnaissance of deeper formations. Throughout the region, however, there is evidence that the lower depths are oil-rich, both in Zagros province and the Arabian platform.

These elements indicate that the potential for future discoveries remains high. Even more important, the probability of locating giant fields is one of the highest in the world, and that of making onshore discoveries is higher than in any other country.

In the past, the success rate for exploration operations carried out in Iraq was always particularly high. Between the mid-sixties and the mid-nineties, it surpassed 60%. For the Arabian platform in the early 1990s, it exceeded 80%, even without very sophisticated exploration techniques.

IFP estimates undiscovered reserves in Iraq to be 100-150 billion barrels, equal to or greater than current reserves.

An Oil Industry that Needs Rebuilding

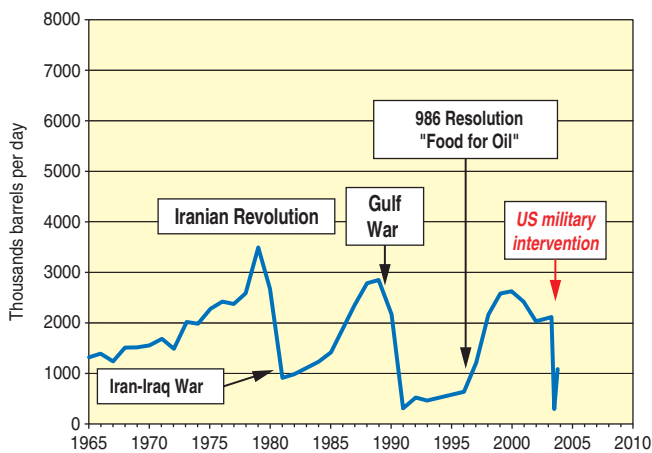
All of the years marked by war and the embargo have inhibited the development of the Iraqi oil sector and the maintenance of its infrastructure.

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Production

Iraqi production has always been relatively low in light of its oil potential (Fig. 2). Until the end of the 1970s, production grew steadily and peaked in 1979 (3.5 Mbbbl/day). When the Iran-Iraq war broke out in 1981, this first stage of development ended. After the war, Iraqi production rallied, only to falter again in 1991 with the outbreak of the Gulf War.

Fig. 2 Iraqi oil production



Source: BP Stat, IEA

In late 1996, the UN voted the “Oil for Food” resolution (Resolution 986), which allowed production to start again; however, it has never been able to return to its 1979 level.

Table 1
Iraqi oil production capacity, end 2001

Field	Production capacity ('000 bbl/day)
In the south:	
South Rumaila	750
North Rumaila	500
Zubair	200
West Qurna	150
Missan	40
Luhais	25
Nahr Bin Omar	10
Majnoon	50 (mid-2002)
In the north :	
Kirkuk	900
Bai Hassan	120
Jambur	75
Khabbaz	30
Saddam	25
Ain Zalah	8
Sufaya	8
Total	2,800

According to estimates, Iraqi production capacity totaled 2.6-2.9 Mbbbl/day prior to the US military intervention. Capacity was primarily located in two areas: one in the south near Rumaila Field and one in the north near Kirkuk (Table 1).

Export Routes

Oil export routes, few in number, were only partially operational at year-end 2002. Iraq numbers several export pipelines and one export terminal.

The main pipeline (initial capacity: 1.6 Mbbbl/day) runs from Iraq to the port of Ceyhan, Turkey. Although other pipes exist, they were being used little or not at all at year-end 2002:

- One pipeline (initial capacity: 700,000 bbl/day) runs towards the Mediterranean ports of Baniyas (Syria) and Tripoli (Lebanon). It is thought that, between 2000 and 2003, Iraq used this pipe to export 150,000-200,000 bbl/day to Syria, outside the framework of the “Oil for Food” program.
- A pipeline (initial capacity: 500,000 bbl/day) to Saudi Arabia, closed since 1990.

Iraq also has the Mina Al Bakr terminal, with an estimated export capacity of 1.6 Mbbbl/day.

At year-end 2002, Iraq’s export capacity did not exceed 2.4 Mbbbl/day, owing to the poor condition of its installations.

Refining

The state of refining plant is also very poor, following years of partial maintenance, aggravated by the recent looting and, in some cases, sabotage that occurred after the fall of the Baasist regime. Iraq has about ten installations including 3 major refineries: Basrah, Daura and Baiji, with total capacity of less than 670,000 bbl/day.

Obviously, it will take time and money to rebuild and develop the Iraqi oil sector. This will be done in two stages:

- First, production, distribution and refining infrastructure must be restored to good working condition. This would enable production in Iraq to rally to 2.8 Mbbbl/day, close to the pre-intervention level.
- Secondly, production could be developed and steadily increased to 6-7 Mbbbl/day. Exploration-production agreements would have to be signed with companies wishing to invest in the country. International companies will have a few basic prerequisites prior to entering into any agreement. For one thing, the contractual framework must be clear. For another, the legitimacy of whatever entity representing the Iraqi power signing a contract with a company must not be subject to dispute. Currently, it does not seem as if these conditions will be met any time soon.

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Exploration-Production: Are Past Agreements Valid?

Before the US intervention in March 2003, a number of agreements were under discussion or had been signed between foreign oil companies and the power in place.

At the end of the 1990s, 10 blocks were offered for exploration in the W-SW part of the country (the Western Desert). At the end of January 2003, 4 of the 10 blocks were awarded to foreign companies: two to the Russian companies Stroytransgaz-oil and Tatneft, and two others to the state companies of Indonesia and India (Pertamina and ONGC, respectively).

