Strait of Hormuz – Factsheet

Overview

Oil

20 million barrels a day (mb/d), accounting for nearly 30% of world oil trade, transits the Strait of Hormuz (SoH) with 70% destined for Asia.

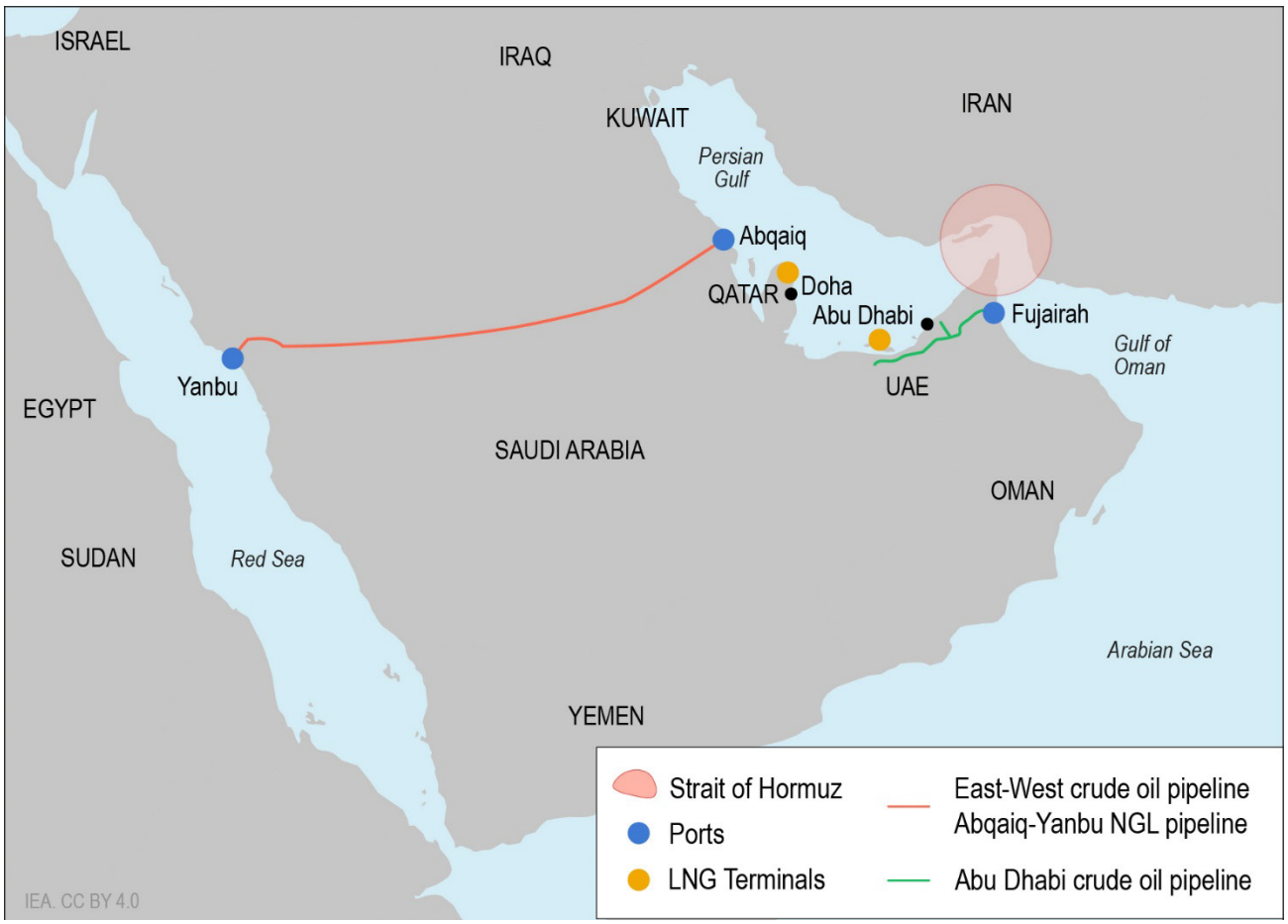
4.2 mb/d of pipeline capacity is available to re-direct crude flows to avoid the SoH.

Lasting disruptions unlikely, but even if short-lived would have significant impact on oil markets.

Natural gas

All LNG exports from Qatar and the UAE transit the SoH – 20% of global LNG trade.

