Yemen

Last Updated: Feb. 15, 2012

Background

Yemen is located along the Bab el-Mandab, a strategic world oil shipping route.

Yemen is a relatively small oil and natural gas producer. However, it is important to the global oil trade because of its strategic location at the tip of the Arabian peninsula on the Bab el-Mandab, one of the world's most important shipping lanes, through which an estimated 3.5 million barrels of oil passed daily in 2010. Disruption to shipping in the Bab el-Mandab could prevent tankers in the Persian Gulf and the Gulf of Aden from reaching the Suez Canal/Sumed pipeline complex, requiring a costly diversion around the southern tip of Africa to reach western markets.

In recent years, the region has seen rising piracy off the Somali coast, in the Gulf of Aden and southern Red Sea, reaching into the Indian Ocean. Security concerns in Yemen involving militant groups have deterred investment in recent years, with numerous attacks on energy infrastructure, particularly oil pipelines, slowing production and increasing costs.Yemen's economy is heavily dependent on hydrocarbons, which accounted for 30 percent of GDP, nearly 75 percent of government revenues, and over 90 percent of foreign exchange earnings in 2010. As oil revenues decline, the government’s ability to provide basic services has been weakening. A political crisis occurred in 2011, inspired by similar public demonstrations in Tunisia and Egypt.

Oil

Yemen seeks to attract more foreign investment to boost exploration efforts and reverse its declining crude oil production.

According to the *Oil & Gas Journal*, Yemen had proven crude oil reserves of 3 billion barrels as of January 1, 2012. Yemen's oil reserves and production are located in five main geographical areas: Jannah and Iyad in central Yemen, Marib and Jawf in the north, and Shabwa and Masila in the south. All production comes from two sedimentary basins, Marib-Shabwa and Sayun-Masila, out of a total of 12 basins believed to hold reserves. Yemen’s oil reserves are generally light and sweet (low in sulfur content) at API gravities ranging from 28 degrees to 48 degrees, with the highest quality crude coming from the Marib-Jawf fields.

Sector Organization

Yemen's General Corporation for Oil, Gas and Mineral Resources is a loose affiliation of several state-owned subsidiaries including: Yemen Oil Company (YOC), Yemen Refining Company (YRC), Petroleum Exploration and Production Authority (PEPA), Yemen Gas Company (YGC), Oil Products Distribution Company, General Department of Crude Oil Marketing, and Safer E&P Operations Company (Safer). General Corporation for Oil, Gas and Mineral Resources is responsible for managing industry contracts and relations with operators and partners, as well as the government's share of crude exports.

All branches report to the Ministry of Oil and Mineral Resources, which is responsible for oil policy. The oil sector is open to private company investment on a production-sharing basis with YOC. Contracts with foreign oil companies, however, require parliamentary approval.

Safer, Yemen's leading national oil company, was formed in 2005 to take over Marib Block 18 when Hunt Oil and ExxonMobil's license expired and the parliament vetoed its extension. Nexen's contract for the Masila oil field expired December 2011 and the contract was taken over by newly-created state-owned PetroMasila, which plans to maximize government revenues from the field.

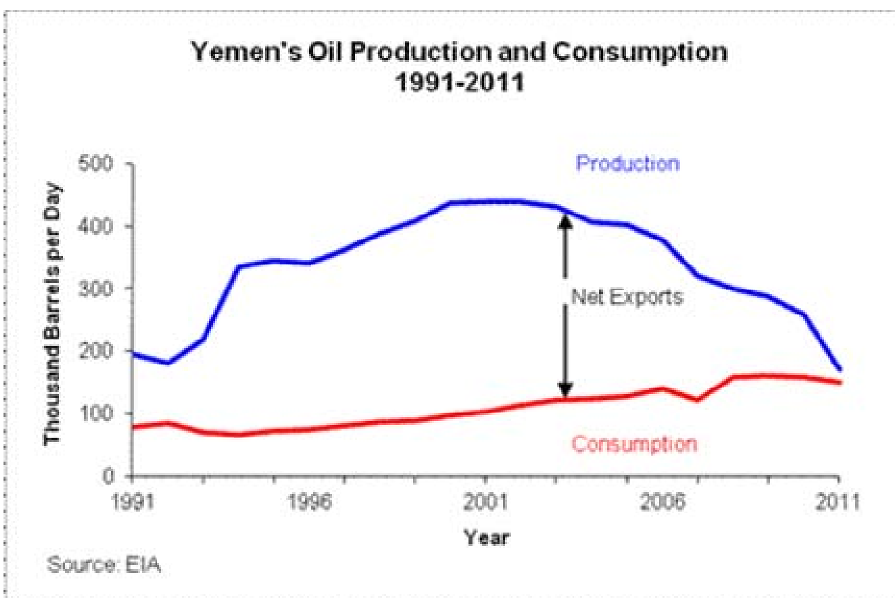
Production and Exploration

In 2011, Yemen's total oil production averaged about 170,000 barrels per day (bbl/d), down from 259,000 bbl/d estimated for 2010. Production has been declining steadily since reaching a peak of 440,000 bbl/d in 2001 due to a lack of sufficient new investment in exploration and inadequate maintenance of facilities.

