

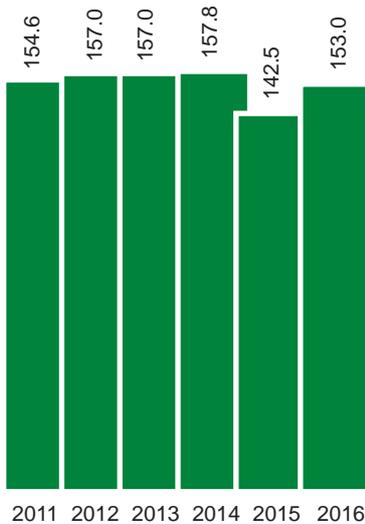
ENERGY COUNTRY REVIEW

Iraq

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Country Review Iraq

Iraq year end oil reserves
Billion barrels

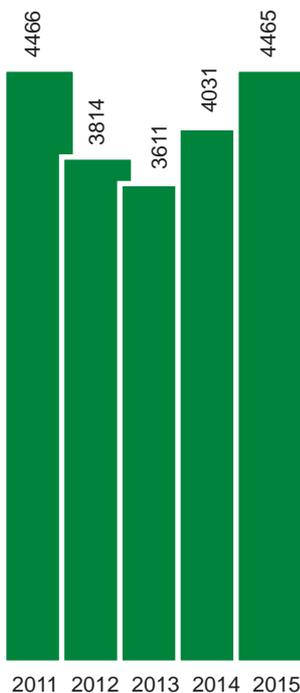


Iraq is bordered by Kuwait, Iran, Turkey, Syria, Jordan, and Saudi Arabia. The country slopes from mountains over 3,000 meters (10,000 ft.) above sea level along the border with Iran and Turkey to the remnants of sea-level marshes in the southeast. Much of the land is desert or wasteland. The mountains in the northeast are an extension of the alpine system that runs eastward from the Balkans into southern Turkey, northern Iraq, Iran, and Afghanistan, terminating in the Himalayas. Average temperatures range from higher than 48°C (120°F) in July and August to below freezing in January. Most of the rainfall occurs from December through April and averages between 10 and 18 centimeters (4-7 in.) annually. The mountainous region of northern Iraq receives appreciably more precipitation than the central or southern desert region.

Iraq is a Founder Member of OPEC.

Iraq is OPEC's second-largest oil producer and boasts the world's fifth-largest proven oil reserves. Although the majority of Iraq's known oil fields are currently producing, above-ground issues such as political instability, security threats, and limited infrastructure have prevented Iraqi production from achieving its potential.

Iraq Oil Production
Thousand barrels per day



Iraq's energy resources are easy to extract and are located in simple onshore geographic areas that are largely unpopulated. As a result, the country has extremely low production costs (about \$6 per barrel); only Saudi Arabia can produce oil more cheaply.

The bulk of Iraq's crude oil exports come from the country's southern fields. Baghdad's disputes with the Kurdistan Regional Government continue to hamper progress in oil production in northern Iraq. The Kurdish government passed a hydrocarbons law that was at odds with the Iraqi Oil Ministry, and by signing oil deals with Iran and Turkey, it circumvented the ministry's requirement that all contracts must be signed with the national government and shipped via the State Oil Marketing Organization. The tension between Baghdad and Arbil has led to payment

Country Key Facts

Official name:	Republic of Iraq
Capital:	Baghdad
Population:	38 254 854 (2016)
Area:	437,072 sq. km.
Form of government:	Parliamentary Republic
Language:	Arabic, Kurdish
Religions:	Shiite and Sunni Muslim, Christian
Currency:	Iraqi Dinar
Calling code:	+964

Source: BP Statistical Review

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Government

The government of Iraq is a democratic, federal parliamentary Islamic republic. Executive power is exercised by the Prime Minister of the Council of Ministers as the head of government, as well as the President. Legislative power is vested in the unicameral 328-member Council of Representatives. Since the establishment of the autonomous Kurdistan Regional Government (KRG) in 1992, the Kurds have their own elected President, Prime minister, Cabinet and 111-member unicameral parliament. The President is commander of the Peshmerga Armed Forces.