There are no alternative means of bringing these volumes to market



The Strait of Hormuz (SoH) is a narrow sea passage, which runs between Oman and Iran. It connects Middle East Gulf oil and gas producers with the global export markets. At its narrowest point, the SoH is only 29 nautical miles wide (54 km). The Strait consists of 2-mile-wide navigable channels (3 km) for inbound and outbound shipping as well as a 2-mile-wide buffer zone.

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The SoH is a critical chokepoint for the transit of oil. An average of 20 mb/d of oil flows have been shipped in the first ten months of 2023. With nearly 30% of world's seaborne oil trade moving through the SoH and limited options to bypass it, any disruption to flows through the Strait would have significant consequences for world oil markets.

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A closure of the SoH would also have significant implications for global gas trade., shutting LNG exports from Qatar and the UAE, which together represent 20% of global LNG exports would be shut-in, with no alternative routes to export markets.

Oil

The SoH is the primary export route for oil pumped by Saudi Arabia, the UAE, Kuwait, Qatar, Iraq and Iran. Apart from physically disrupting oil shipments from these countries, any prolonged crisis in the SoH could also render unavailable the vast majority of the world's spare production capacity – most of which is held by Saudi Arabia. The bulk of the oil leaving the SoH heads to Asian countries, with China, India and Japan importing the most.

In the event of a disruption, 6.5 mb/d of crude oil could be exported from the Gulf via alternative routes including Saudi Arabia's pipeline to the Red Sea and the UAE's pipeline to the Port of Fujairah. Unlike Saudi Arabia, the UAE and Iraq, which all have export routes that do not pass the SoH, Iran relies exclusively on its Gulf terminals to export to markets outside the Caspian region. Nearly all its oil is being shipped to China, in defiance of US sanctions.

Exports through the Strat if Hormuz (mb/d), between January and October 2023

	Crude (incl. condensates)	Products	Total
Bahrain		0.18	0.18
Iran	1.26	0.56	1.83
Iraq	3.33	0.32	3.65
Kuwait	1.57	0.86	2.43
Quatar	0.82	0.65	1.47
Saudi Arabia	6.31	0.80	7.11
UAE	2.08	1.30	3.38
Saudi-Kuwaiti Neutral Zone	0.28		0.28
Total Hormuz	**15.65**	**4.68**	**20.33**

Source: IEA analysis based on Kpler.

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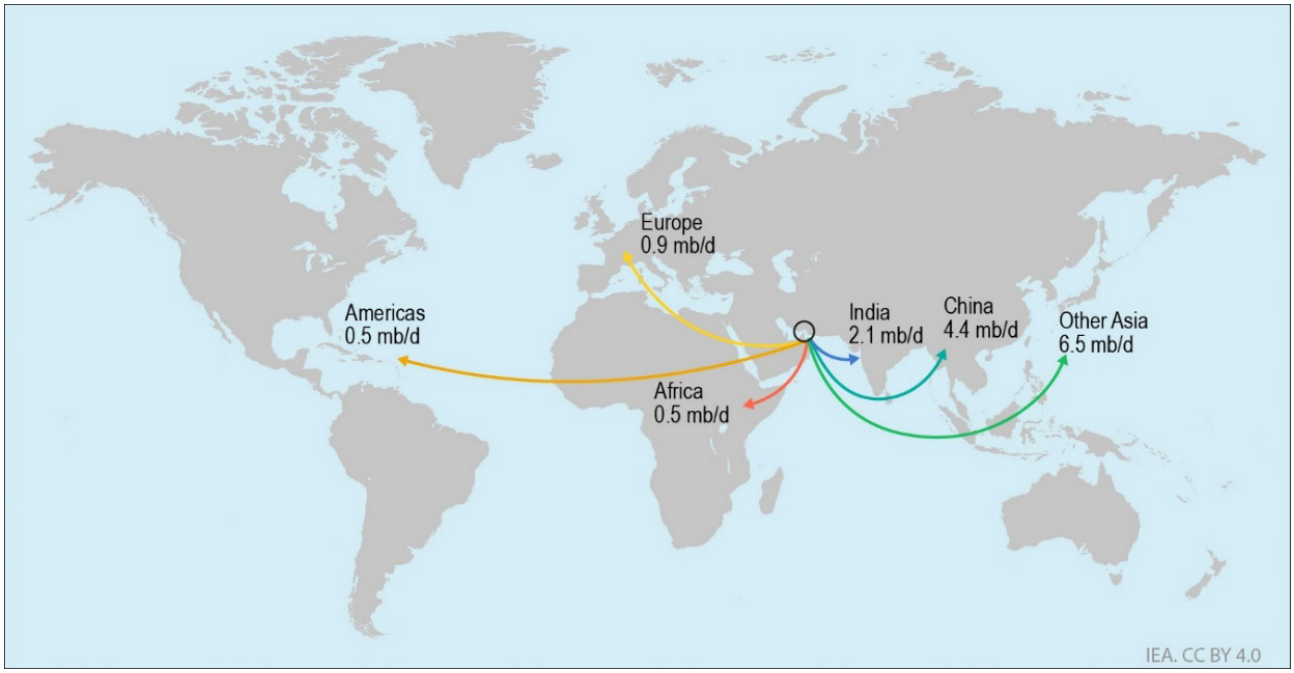
Crude oil exports