The Iraqi state had also prospected for investors to develop certain fields. Between 1997 and first-quarter 2003, eight agreements of this type had been signed with Russian firms, the state-owned companies of other Arab countries and the Chinese company CNPC.

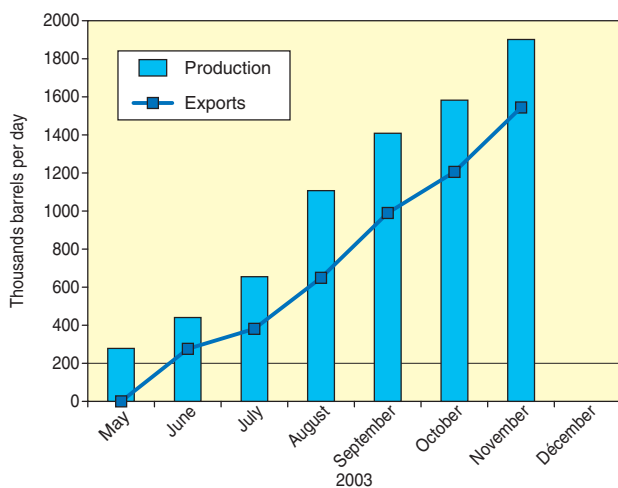
At the same time, there were or had been discussions with other companies from Russia and with Western majors, such as Total, ENI, Repsol, BHP and Shell.

In the future, notice could be given to terminate some of the contracts signed between 1996 and 2003.

The Return of Iraqi Production: Current Situation

Net production increased by a factor of 5 between June and November 2003, when it stood at 1.9 Mbbbl/day (Fig. 3). Over 90% of output originates from fields in the south. Those in the north produce less than 500,000 bbl/day, but nearly half must be reinjected because it cannot be shipped out.

Fig. 3 Iraqi oil production in recent months



Source: BP Stat, AIE

In November 2003, crude exports amounted to 1.55 Mbbbl/day. All exports transited via the south and the Mina Al Bakr terminal. The other key export route, the pipeline to the Ceyhan terminal in Turkey, is still closed and it is hard to imagine that it will reopen before January 2004. This situation is the result of the existing security problems.

The authorities seem confident that, sometime in 2004, production will return to its pre-war capacity.

The biggest export problem is that of exporting routes. Unless the pipeline to Turkey is reopened, exports could rapidly top out at 1.9 Mbbbl/day. It seems that the present capacity of the Mina al Bakr terminal can reach this level.

In order to solve this problem of exporting capacity, the rehabilitation of the Khor al-Amaya terminal (initial capacity: 400,000 bbl/day), which was destroyed during the Gulf War, is planned and could be operational in the course of 2004. The building of a pipeline to Iran is also considered. It will allow Iraq to export 350,000 bbl/day of crude to its neighbor and import in return refined products. Such a solution will permit to supply Iraqi population with refined products which is quite difficult today due to the state of refineries and the frequent sabotages of the pipelines feeding those installations.

Is Iraq Key to the World Oil Market of the Future?

Iraq's return to the oil market is being closely scrutinized. Its impact will mainly depend on how fast its exports grow in the months and years to come.

Here, a distinction should be made between short- and long-term impact.

In 2004, world oil demand is expected to grow by between 1 and 1.1 Mbbbl/day, depending on the source. This represents an increase of 1.3% to 1.4% over 2003, the largest since 1999. North America, where economic recovery is confirmed, and China should be largely responsible for this increase.

At the same time, experts anticipate that non-OPEC oil production will rise by between 1.1 and 1.7 Mbbbl/day, depending on the source (this includes natural gas liquids, OPEC condensates and processing gains) in 2004.

Assuming that the OPEC supply situation remains unchanged, the rise in world oil demand expected in 2004 should be entirely covered by increased production by non-OPEC countries, especially Russia.

In 2003, OPEC crude production averaged 26.5-26.8 Mbbbl/day. Of this amount, 1.3 Mbbbl/day corresponded to Iraq's share for the year. In 2004, the "call on OPEC" should be

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Source: IFP/Comité Professionnel du Pétrole

about the same as in 2003. But Iraq's share of this supply will probably be larger.

Recently, an Iraqi official announced that his country's capacity would return to the pre-intervention level by fourth-quarter 2004. If were to happen, Iraq could boost production to 2.4-2.6 Mbbl/day in 2004.

The OPEC of Ten (not including Iraq) supplied between 25.2 and 25.5 Mbbl/day in 2003; in 2004, its share would fall to 24-24.5 Mbbl/day; in that case, OPEC surplus capacity would amount to 3-3.5 Mbbl/day.

The OPEC of Ten would have to curtail total production, which might well test the organization's present show of discipline and aggravate internal disagreement on various issues. Recently, several countries said they were unwilling to reduce production.

Many believe that it is overly optimistic to expect Iraq to average 2.4-2.6 Mbbl/day in 2004, even if it ought to produce more in 2004 than in 2003.

In the long run, the market will be affected by the rate at which Iraq is able to boost its production capacity. A

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production development target of 6 Mbbl/day by 2010 is often cited.

If this target is met on time and if other expected developments within OPEC take place, total OPEC production capacity would expand to 8 Mbbl/day by 2010. This would cover more than three-quarters, or even all, of the increase in world demand during the same period.

This hypothetical trend would rapidly translate into substantial surplus capacity if output keeps increasing in non-OPEC countries, especially Russia.

But the present situation in Iraq, if it lasts, will not facilitate the development of oil reserves or production build-up.

It will take large amounts of capital to develop production, which implies the involvement of foreign investors. But foreign investors will not be interested until the political situation has been stabilized, an attractive contractual framework has been offered by an Iraqi authority considered to be legitimate, and a minimum level of security has been provided for personnel and infrastructures.

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