Source: GlobalShift

disputes, security problems and delays in building additional infrastructure. However, in December 2014, Baghdad and the Kurdistan Regional Government agreed to a preliminary deal on oil exports and revenues, signaling progress toward a common objective.

Iraq is slowly recovering from a long period of underproduction caused by wars and sectarian violence, but the country must overcome several major challenges before it can fully capitalize on its wealth of hydrocarbon resources. The most obvious of these is political instability and violence stemming from the ongoing conflict with the Islamic State, which has resulted in intermittent supply disruptions in northern Iraq. The majority of pipelines there are inoperable because of damage from conflict. Bottlenecks also continue to exist because of a lack of export infrastructure and limited storage capacity. Additionally, inefficient administrative policies make it more difficult for international oil companies to conduct business in Iraq.

Oil and Gas Fields in Iraq

The following is a list of oil and gas fields in Iraq controlled by the Ministry of Oil in Baghdad (major fields in Bold):

Ahdab (also known as Al-Ahdab, Alahdab)

Controlled by: Ministry of Oil (Baghdad)

Location: Wasit province, 180 km south-east of Baghdad

Discovery: 1979

Reserves: 1 billion barrels of oil. The field also holds 750 billion standard cubic feet (scf) of associated gas reserves, however no plans have been announced for their commercial development, in which case the gas would likely be flared or reinjected.

Size: 303 square kilometres

Developed by: CNPC (75%), North Oil Company (25%)

Contract granted: 2008

Contract duration: 23 years

Remuneration: Believed to be \$6 per barrel

Production started: 2011

Plateau production target: [Output reached 140,000 bpd in November 2012, from 170 wells]

Akkas (also known as Salah Al Dine)

Controlled by: Ministry of Oil (Baghdad).

Location: Anbar province, 30 km south of Al Qaim city on the Syrian border

Discovery: 1992

Reserves: Estimated Gas in Place 5.6 tcf

Size: 30km long and 12km wide

Developed by: Kogas (75%), North Oil Company (25%). Originally awarded to a consortium of Kogas and KazMunaiGas (KMG), but

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KMG pulled out, leaving Kogas as sole investor and operator on new contract terms. Kogas is believed to be planning to sell 49% of its interest in the field.

Contract granted: Third licensing round (October 2011).

Remuneration: \$5.50 for each boe produced

Plateau production target: 400 MMscf per day within seven years and holding that output for 13 years

Badra

Controlled by: Ministry of Oil (Baghdad).

Location: Wassit province in eastern Iraq, 160 km southeast of Baghdad city, and extending across the border into Iran, where it is known as the Changoleh oil field.

Discovery: 1979.

Reserves: 3 billion barrels of oil.

Size: 16 km long and 6 km wide in the current Contract Area.

Quality: Basrah Light.

Developed by: Gazprom (30%), KOGAS (22.5%), Petronas (15%), TPAO (7.5%), Iraqi state-owned Oil Exploration Company (25%).

Contract granted: Second licensing round (2009).

Contract duration: 20 years, with an optional 5-year extension.

Remuneration: \$5.50 per barrel of oil above 15,000 bpd

Production started: September 2014, at 15,000 barrels of oil per day.

Plateau production target: 170,000 barrels of oil by 2017.

Other companies involved in the development: Stirling Group, Bristol Vehicle Manufacturing Division (Bristol VMD), Zhongman Petroleum and Natural Gas Group Co. Ltd (ZPEC), Petrofac, Samsung, Halliburton, Expro, Alderley, ALE, Proclad Group.

Bai Hassan

Controlled by: Disputed. Originally controlled by the Ministry of Oil (Baghdad), but seized by KRG forces in July 2014.

Location: Dibis, south-west of the Kirkuk field.

Reserves: 2.078 billion barrels of oil

Developed by: North Oil Company (100%) until July 2014, when seized by KRG forces.

Contract granted: None. Bids were received in 2009, but no deal was agreed.

Block 1

Controlled by: Ministry of Oil (Baghdad).