In 2011, anti-government strikes, attacks on pipelines, and the evacuation of foreign staff combined to reduce annual production to below 200,000 bbl/d. In March, the main crude oil export pipeline from the Marib and Shabwa fields to the Ras Isa terminal was blown up and remained offline until mid-July. In May, oil exports were reported by the Centre for Global Energy Studies as being less than 70 percent of their normal level. Further attacks on the pipeline occurred and by January 2012, Yemen was reliant on crude and product imports as its main refinery was shut in November.

Yemen has twelve main producing blocks, operated by nine international oil companies. Production at Norwegian DNO International's Block 47 began in 2011, despite the security situation in the country. In 2010, thirty-two blocks were under exploration by 16 oil companies in partnership with Yemen Oil Company. Exploration saw relative success in 2010, with discoveries announced at several blocks.

Despite interest from a large number of companies during an initial licensing round for offshore fields in late 2007 and 2008, domestic security uncertainty and the escalation of piracy in the Gulf of Aden derailed exploration of Yemen's offshore areas. The most recent bidding round was held in October 2010, at the third conference for oil and gas, where 10 oil blocks both on and off shore were put up for bidding. However, the government awarded three new blocks in 2010: Block 48 was awarded to DNO International, Block 85 to Total SA, and Block 86 to Austria's OMV.



Consumption and Exports

Yemen had total oil exports of 103,000 bbl/d and total domestic consumption of 157,000 bbl/d in 2010, according to EIA estimates. Asian markets account for the majority of Yemen's oil exports. With growing domestic consumption and decreasing production, net exports are on a declining trend. Yemen imports some refined products; in 2008, the most recent data available, gross imports of refined products were estimated at 62,000 bbl/d, mainly distillate and residual oils, while 18,000 bbl/d of products were exported.

Pipelines and Export Terminals

Yemen has a 662-mile integrated network of oil pipelines to transport oil from three major central production facilities to five oil export terminals: Aden, Ras Isa, Hodeidah, Bir Ali, and Ash Shihr. The pipelines have been the target of recurring attacks, which curtailed the flow of oil production and exports in 2011.

The 270-mile Marib to Ras Isa pipeline has throughput capacity of 400,000 bbl/d and transports oil from the Marib basin to the Ras Isa offshore export terminal on the Red Sea, Yemen's main crude export point. Ras Isa terminal is operated by Safer and handles most of the company's Marib light crude production. This pipeline was blown up several times in 2011, disrupting throughput.

The 90-mile Masila to Ash Shihr pipeline has capacity of 300,000 bbl/d and runs from Masila and East Al Hajr fields to the export terminal at Ash Shihr on the Gulf of Aden. The Ash Shihr terminal (also called al Mukallah), which is operated by Nexen, has upwards of 3.5 million barrels of storage capacity.

The 130-mile, 135,000-bbl/d Shabwa to Bir Ali pipeline transports crude oil from the Shabwa region to the Bir Ali terminal on the Gulf of Aden. The ports of Aden and Hodeidah handle refined products exported onto smaller tankers.

Downstream

According to the *Oil & Gas Journal*, on January 1, 2012, Yemen had a total crude oil refining capacity of 140,000 bbl/d from two aging refineries: the 130,000 bbl/d Aden refinery, built in 1954 and operated by Aden Refinery Company, and the 10,000 bbl/d Marib refinery, built in 1986 and operated by the Yemen Refinery Company. The Aden refinery was shut in May and again in November 2011 due to continuing attacks on connecting crude pipelines, causing products shortages in local markets, and making Yemen reliant on crude and products imports, mainly from neighboring Saudi Arabia.

Natural Gas

Yemen began exporting liquefied natural gas in November 2009.