From January through October 2023, 16 mb/d of crude oil, nearly 40% of global crude oil trade, has passed through the SoH. India and China account for most of this while IEA countries are importing some 30% of crude oil transiting the SoH. Japan and Korea are particularly reliant on flows from the Gulf too. Since Russia's invasion of Ukraine, buyers in Europe have accounted for a growing share of crude exports from the region to offset those banned from Russia. Around 900 kb/d or just over 5% of the region's crude flows are now being routed into Europe compared with 700 kb/d before Russia's invasion of Ukraine in early 2022



Total exports do not match sum of individual destinations as some exports' destination are unknown.

Source: IEA analysis based on Kpler.

Oil product exports

Although the proportion of global oil product trade transiting the SoH is much lower than for crude oil, nearly 5 mb/d has been exported from the Gulf over the January through October 2023 period, with Asia again dominating demand from the region.

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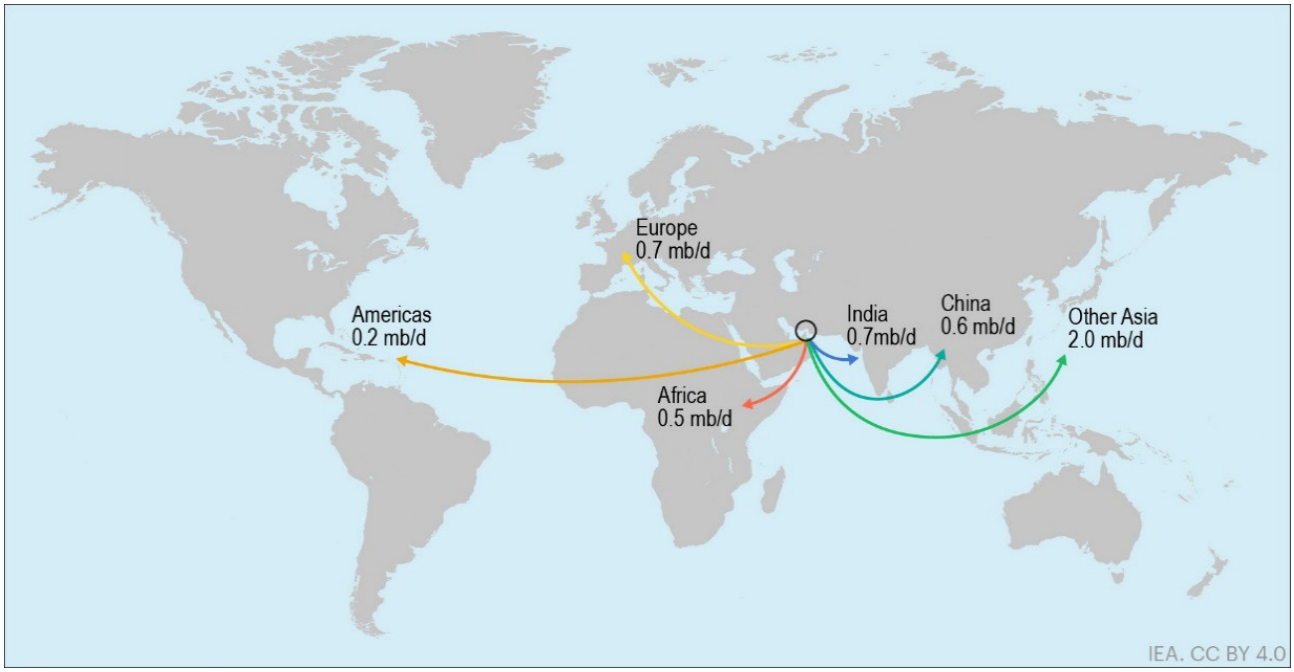

Total does not match sum of adding individual numbers as there are some unknown destinated barrels.

Source: IEA analysis based on Kpler.