Location: The block lies within the northwestern part of Iraq, about 100 km west of Mosul by the Syria-Iraq border and covers an area of around 7,300 km².

Status: Located in Rutba-Jezira tectonic zone, large structures remain undrilled.

Two wells have been drilled in the north and the south of the block. Oil was tested from the Miocene and oil shows were obtained from many Mesozoic levels.

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The block was offered in the fourth oil licensing round in 2012, but no bids were received.

Block 2

Controlled by: Ministry of Oil (Baghdad).

Location: The block lies in northwest Iraq, about 150 km West of Tikrit, to the south of Block 1 and covers an area of around 8,000 km².

Status: Several undrilled structures have been identified.

Block 2 is located in the Rutba-Jezira tectonic zone, on the Jezira plain so is readily accessible

One well drilled on this block showed oil stains in the Cretaceous and gas-cut mud from the Khabour formation (Ordovician).

The block was offered in the fourth oil licensing round in 2012, but no bids were received.

Block 3

Controlled by: Ministry of Oil (Baghdad).

Location: The block lies within the western part of Iraq, about 240 km west of Ramadi and covers an area of around 7,000 km².

Status: Topography is generally desert pavement, except for wadi drainage.

This block is in the Western Desert, close to, and due west of, the Akkas oil and gas discovery (1993) in Khabour formation.

No wells have been drilled in this block.

The block was offered in the fourth oil licensing round in 2012, but no bids were received.

Block 4

Controlled by: Ministry of Oil (Baghdad).

Location: Block 4 lies within the western part of Iraq, about 120 km south of Al-Qaim city. Al Rutbah city is located within the block. The block is on the Rutbah uplift, south west of the Akkas discovery.

Status: The block was offered in the fourth oil licensing round in 2012, but no bids were received.

Block 5

Controlled by: Ministry of Oil (Baghdad).

Location: Block 5 lies in the west part of Iraq, about 20 km south of Al Rutbah city, in the Western Desert and close to the border with Saudi Arabia. The block covers an area of around 7,000 km².

The block is on the Rutbah uplift, southwest of the Akkas discovery.

Status: The block was offered in the fourth oil licensing round in 2012, but no bids were received.

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Block 6

Controlled by: Ministry of Oil (Baghdad).

Location: Block 6 lies within the southwestern part of Iraqi Western Desert, about 150 km southwest of Al Najaf and covers an area of around 9,000 km². The block is bounded on the west by the Iraqi-Saudi border line. The block is in the Rutbah-Jezira tectonic zone and includes numerous undrilled structures.

Status: The block was offered in the fourth oil licensing round in 2012, but no bids were received.

Block 7

Controlled by: Ministry of Oil (Baghdad).

Location: Block 7 lies in the central part of Iraq, about 15 km East of Al Najaf and about 30 km south of Hilla and 120 km southeast of Baghdad and covers an area of around 6,000 km². Al Diwaniya city is located within the block. This block is in the center of the oil-prone Mesopotamia tectonic zone and close to existing infrastructure and numerous appraised discoveries.

Status: The block was offered in the fourth oil licensing round in 2012, but no bids were received.

Block 8

Controlled by: Ministry of Oil (Baghdad).

Location: Block 8 lies within the east central part of Iraq, about 40 km east of Baquba and about 110 km east of Baghdad and covers an area of around 6,000 km². The block is on the border between the productive Mesopotamia tectonic zone and Foothill Zones on trend with hydrocarbon bearing structures in both zones.

Developed by: Pakistan Petroleum (PPL)

Contract granted: Fourth licensing round (2012)

Remuneration: \$5.38 per barrel of oil

Block 9

Controlled by: Ministry of Oil

Location: The block lies in the southern part of Iraq, approximately 20 km north of Basra city adjacent to the Iraq-Iran border and covers an area of around 900 km². It is close to infrastructure and numerous producing and appraised oil fields.