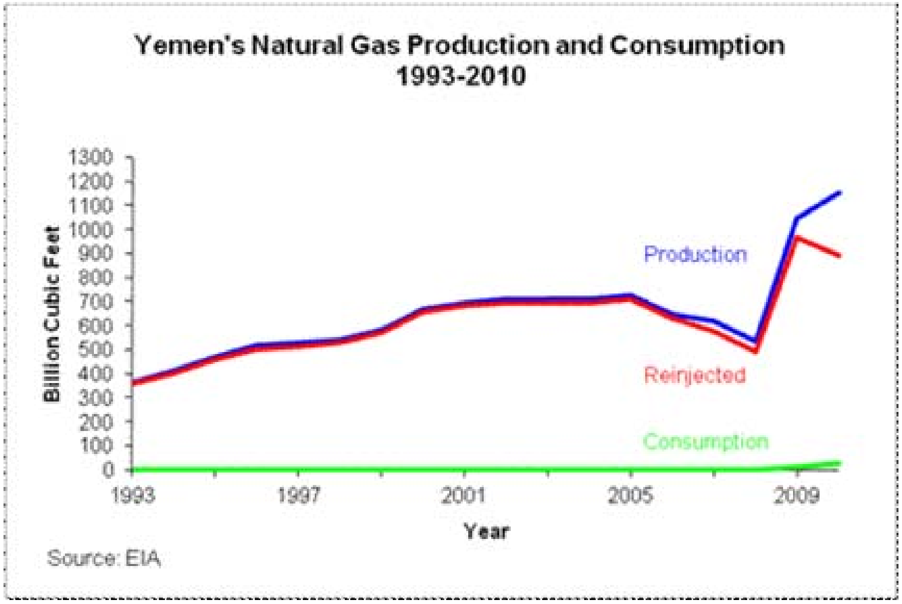
According to the *Oil & Gas Journal*, as of January 1, 2012, Yemen had 16.9 trillion cubic feet (Tcf) of proven natural gas reserves. Most of Yemen's natural gas reserves are associated gas concentrated in the Marib-Jawf oil fields, which contain 10 Tcf of proven natural gas reserves. Success in developing the liquefied natural gas (LNG) sector is likely to increase interest in further natural gas exploration and production. LNG revenues partially offset declining oil export revenues.

Exploration and Production

In 2010, Yemen produced an estimated 1,153 billion cubic feet (Bcf) of gross natural gas, of which 890 Bcf was reinjected to provide enhanced oil recovery and 245 Bcf was marketed, including 194 Bcf exported as LNG.

Natural gas production began in Yemen in 1993. After rising to 727 Bcf in 2005, production declined to 533 Bcf by 2008, but in 2009 production jumped to almost double its 2008 level. Prior to 2009, Yemen produced only associated gas, reinjecting practically all of it to provide enhanced oil production. A long-term LNG sales contract with Korea Gas Corporation was signed in 2005, providing the impetus and the investment needed to begin development of the country's natural gas reserves. Contracts were also signed with GDF Suez and Total. All three contracts run for 20 years.

The Yemeni government's plans for increased domestic use of its natural gas reserves include the transition of power generation from diesel fuel oil to natural gas. Some of the independent energy firms exploring for oil have found associated pockets of natural gas along with new oil discoveries. Reportedly, all new production sharing agreements (PSAs) with foreign companies now include a clause that mandates contractors to invest in Yemen's natural gas infrastructure.



Liquefied Natural Gas (LNG)

According to Cedigaz estimates, Yemen exported a total of 194 Bcf of LNG in 2010. The principal buyers were South Korea (38 percent), the United States (20 percent), and China (13 percent). According to Reuters, Yemen was able to meet all contractual commitments in 2011, despite the mid-October sabotage to the pipeline supplying the LNG facility.

The Yemen LNG project at the port of Balhaf on the Gulf of Aden became commercially operational in October 2009. At a cost of $4.5 billion, Yemen LNG is the largest industrial project in the country. French company Total holds a 39.6 percent stake in the project, followed by Hunt Oil at 17.2 percent, Yemen Gas Company at 16.7 percent, and 3 South Korean companies - SK Gas at 9.55 percent, KoGas at 6 percent, and Hyundai at 5.88 percent - while other Yemeni investors make up the balance. The Balhaf LNG processing plant, which is operated by Total, added a second train in April 2010, increasing total capacity to 326 Bcf. Balhaf receives natural gas from Block 18 in the Marib-Jawf Basin via a 200-mile, 900-thousand cubic feet per day capacity pipeline. Block 18 is operated by state-run Safer Company, which has earmarked 10 Tcf of natural gas reserves for the LNG project. Yemen LNG has four tankers, with a total capacity of 13 million cubic feet.

Links

EIA Links
EIA – Yemen Country Energy Profile

U.S. Government
CIA World Factbook - Yemen
U.S. State Department Background Notes on Yemen

General Information
The World Bank
The Yemen Times

Government Agencies
Petroleum Exploration and Production Authority
Yemen Ministry of Oil
Yemen News Agency (SABA)

Oil and Natural Gas
Aden Refinery Company
Nexen
Safer Exploration and Production Operations Company (SEP
Total
Yemen LNG

Sources

Centre for Global Energy Studies
Global Oil Insight
IHS Global Insight

International Oil Daily
Middle East Economic Survey (MEES)
National Yemen
Oil and Gas Directory
Platt's Oilgram News
Reuters
Saba News Agency
Tenders Info
Total
UPI Energy
Upstream
U.S. Energy Information Administration
World Gas Intelligence
Yemen Ministry of Oil and Minerals
Yemen News Agency
Yemen Times
Yemen Petroleum Exploration and Production Authority (PEPA)

Contact Info

cabs@eia.gov
(202) 586-8800
cabs@eia.gov