Alternative export routes

Alternative routes to ensure exports keep flowing are limited. Only Saudi Arabia, the UAE and Iraq have functional pipelines to move oil to terminals outside of the Gulf. It is estimated that available pipeline capacity amounts to 4.2 mb/d to help re-route crude oil that would otherwise have transited the SoH. This is one quarter of the average daily volume shipped via the SoH in 2023.

UAE – the Abu Dhabi Crude Oil Pipeline (ADCOP) runs 400 km from onshore oil facilities at Habshan to Fujairah. The nameplate capacity of the line is 1.5 mb/d. An estimated 600 kb/d is being exported via this route, leaving room for 900 kb/d able to be re-routed in the case of a SoH closure.

Saudi Arabia – the Abqaiq-Yanbu pipeline system (East-West Crude Pipeline or Petroline) crosses Saudi Arabia, connecting Abqaiq to Yanbu on the Red Sea. The system is composed of two lines with a total design capacity of 5 mb/d of crude oil. It's estimated that 1.7 mb/d of the line's capacity is used, leaving about 3.3 mb/d of spare capacity.

There is also a natural gas liquids pipeline running parallel to the **Petroline, the Abqaiq-Yanbu NGL pipeline**, with a capacity of 300 kb/d which is fully utilised.

Potential market impact

The sheer volume of oil that is exported via the SoH and the limited options to bypass it means that any disruption to flows would have huge consequences for world oil markets. A significant spike in oil prices would be inevitable and physical shortages would quickly develop if the disruption were to be prolonged.

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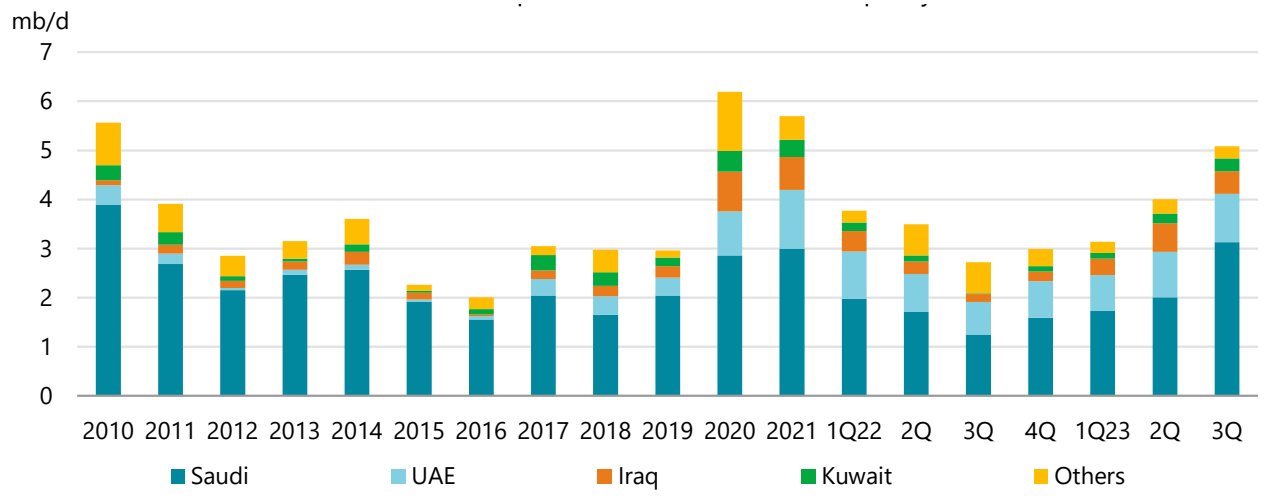
OPEC effective space crude oil production capacity



*Excludes Iranian crude shut in by sanctions.

The world's spare crude oil production capacity, held almost entirely by Middle East OPEC countries - and primarily Saudi Arabia (60%) -was running at more than 5 mb/d in the third quarter of 2023. Barring the 2020-21 Covid-19 period, that's the highest level of surplus since 2010.

Natural gas

Exports

With the exception of deliveries to Kuwait, the entirety of LNG exports from Qatar and the UAE transits the SoH. Qatar is currently the world's second largest LNG exporter, with total exports of close to 90 bcm in the first ten months of 2023 while the UAE exported a more modest 5.5 bcm. The total volume of LNG transiting the SoH was 90 bcm in the first ten months of 2023, equating to 20% of global LNG trade.

There are no viable alternative routes to supply natural gas from Qatar or the UAE to the global LNG market. Qatar supplies piped gas to UAE and Oman via the Dolphin pipeline (around 20 bcm in 2022), however the pipeline has limited spare capacity, while Oman's LNG export terminals had a utilisation rate of close to 100%.