Discovery: September 2014, December 2014

Developed by: Kuwait Energy (KEC) (60%), Dragon Oil (30%), Egyptian General Petroleum Corporation (EGPC) (10%). Was originally KEC (40%), Türkiye Petrolleri Anonim Ortaklığı (TPAO, Turkish Petroleum) (30%), and Dragon Oil (30%), but the Iraqi government expelled TPOA, following which KEC took over the TPOA share. KEC then agreed a farm-in with EGPC.

Contract granted: Fourth licensing round (2012)

Contract duration: If Block 9 is found to be commercial during the five-year exploration period, during which time the consortium is eligible for a possible renewal for another two years twice, the consortium is automatically eligible for 20-year development and

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production phases, extendable by a further five years.

Remuneration: \$6.24 per barrel of oil

Other companies involved in the development: Egyptian General Petroleum Corporation (EGPC), Iraqi Drilling Company (IDC)

Block 10

Controlled by: Ministry of Oil (Baghdad).

Location: The block lies in Muthanna and Dhi Qar, approximately 10 km southwest of Nasriya city.

The block is located on the border between the hydrocarbon rich Mesopotamia tectonic zone and the largely unexplored Salman zone.

Developed by: Lukoil (60%), Inpex (40%)

Contract granted: Fourth licensing round (2012)

Remuneration: \$5.99 per barrel of oil

Block 11

Controlled by: Ministry of Oil (Baghdad).

Location: Block 11 lies in the southwest part of the western Iraqi desert. It is approximately 70 km west of Samawa city and about 80 km south of Najaf city.

Status: The block was offered in the fourth oil licensing round in 2012, but no bids were received.

Numerous undrilled structures are identified in this block in the largely untested Salman tectonic zone.

One well has been drilled on this block which provided valuable stratigraphic information with regards to the petroleum system and facies changes.

Block 12

Controlled by: Ministry of Oil (Baghdad).

Location: Block 12 lies within the southwest part of the Western Desert and covers an area of around 8,000 km². The Block is located in the Najaf and Muthanna provinces, approximately 80 km southwest of Samnawa city and about 130 km west of Nasriya.

The block is in the underexplored Salman tectonic zone.

The well drilled on this block indicated oil shows/stains from Kifl and Nahr Umr Formations.

Developed by: Originally granted to Bashneft (30%), Premier Oil (40%), PetroVietnam (30%, and original operator); Bashneft subsequently cited a 70% interest, taking over the Premier Oil allocation.

On 14th December 2015, Premier Oil signed an agreement with Bashneft assigning its participating interest share in Block 12 back

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to Bashneft, the current operator; on 9th March 2017 Premier announced that it had successfully exited its position in Iraq.

In late 2016 Bashneft was acquired by Rosneft.

Contract granted: Fourth licensing round (2012)

Contract duration: 25 years, may be renewed for an additional five years.

Remuneration: \$9.85 per barrel of oil

Other companies involved in the development: The Oil Exploration Company, Zhongman Petroleum and Natural Gas Group (ZPEC)

Eastern Fields

The Eastern Fields is the collective name for a group of four undeveloped fields: Gilabat, Khashem AlAhmar, Nau Doman and Qumar.

Controlled by: Ministry of Oil (Baghdad).

Location: Diyala governorate, 100-150km south of Kirkuk city

Discovery: 1927 (Khashem Al-Ahmar); 1958 (Gilabat); 1976 (Nau Doman); 1979 (Qumar).

Reserves: unknown

Quality: unknown

Contract granted: None. No bids were received in second licensing round (2009)

East Baghdad

Controlled by: Ministry of Oil (Baghdad).

Location: Baghdad and Salahadin governorates, 10 kilometres east of Baghdad city. Densely populated.

Discovery: 1976

Reserves: 8 billion barrels of oil

Size: 65 kilometres long and 11 kilometres wide, covering only the section north-west of the Diyala river

Developed by: Iraqi State.

Contract granted: None. No bids were received in second licensing round (2009)

Garraf (also known as Gharraf, Algharraf)

Controlled by: Ministry of Oil (Baghdad).

Location: Dhi Qar Governorate in southern Iraq, 5 kilometres (km) north west of Al-Refaei city, 9 km south-east of Qal'at Suker city and 85 km north of Nasiriyah.

