Country Analysis Executive Summary: Iraq

Overview

- Iraq is the second-largest crude oil producer in the Organization of the Petroleum Exporting Countries (OPEC) after Saudi Arabia, and it holds the world’s fifth-largest proved crude oil reserves. Most of Iraq’s major known fields—all of which are located onshore—are producing or are in development.

- Iraq’s crude oil production grew by an average of about 300,000 barrels per day (b/d) from 2013 through 2017, and it averaged 4.4 million b/d in 2017. During the first half of 2018, Iraqi crude oil output stood at about 4.5 million b/d. These production estimates include oil produced in the Iraqi Kurdistan Region, the semiautonomous northeast region in Iraq governed by the Kurdistan Regional Government (KRG).

- Iraq’s economy is heavily dependent on crude oil export revenues. In 2017, crude oil export revenue accounted for an estimated 89% of Iraq’s total government revenues, according to the International Monetary Fund (IMF). In 2017, Iraq (excluding KRG) earned almost $60 billion in crude oil export revenue, $16 billion more than in 2016, as a result of increasing oil prices and slightly increasing export volumes.

Kurdistan Regional Government and Baghdad

- KRG, the official ruling body of the semiautonomous region in northern Iraq that is predominantly Kurdish, has been involved in disputes with national authorities related to sovereignty. The KRG held a non-binding independence referendum on September 25, 2017, which more than 90% of voters approved.

- Following the referendum, Iraqi central government forces started an offensive to retake oil fields in the Kirkuk area, along with other vital infrastructure such as border crossings and airports. By the end of October 2017, northern Iraq production had plummeted to about half of the pre-referendum volume of nearly 600,000 b/d. Northern Iraqi production has recovered somewhat since the October 2017 level.

- Following the takeover of the Kirkuk area oil fields by the central Iraqi government forces in the fall of 2017, Iraq’s North Oil Company (NOC) took over the operatorship of the Avana Dome, Baba Dome, and Bai Hassan fields. The NOC continues to operate the Baba, Jambur, and Khabbaz oil fields.
Iraq has considered various options to expand its northern export capacity that would bypass the KRG pipeline, an issue that has become even more urgent since KRG’s independence referendum and subsequent crude oil production disruptions in the north. To expand transportation capacity, which would allow it to raise the northern output, Iraq has prioritized repairing parts of the pipeline that connect the northern field to the Baiji refinery.

The other outlet that Iraq has established for its northern crude oil is the swap deal with Iran, an agreement struck in 2017. Iraq has begun test runs of these crude oil swaps, in which northern Iraqi crude oil is trucked to Iran, and Iran ships the equivalent volume of crude oil from the Kharg terminal to Basra. Iraq plans to start trading 30,000 b/d and would increase it to 60,000 b/d of crude oil through this swap agreement with Iran.

Petroleum and other liquids

According to the Oil & Gas Journal (OGJ), Iraq ranked fifth in proved crude oil reserves at the end of 2017 and held nearly 149 billion barrels, representing 18% of proved reserves in the Middle East and almost 9% of global reserves.

Control over rights to the reserves is a source of considerable controversy between the ethnic Kurds and other groups in the area. According to Rystad estimates, as of July 2018, the KRG-controlled areas (as of July 2018) held about 3 billion barrels in resources. The KRG estimate of 45 billion barrels is likely higher because they include both unproven reserves and the disputed Kirkuk area fields.

Iraq’s crude oil production averaged more than 4.4 million b/d in 2017, 16,000 b/d more than the production level in 2016 (Figure 1). Of the volume produced in 2017, almost 3.9 million b/d was produced in southern Iraq under the central government in Baghdad, and the remainder was produced in northern Iraq, most of which was at fields operated by the KRG. Basrah Light is Iraq’s largest crude oil stream, comprising about 3 million b/d of total Iraqi production.

In southern Iraq, where nearly 89% of the country’s crude oil was produced in 2017, the upgrade of midstream infrastructure (pipeline pumping stations and storage facilities) and improvements to crude oil quality contributed to increased production, but most of these improvements occurred in 2015, with other, smaller improvements occurring since then.

In 2017, Iraq consumed 810,000 b/d of petroleum and other liquids. Iraq’s liquids consumption has grown by an average of 6% per year during the past decade. Most of Iraq’s petroleum consumption needs are met by its domestic refineries; however, Iraq relies on imports of some petroleum products, including diesel, gasoline, and small volumes of kerosene. Iraq also uses crude oil for electric power generation, consumption for which averaged about 130,000 b/d in 2017.
Crude oil exports

- Total Iraqi seaborne traded crude oil exports averaged about 3.8 million b/d in 2017, mostly unchanged compared with the previous year, based on tanker loadings published by Clipper Data and data from the Iraqi Ministry of Oil (Figure 2). During the year, approximately 88% of Iraqi exports were shipped from the southern terminals in the Persian Gulf, which exports Basra light and heavy crude oil grades (Figure 3).

- Asia (led by India, China, and South Korea) is the main regional destination for Iraq’s crude oil, importing 54% of total Iraqi crude oil exports in 2017. India imported 816,000 b/d of crude oil from Iraq (22% of the total), making India the top importer of Iraqi crude oil during the year. Outside of Asia, the United States imports the most Iraqi crude oil at 602,000 b/d (17% of total). The United States’ imports of Iraqi crude oil increased year on year in 2017 by more than 180,000 b/d, mainly the result of increased imports of the Basra heavy grade to partly offset declining U.S. imports from Venezuela.

