



Regional Analysis Brief: South China Sea

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Overview

- The South China Sea is a critical world trade route. In 2023, 10 billion barrels of petroleum and petroleum product and 6.7 trillion cubic feet (Tcf) of liquefied natural gas (LNG) passed through the South China Sea.¹ The sea stretches from Singapore and the Strait of Malacca in the southwest to the Strait of Taiwan in the northeast (Map 1). The sea is rich in resources, holds high potential to be a source for hydrocarbons, and has significant strategic and political importance.

Map 1. South China Sea



Source: World Bank and U.S. Energy Information Administration

Note: Representation of international boundaries is not necessarily authoritative.

- The South China Sea includes several hundred geographic features, such as small islands, rocks, and reefs, and the majority are located in the Paracel and Spratly Island chains. These island chains spread over vast areas, and many islands are partially submerged land masses unsuitable for habitation. For example, the Spratly Islands area spreads across 158,000 square miles; however, the total habitable land area encompasses less than 3 square miles.²
- Several of the countries bordering the South China Sea declare sovereignty of some portion of the islands as a way to claim the surrounding sea and its resources. This has led to all features in the Spratly and Paracel Island chains being contested. The Gulf of Thailand borders the South China Sea, and although technically not part of the sea, the complex coastal geography of the Gulf of Thailand has created disputes among surrounding countries (Thailand, Malaysia, Cambodia, and Vietnam) over who owns the islands in the Gulf and the Gulf's resources.³
- The South China Sea offers the potential for significant natural gas discoveries, creating an incentive to secure larger parts of the area for domestic production.⁴ Asia's economic growth increases demand for energy in the region. Total liquid fuels consumption in the Asia-Pacific region rose 1.1% in 2022 and accounted for 36% of total world consumption. We project this growth to increase 1.3% annually and to account for 43% of total world consumption in 2050. Similarly, the Asia-Pacific region's projected natural gas consumption grows by 1.6% annually. Its share of world natural gas consumption increases from 23% in 2022 to 28% in 2050.⁵

Reserves and Resources

- The South China Sea is underexplored because of territorial disputes. Most discovered oil and natural gas fields are in uncontested areas, close to the shorelines. Approximately 3.6 billion barrels (b) of petroleum and other liquids and 40.3 trillion

cubic feet (Tcf) of natural gas in proved and probable reserves are in the South China Sea, according to Rystad.

Table 1. South China Sea reserves by country, 2023

Country	Liquids proved and probable reserves (million barrels)	Natural gas proved and probable reserves (trillion cubic feet)
Indonesia	44	1.1
Philippines	17	0.4
Malaysia	1,284	28.9
Brunei	299	1.9
China	1,423	5.7
Vietnam	530	2.3
Total	3,596	40.3

Data source: Rystad Energy, *CubeBrowser*

Map 2. South China Sea oil and natural gas basins



Source: U.S. Geological Survey, World Bank, ESRI, and U.S. Energy Information Administration

Note: Representation of international boundaries is not necessarily authoritative.

- In addition to proved and probable reserves, the South China Sea may have additional hydrocarbons in underexplored areas. In 2023, the U.S. Geological Survey (USGS) analyzed the potential for undiscovered conventional oil and natural gas fields within several geologic provinces of Southeast Asia as part of its World Petroleum Resources Assessment Project.
- The USGS project included 13 basins, the South China Sea platform, and the Palawan Shelf within the South China Sea (Map 2). Collectively, the USGS estimates these areas may contain anywhere between 2.4 billion barrels and 9.2 billion barrels of petroleum

and other liquids and between 62 Tcf and 216 Tcf of natural gas in undiscovered resources (including several basins with portions that run outside of the South China Sea, on land, or both). Because the USGS did not examine the entire area, undiscovered resources could be greater. These additional resources are not considered commercial reserves at this time because the economic feasibility to extract them is unclear.⁶

Territorial Claims

Uncontested areas

- Most current reserves exist in shallow water basins on the boundaries of the sea. A significant portion of water basins that hold larger amounts of proven oil reserves are uncontested because they fall within clearly defined waters, such as those found north of Malaysia and Brunei and south of Vietnam.⁷
- Vietnam, Malaysia, and Brunei have a long history of development in the South China Sea. Without significant onshore potential, they have invested in offshore technology, pipeline networks, and drilling.