Discovery: 1984.

Reserves: 860 million – 1 billion barrels of oil.

Size: The field is 17.5 km long and 5.5 km wide.

Quality: Oil found ranges in gravity from 15 to 36 °API, in multiple reservoirs.

Developed by: Petronas (45%), Japex Garraf Ltd (30%), North

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Oil Company (25%). (Japex Garraf Ltd is owned as follows: Japex 55%, Mitsubishi Corporation 10%, and JOGMEC 35%).

Contract granted: Second licensing round (2009).

Contract duration: 20 years.

Remuneration: Service contract, \$1.49 per barrel. Payment share: Petronas 60%, Japex 40%.

Production started: August 2013, at 35,000 barrels of oil per day.

Plateau production target: 230,000 bpd (2017).

Other companies involved in the development: STX, Zhongman Petroleum and Natural Gas Group, UMW, Schlumberger, Weatherford, Kavin Engineering.

Halfaya

Controlled by: Ministry of Oil (Baghdad).

Location: Maysan governorate in the south-east of Iraq, 35 kilometres south-east of Amarah city

Discovery: 1976

Reserves: 4.1 billion barrels of oil

Size: 35 km long and 10 km wide

Developed by: CNPC (37.5%), Total (18.75%), Petronas (18.75%), South Oil Company (25%).

Contract granted: Second licensing round (2009).

Contract duration: 20 years, later extended to 30 years.

Remuneration: \$1.40 per barrel of oil

Plateau production target: Originally 535,000 bpd for 20 years, later revised to 400,000 bpd for 30 years.

Other companies involved in the development: Bohai, Daiken

Kirkuk

Controlled by: Disputed.

Location: In the governorate of Kirkuk, in northern Iraq, near the town of Kirkuk.

Discovery: 1927

Reserves: 8.7 billion barrels of oil

Size: An elongated, northwest-southeast oriented structure over 100 kilometers long and up to 4 kilometers wide.

Quality: variable

Developed by: North Oil Company

Contract granted: none

Contract duration: n/a

Remuneration: n/a

Production started: 1934

Plateau production target: n/a. Producing about 300k bpd early 2015.

Other companies involved in the development: BP

Majnoon

Controlled by: Ministry of Oil (Baghdad).

Location: Basra governorate, 60 km northwest of Basra city, extending northerly toward the Maysan governorate.

Discovery: 1975

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Reserves: 13 billion barrels of oil
Size: 60 kilometres long and 15 km wide
Developed by: Shell (45%); Petronas (30%); Maysan Oil Company (25%)
Contract granted: Second licensing round (2009).
Contract duration: 20 years.
Remuneration: \$1..39 per barrel of oil
Plateau production target: 1.8 million bpd.
Other companies involved in the development: Kentz, Foster Wheeler, Petrofac, Halliburton

Mansuriyah (also known as Mansouriya, Mansuria)

Controlled by: Ministry of Oil (Baghdad).
Location: Diyala province, 50 kilometres north-east of Baquba city
Size: 20 kilometers long and 3 to 4 kilometers wide
Developed by: TPAO (37.5%), Oil Exploration Company (25%), Kuwait Energy (KEC) (22.5%), Kogas (15%)
Contract granted: Third licensing round (2010).
Remuneration: \$7 per barrel of oil equivalent (boe)
Plateau production target: 320 million standard cubic feet (Mmscf) per day.

Maysan Oil Fields (also known as Missan Oil Fields)

Controlled by: Ministry of Oil (Baghdad).
Location: A complex of fields located around 175 kilometres (km) north of Basra city, close to the border with Iran, including the Abu Ghirab, Jabal Fauqi (Fakka) and Buzurgan oil fields.
Reserves: 2.5 billion barrels of oil
Developed by: China National Offshore Oil Corporation (CNOOC) (63.75%), Türkiye Petrolleri Anonim Ortakligi (TPAO) (11.25%), Iraq Drilling Company (25%)
Contract granted: May 2010
Remuneration: \$2.30 per barrel of oil
Production started: 1976.
Plateau production target: 450,000 bpd.

