

Short-Term Energy Outlook Supplement:

Status of Libyan Loading Ports and Oil and Natural Gas Fields

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Overview

During July and August 2013, protests at major oil loading ports in the central-eastern region of Libya forced the complete or partial shut-in of oil fields linked to the ports. As a result of protests at ports and at some oil fields, crude oil production fell to 1.0 million barrels per day (bbl/d) in July and 600,000 bbl/d in August, although the production level at the end of August was far lower. At the end of August, an armed group blocked pipelines that connect the El Sharara and El Feel (Elephant) fields to the Zawiya and Mellitah export terminals, respectively, forcing the shutdown of those fields. El Sharara had been producing 340,000 bbl/d for most of August, contributing to more than half of the month's average. The El Feel field had been shut in from the end of May to around August 10, and had ramped up to 70,000-80,000 bbl/d prior to the latest shut-in.

EIA estimates that Libya's effective capacity is slightly below 1.6 million bbl/d, placing unplanned crude oil disruptions at almost 600,000 bbl/d in July and close to 1.0 million bbl/d in August. Unplanned outages at the end of August mounted to 1.35 to 1.4 million bbl/d. The high level of outages continued into September, and EIA estimates that crude oil production averaged 200,000 to 230,000 bbl/d for the first week of this month. Libya's crude oil exports are estimated at 80,000 bbl/d, coming entirely from offshore platforms, according to various news sources. Only three out of nine loading ports are currently able to load crude oil.

During the recent crisis, particularly after the situation escalated at the end of August, different estimates of crude oil production have been reported by various news and trade press sources. Recent estimates range from 150,000 to 250,000 bbl/d. The range reflects the precarious nature of the situation and the ambiguities surrounding the production level as varying estimates have been given by Libyan government officials.

Estimated crude oil production, disruptions, and exports in Libya (thousand bbl/d)

	July 2013	August 2013	September 2013 ¹	Baseline ²
Production	1,000	600	200-230 ³	1,580
Disruptions	580	980	1,350-1,380	0
Exports ⁴	830	460 ³	80	1,300

¹ Production and disruptions are the average for the first week of September (1-7).

² The baseline production is EIA's assumption for effective capacity. The baseline exports estimate is based on historical estimates for crude oil exports and domestic oil consumption.

³ These estimates include condensate mainly from the Wafa gas field, which is typically blended with crude oil from the El Feel oil field, which was shut in from the end of May to around August 10 and again around August 27.

⁴ July and August export estimates are based on APEX Tanker Data and September is based on news reports. Source: U.S. Energy Information Administration.

Loading ports and exports

Operating: The Marsa al Brega port and the Farwah (Al-Jurf) and Bouri offshore platforms are operating and are able to load crude oil. Crude oil loaded at Marsa al Brega is being diverted to supply the Zawiya refinery because the refinery's feedstock began to run out after the El Sharara oil field was shut down. Crude oil exports of roughly 80,000 bbl/d are expected to continue from the Al-Jurf and Bouri offshore platforms. The Mellitah port is able to load condensate, which is being produced at gas fields.

Not operating to load crude oil: The Mellitah, Zawiya, and Marsa al Hariga (Tobruk) ports are not able to load crude oil because the main fields sending crude oil to those ports are almost all shut-in. In August, officials said that two tankers were waiting to be loaded at Marsa al Hariga but had difficulty finding crude to load. The shutdown of El Sharara and El Feel (Elephant) oil fields in late August affected crude oil supplies to the Zawiya and Mellitah ports, respectively.

Closed and under force majeure: The **Es Sider** (El-Sidra), **Ras Lanuf**, and **Zueitina** ports are not operating and remain under force majeure since August 18.

Exports: Crude oil exports for August, including some condensate typically mixed with crude, are estimated at about 460,000 bbl/d, based on APEX Tanker Data. Crude oil exports in August encompass oil that was lifted from the Zawiya, Bouri, Al-Jurf, Mellitah, Marsa al Brega, and Ras Lanuf¹ ports. The Mellitah gas plant has continued to export about 160,000 bbl/d of condensate, according to the latest Foreign Reports Bulletin.

Oil production and fields

Crude oil production averaged 1.0 million bbl/d in July and 600,000 bbl/d in August 2013. At the end of August production fell far below the monthly average after an armed group blocked pipelines that connect the El Sharara and El Feel (Elephant) fields to the Zawiya and Mellitah ports, respectively, forcing the shutdown of those fields. For the first week of September, EIA estimates that crude oil production averaged around 200,000 to 230,000 bbl/d.

Producing oil fields: The Bouri and Al-Jurf offshore fields are producing at their normal rates. Areas producing at reduced rates are: the fields controlled by the Arabian Gulf Oil Co. (Agoco), the Waha Consortium fields, fields going to the Marsa al Brega port, and condensate, mainly from the Wafa gas field, which is typically mixed with crude oil from the El Feel field before it is exported. With the exception of the offshore fields, production is mainly being used to support company operations and supply the Zawiya refinery.

Refineries

The Zawiya refinery is being supplied by crude oil loaded at the Marsa al Brega port after the shutdown of the El Sharara field. Libya's National Oil Company reported in early September that there were sit-ins by a small number of guards at the refinery entrance. The country's largest refinery, Ras Lanuf, with a

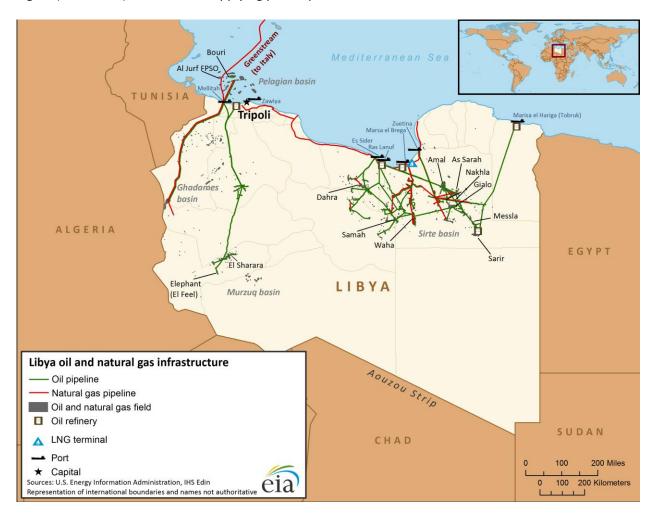
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 $^{^{1}}$ There was only one lifting from the Ras Lanuf port of 980,000 barrels of crude oil in the beginning of August.

capacity of 220,000-bbl/ d^2 , is reportedly not operating. The status of the smaller refineries (the 8,000-bbl/d Marsa al Brega (Sirte), 10,000-bbl/d Sarir, and 20,000-bbl/d Tobruk refineries) is unknown.

Natural gas production and exports

Production at the onshore Wafa and offshore Bahr Essalam gas fields has been mostly unaffected, but export volumes through the Greenstream pipeline (to Italy) are unknown. Production from the Wafa gas field is also being used for local power plants. Armed groups have reportedly threatened to close the Wafa field, according to Reuters. Reuters reported last week that many of the gas fields in the eastern region (Sirte Basin), which were supplying power plants, have been shut.



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² Capacity estimates are from the Oil and Gas Journal.