- Iraq exports relatively small volumes of crude oil transported by truck and of volumes exported inland to Turkey via an onshore pipeline from the Ceyhan terminal to Turkey’s Kirikkale refinery, near Ankara. The Ceyhan-Kirikkale pipeline has a capacity of 135,000 b/d.
Figure 2. Iraq’s seaborne crude oil exports in 2017, by destination

Note: Total crude oil exports were 3.8 million b/d in 2017. Exports only include seaborne-traded crude oil, not crude oil exported by truck or crude oil exported onshore Turkey via the Ceyhan-Kirikkale pipeline to a refinery near Ankara.

Figure 3. Iraq’s monthly seaborne crude oil exports, by location, January 2015 - May 2018

Note: Exports only include seaborne-traded crude oil, not crude oil transported by trucks or onshore pipelines.

Sources: U.S. Energy Information Administration based on Iraqi Ministry of Oil, ClipperData
Natural gas

- At nearly 135 trillion cubic feet (Tcf), Iraq’s proved natural gas reserves at the end of 2017 were the 12th largest in the world, according to the OGJ. About three-quarters of Iraq’s natural gas reserves are associated with oil, most of which lie in the supergiant fields in the south.

- Iraqi dry natural gas production was 357 billion cubic feet (Bcf) in 2017, with an additional 18 Bcf reinjected during the year. In 2017, Iraq flared 629 Bcf of natural gas, ranking as the second-largest source country of flared gas in the world behind Russia. Natural gas is flared because of insufficient pipelines and other midstream infrastructure. Iraq consumed 422 Bcf of dry natural gas in 2017, some of which was used in the electricity sector.

- Iraq began importing natural gas from Iran in June 2017 to fuel electric power plants near Baghdad, including the Al-Besmaya, Al-Quds, Al-Mansuriyah, and Al-Sadr stations. Annual natural gas imports averaged 132 million cubic feet per day (MMcf/d) in 2017, but these volumes likely will rise as new natural gas-fired generation capacity comes online in Iraq. In January through May 2018, Iraq imported an average of 265 MMcf/d.

Electricity

- Iraq’s electricity generation totaled more than 93 billion kilowatthours (kWh) in 2017 (Figure 4). Net generation in Iraq grew by an annual average of about 11% between 2007 and 2017.

- Although net electricity generation has increased steadily since the 2003 decrease in electricity generation associated with the start of the Iraq War, distribution losses have also increased. From 2006 to 2016, distribution losses averaged 42% of total electricity supply.

- Peak summer demand typically exceeds actual generation, resulting in power shortages that have sparked protests, particularly in southern Iraq. In the summer of 2018, the situation became acute when a summer drought reduced the availability of hydropower, and Iran cut off 1.4 gigawatts (GW) of electricity exports.

- The Middle East Economic Survey estimated that Federal Iraq’s available electricity generation capacity reached 16.9 GW at the end of 2016. Installed capacity was estimated to be much higher at 26.2 GW. A number of projects are under construction to expand the capacity even further, with seven facilities (most of which are combined-cycle natural gas turbine plants) under construction that will add 10.2 GW of capacity.

- Iraq burns crude oil directly at power plants to make up for its limited feedstock of other power generation fuels. Average crude oil used at power stations fell to 129,000 b/d in 2017, most likely as a result of increased use of natural gas for electric power generation. In 2016, crude oil burn averaged 169,000 b/d. At its peak, direct use of crude oil reached 223,000 b/d in July and September 2015 (Figure 5).
Figure 4. Electricity net generation, imports, and distribution losses in Iraq

Source: U.S. Energy Information Administration, based on information published by EIA, BP, UN, and IEA

Figure 5. Crude oil used at power stations in Iraq

Source: Joint Oil Data Initiative
In response to stakeholder feedback, the U.S. Energy Information Administration has revised the format of the Country Analysis Briefs. As of December 2018, updated briefs are available in two complementary formats: the Country Analysis Executive Summary provides an overview of recent developments in a country’s energy sector and the Background Reference provides historical context. Archived versions will remain available in the original format.

- Data presented in the text are the most recent available as of December 2018.
- Data are EIA estimates unless otherwise noted.

Endnotes

1 Oil & Gas Journal, Worldwide Look at Reserves and Production, (January 1, 2018).
2 International Monetary Fund, Article IV Consultation, Iraq 2017 (August 2017), Table 3, page 34.
3 Iraq Oil Report, "Iraq oil exports steady in June though federal revenues fall," (July 2, 2018).
4 Oil & Gas Journal, Worldwide Look at Reserves and Production, (January 1, 2018).
5 Facts Global Energy, Middle East Refined Product Balances, Middle East Oil Databook, (Fall 2017).
6 Joint Oil Data Initiative, July 2018 update.
8 Oil & Gas Journal, Worldwide Look at Reserves and Production, (January 1, 2018).
12 Facts Global Energy, Iran Oil and Gas Monthly June 2018 (July 19, 2018).
16 Joint Oil Data Initiative, July 2018.