Middle Furat

Controlled by: Ministry of Oil (Baghdad).
Location: A cluster of three undeveloped oil fields located in Karbala, south of Al-Razaza Lake.
Discovery: 1960 (Kifl), 1983 (Merjan) and 1987 (West Kifl).
Reserves: 600 million barrels of oil
Size: All three fields are NW-SE trending structures with approximate sizes of 2.5 km by 2 km (Merjan), 10 km by 8 km (West Kifl), and 5 km by 1.5 km (Kifl).

Nahr Bin Umar (also known as Nahr Umr, Nahran Omar)

Controlled by: Ministry of Oil (Baghdad).
Location: 15 km to the north of Basra.
Discovery: 1940s

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Reserves: 6.5 billion barrels of oil, 12 bcf gas.

Size: 40 km long by 25 km wide

Developed by: South Oil Company (SOC)

Najmah (also known as Najma)

Controlled by: Ministry of Oil (Baghdad).

Location: Nineveh governorate, 50km south of Mosul city.

Discovery: 1934

Reserves: 807 million barrels of oil

Size: 11 km long and 4.5 km wide

Quality: Significant accumulations of heavy oil (15 to 20°API).

Developed by: Angola's Sonangol had been granted the contract (75%), with North Oil Company (25%), in 2010 at a price of \$6.00 per barrel, but Sonangol pulled out in 2014 due to security problems.

Nasiriyah (also known as Nasiriya)

Controlled by: Ministry of Oil (Baghdad).

Location: South of Baghdad

Reserves: 4.4 billion barrels of oil

Contract granted: While currently under state control, the development of the field is being offered as part of a larger project, known as the Nasiriyah Integrated Project (NIP), which will include the construction of a 300,000 bpd refinery.

Qayara (also known as Qayarah, Qayyara)

Controlled by: Ministry of Oil (Baghdad).

Location: Nineveh

Discovery: 1927

Reserves: 800 million barrels of oil

Quality: Very heavy and sour (15°API).

Developed by: Angola's Sonangol had been granted the contract (75%), with South Oil Company (25%), in 2010 at a price of \$6.00 per barrel, but Sonangol pulled out in 2014 due to security problems. As of April 2015, Qayara was reported to be the only functioning oilfield under the control of the Islamic State (IS, ISIS, ISIL).

Rumaila

Controlled by: Ministry of Oil (Baghdad).

Location: In the Basra region, about 20 miles from the Kuwaiti border.

Discovery: 1953

Reserves: 17.7 billion barrels of oil.

Size: 38 kilometers long and 12 kilometers wide.

Quality: The oil is sweet (low in sulphur) and around 34°API Gravity.

Developed by: BP (38%), CNPC (37%), Iraqi state-owned South Oil Company (SOC) (25%).

Contract granted: 2009

Contract duration: 20 years.

Remuneration: \$2.00 per barrel of oil.

Plateau production target: In 2014, the final production target was

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revised down from 2.85 million barrels per day (bpd) to 2.1 million bpd by 2016.

Other companies involved in the development: Petrofrac, China Petroleum and Engineering Construction Corporation (CPECC), Frontier Pitts, Baker Hughes, G4S, Schlumberger, Crescent, WorleyParsons, Frazer-Nash Consultancy, Cameron, Amec Foster Wheeler.

Siba Gas Field

Controlled by: Ministry of Oil (Baghdad).

Location: Basra governorate, 30 km south-east of Basra city.

Discovery: 1968

Reserves: 1.1 tcf gas

Size: Approximately 21 km long and 6-13 km wide.

Developed by: Kuwait Energy (25%), Türkiye Petrolleri Anonim Ortakligi (TPAO) (30%), Egyptian General Petroleum Corporation (EGPC) (20%), Maysan Oil Company (MOC) (25%).

Contract granted: 2010

Contract duration: 20 years.

Other companies involved in the development: Petrojet

West Qurna 1

Controlled by: Ministry of Oil (Baghdad).