Contested areas

Paracel Islands

- The Paracel Island territory sits just outside of the Qiongdongnan Basin and does not have any proved or probable reserves. Geologic evidence suggests the area lacks significant potential in terms of conventional hydrocarbons. China, Taiwan, and Vietnam all claim the Paracel Islands.⁸
- China occupies Woody Island, the largest of the Paracel Islands. The island has an estimated population of over a 1,000 people and a military installation. It also has a military airport and port facilities.⁹

Spratly Islands

- The Spratly Island chain is made up of over 100 small islands and reefs.¹⁰ The largest feature is the 90-acre Itu Aba Island.¹¹ The Spratly Island territory may have significant deposits of undiscovered hydrocarbons. The Spratly Islands are in the South China platform, which the USGS estimates to have between 0.9 billion barrels and 3.0 billion barrels (mean 2.1 billion barrels) of petroleum and other liquids and between 0.0 Tcf

and 16.2 Tcf (mean 8.0 Tcf) of natural gas in undiscovered resources.¹² China, Taiwan, and Vietnam each claim all of the Spratly Islands. Meanwhile, Brunei, Malaysia, and the Philippines only claim some of the islands.¹³

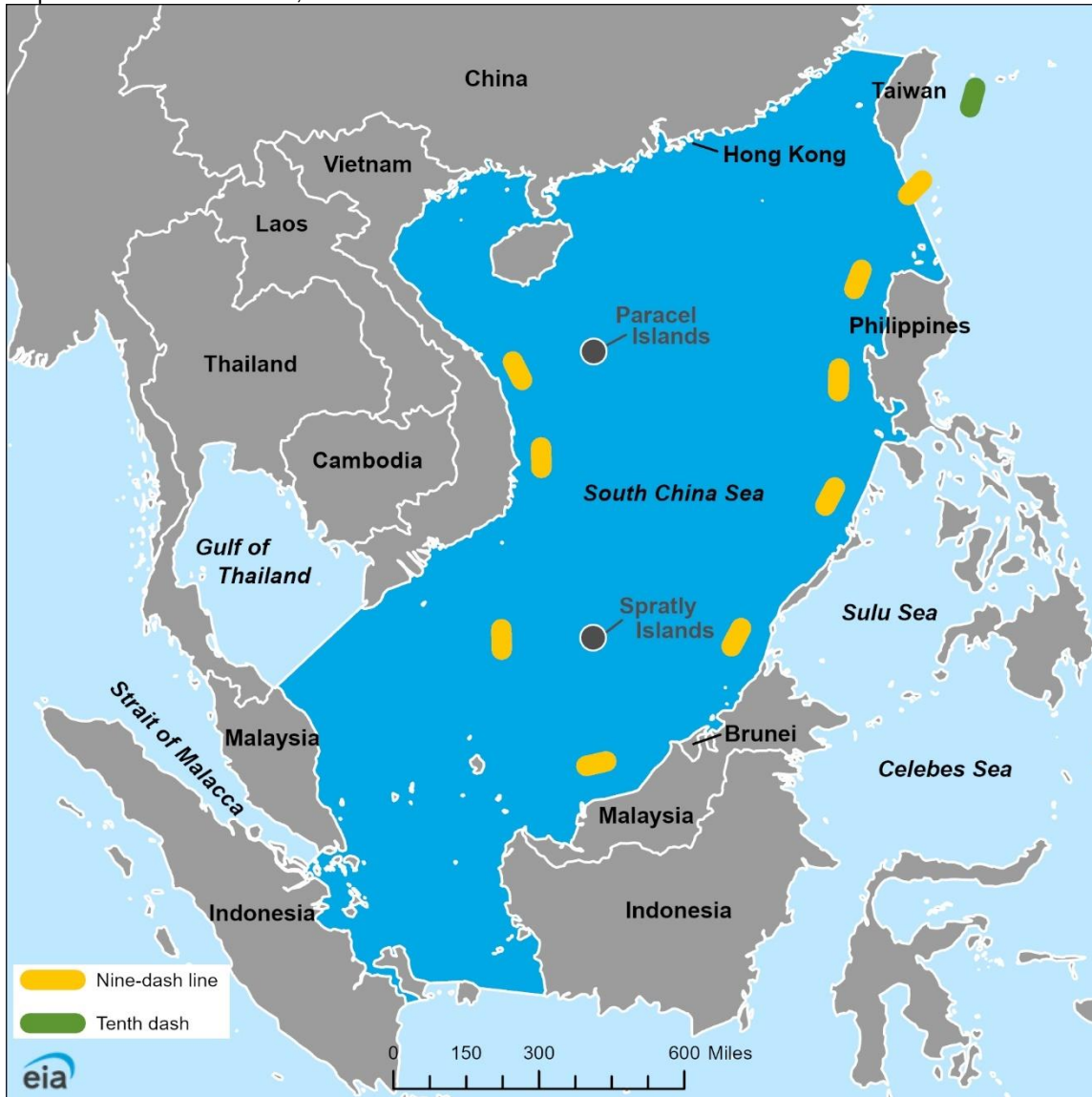
Brunei

- Brunei claims a 200-nautical mile exclusive economic zone (EEZ). The EEZ overlaps with China's 10-dash line (see section on China for more details) and claims the uninhabited Louisa Reef, which is part of the Spratly Islands. Brunei and Malaysia have agreed on the delimitation of maritime boundaries, territorial seas, the continental shelf, and EEZs, and have come to a commercial arrangement agreement for oil and natural gas.¹⁴

China

- China claims the largest area of the South China Sea. In 1947, China issued an official map with an 11-dash line that outlined the extent of its territories but reduced it to the 9-dash line in 1952. However, China has neither given specifics on all that the 9-dash line claims nor included coordinates. The 9-dash line is generally interpreted as the simplified border for China's territory. However, China uses the 9-dash line to identify: islands and features in the South China Sea it claims sovereignty over, maritime zones the United Nations Convention on the Law of Sea governs, and waters over which China claims it has some rights.¹⁵
- In August 2023, China's Ministry of Natural Resources released its new map, which added a dash to the 9-dash line off the eastern coast of Taiwan to form a 10-dash line (Map 3). The new line claims almost the entirety of the South China Sea. Similar to the 9-dash line, the 10-dash line was denounced by several countries.¹⁶