Asian markets were the main destination for LNG from Qatar and UAE in the first ten months of 2023. Around 80% of the total volumes exported via the SoH was destined for the Asian market, while the share for Europe was almost 20%. LNG delivered via SoH accounted for almost 25% of Asia's total LNG imports in the first ten months of 2023 and for 13% of Europe's total LNG inflows over the same period

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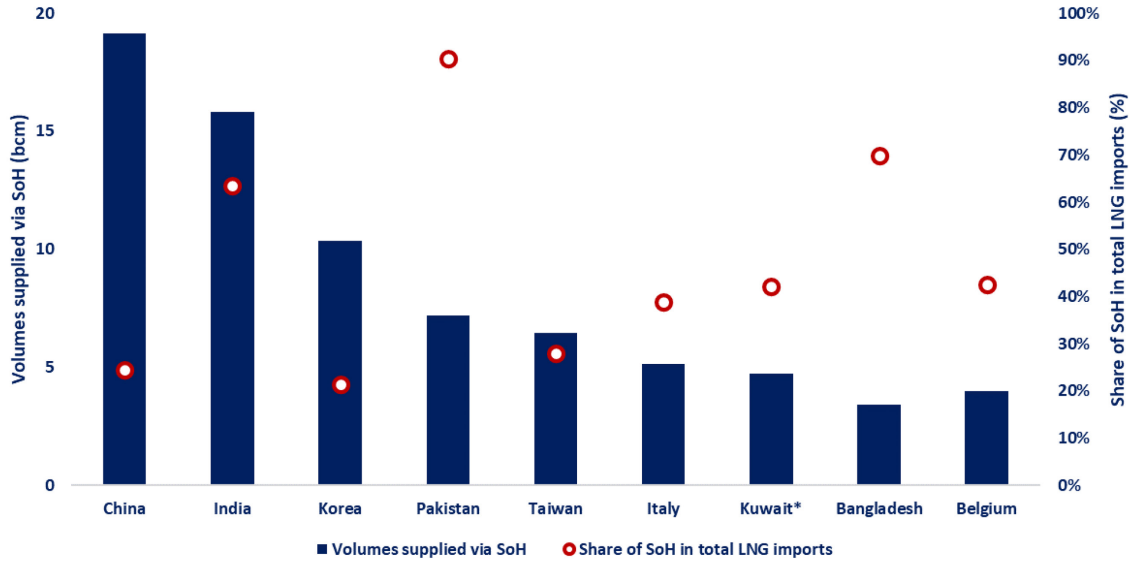
Largest LNG import markets relying on SoH and the share of SoH transit in their total LNG imports (10 months of 2023)



*In the case of Kuwait, non-Qatari and non-UAE imports are accounted which need to transit via SoH.
Source: ICIS (2023), LNG Edge.

Potential market impact

A disruption to LNG flows transiting the SoH would represent a major supply shock to the global gas market given Qatar's pivotal role in global LNG trade, and the inability to bring this LNG to the market through alternative routes. Global LNG supply would drop by around 295 million cubic meters per day - almost double the average gas supplies through Nord Stream in 2021. Considering that LNG liquefaction plants in other export markets are running close to nameplate capacity, it would be impossible to replace these lost volumes.

The loss of almost 20% of global LNG supply would fuel price volatility and require further demand adjustments across key Asian and European import markets. Countries with a strong reliance on LNG from Qatar and UAE – whether through long-term contracts and short-term procurements - would be strongly impacted.

Bangladesh, India and Pakistan imported almost 70% of their total LNG supplies via SoH in the first ten months of 2023, making them particularly vulnerable to potential disruptions to transit flows. Moreover, natural gas dominates the power sector of Bangladesh and Pakistan, with gas-fired generation accounting for 60% and 35% of their electricity supply mix respectively. Hence, inadequate LNG supplies would translate into a deterioration of electricity supply security in those price sensitive markets and could lead to production curtailments in their gas-intensive industries (including fertilisers).

The effects of the supply shock will be felt well-beyond the markets directly relying on LNG from Qatar and the UAE. The shortfall in these supplies will naturally exacerbate the competition for spot LNG volumes and put strong upward pressure on spot LNG prices both in Asia and Europe. A supply shock of such magnitude will ultimately necessitate demand side adjustments, including minimising gas-fired generation in the power sector, demand savings in public buildings and production curtailments in the gas- and energy-intensive industrial sectors.

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