Location: 50 km northwest of the city of Basra

Discovery: 1973

Reserves: 8.7 billion barrels of oil

Developed by: ExxonMobil (25%), PetroChina (25%), Shell (15%), Pertamina (10%), Oil Exploration Company (25%)

ExxonMobil originally had a 60% stake in the field, but sold 25% to PetroChina and 10% to Pertamina in November 2013, leaving it with a 25% stake.

Contract granted: 2009

Contract duration: 20 years.

Remuneration: \$1.90 per barrel of oil

Plateau production target: 2.825 million bpd.

Other companies involved in the development: Halliburton, Kentz, SNC Lavalin, Enka, Wood Group

West Qurna 2

Controlled by: Ministry of Oil (Baghdad).

Location: Around 65 km NW of the city of Basra.

Discovery: 1973

Reserves: 13 billion barrels of oil

Quality: 21.3°API Gravity.

Developed by: Lukoil (75%), South Oil Company (25%)

Contract granted: 2009

Contract duration: 25 years.

Remuneration: \$1.15 per barrel of oil from a production level of above 120,000 bpd

Plateau production target: 1.8 million bpd

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Zubair

Controlled by: Ministry of Oil (Baghdad).

Location: 20 km south-west of the city of Basra.

Discovery: 1949

Reserves: 4 billion barrels of oil

Developed by: Eni (32.81%), Kogas (18.75%), Maysan Oil Company (25%), South Oil Company (23.44%). Occidental had a 23.44 percent share in the field, but relinquished it to the state-owned South Oil Company in October 2016.

Contract granted: 2010

Contract duration: 20 years, later extended to 25 years (ending in 2035).

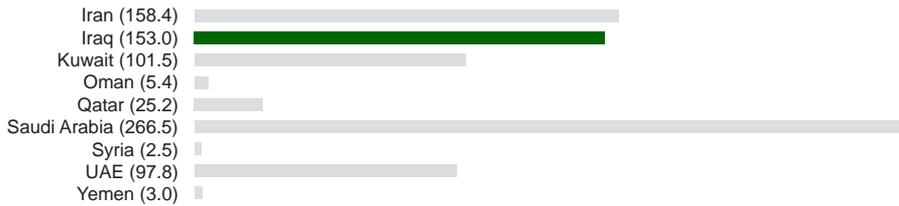
Remuneration: \$2.00 per barrel of oil in excess of 220,000 bpd

Plateau production target: 1.125 million bpd by 2017, later lowered to 850,000 bpd.

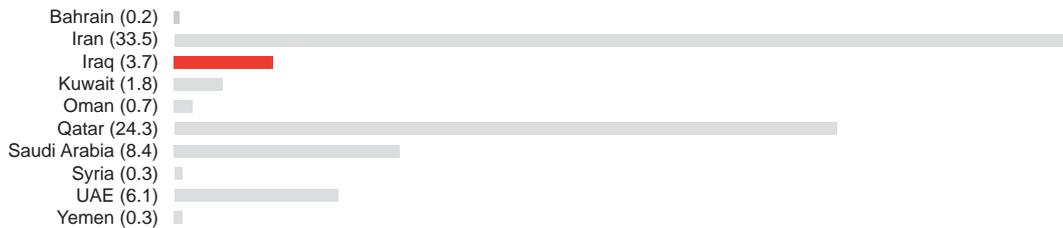
Other companies involved in the development: Weatherford, Daewoo, Samsung, Petrojet, John Crane (Smiths Group), Amaranth, ALE.

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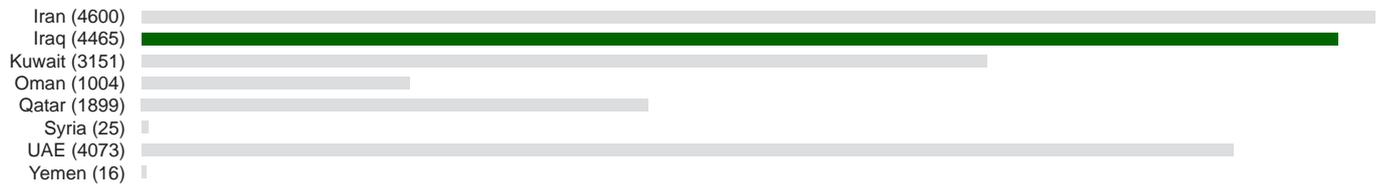
Proved oil reserves at 2016 year end (billion bbls)



Proved gas reserves at 2016 year end (trillion cubic metres)



2016 Oil production (thousand bbls per day)

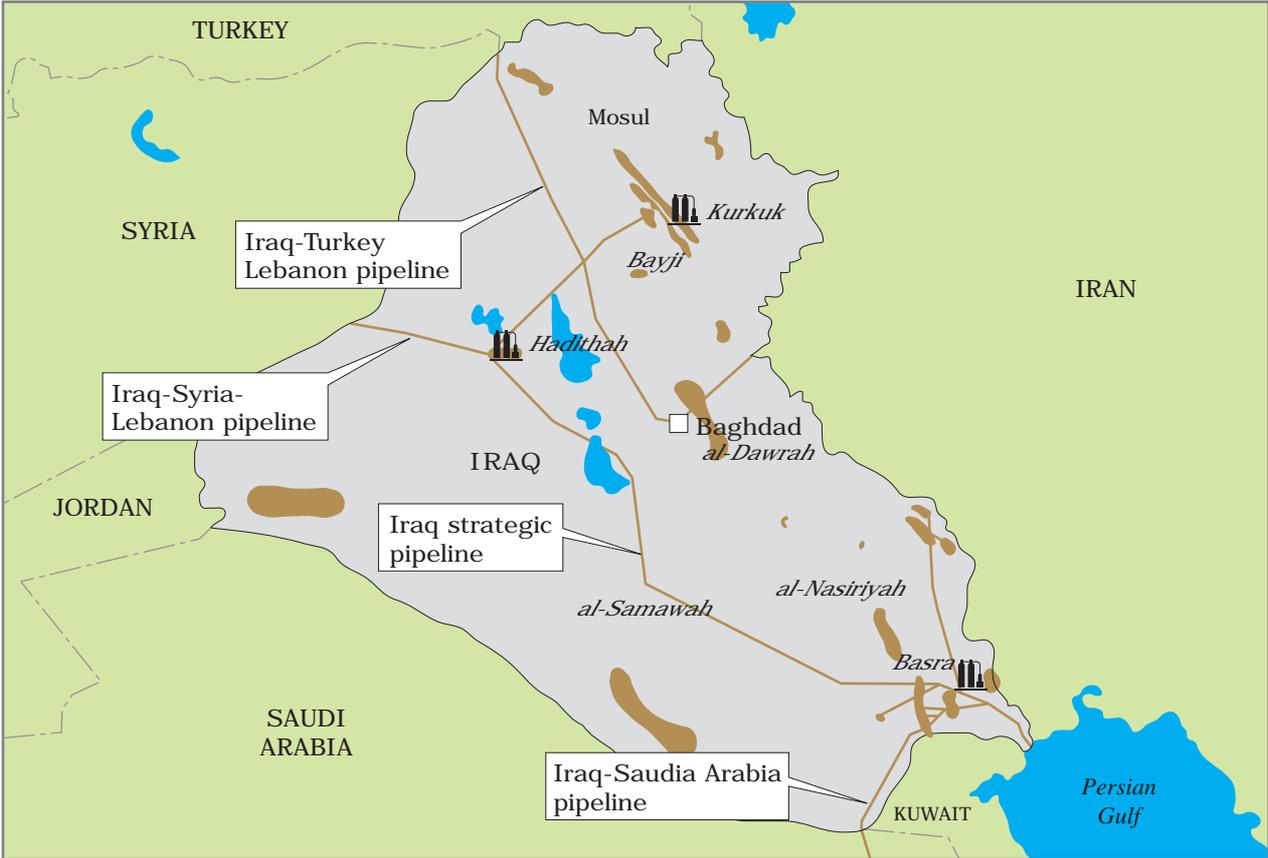


2016 gas production (billion cubic metres)



Source: BP Statistical Review

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Source: EKF

Oil field Oil pipeline Refinery