- China has seven outposts in the Spratly Islands. Three of the outposts, located on Fiery Cross, Mischief, and Subi Reefs, contain air bases with other military infrastructure. The infrastructure includes facilities such as barracks, surveillance radars, and naval ports. China's other four outposts are on the Cuarteron, Gavin, Hughes, and Johnson Reefs.

Map 3. China's ten-dash line, 2023



Source: World Bank and U.S. Energy Information Administration

Note: Based on 2023 edition of China's standard map from China's Ministry of Natural Resources. The 10-dash line is a representation and not meant to be authoritative.

Indonesia

- Indonesia claimed its EEZ and agreed with Vietnam over maritime boundaries in the South China Sea at the end of 2022. Details of the agreement are classified and have not been released.¹⁷ Indonesia has not stated a claim in the South China Sea disputes; however, China's 10-dash line overlaps with Indonesia's EEZ.¹⁸

Malaysia

- Malaysia claims 10 maritime features in the Spratly Islands, some of which are based on its claim to a continental shelf, as defined by a 1966 law and a 2009 joint submission with Vietnam to the Commission on the Limits of the Continental Shelf. Malaysia controls 7 of the 10 features. However, Vietnam and China also claim all of the features, and the Philippines claims a few of them. Malaysia also has two submerged systems, the James Shoal and Luconia Shoals, that are within the boundaries of the continental shelf region that China has claimed.¹⁹
- Malaysia has previously claimed the Louisa Reef, but after an agreement with Brunei was reached in 2009, its claim may have been dropped. However, few details about the agreement have been released.²⁰
- Malaysia has five outposts in the southern part of the Spratly Islands. The outpost on Shallow Reef has an airstrip, and the outposts on Ardasier Reef, Eric Reef, Mariveles Reef, and Investigator Shoals have helipads.

Philippines

- The Philippines claims a large northeast portion of the Spratly Islands, calling it the Kalayaan (Freedom) Island Group, and occupies several of the islands. It also claims the Scarborough Shoal, which China and Taiwan also claim and which is patrolled by Chinese law enforcement vessels. The Philippines EEZ and continental shelf overlap with China's 10-dash line.²¹
- The Philippines has nine outposts in the Spratly Islands. The Pag-asa Island outpost is the largest and includes a runway and military garrison. The others are Rizal Reef, Lawak Island, Panata Island, Loaita Island, Northeast Cay, West York Island, Flat Island, and Second Thomas Shoal.²²

Taiwan

- Taiwan, like China, asserts *historic* sovereignty over all features drawn within the 10-dash line—including the Spratly Islands, Paracel Islands, Pratas Island, and Scarborough Reef. Taiwan occupies Itu Aba Island and administers Pratas Island.²³ A coast guard outpost and airstrip may be maintained on the island.²⁴

Thailand

- Thailand has no claims in the South China Sea.

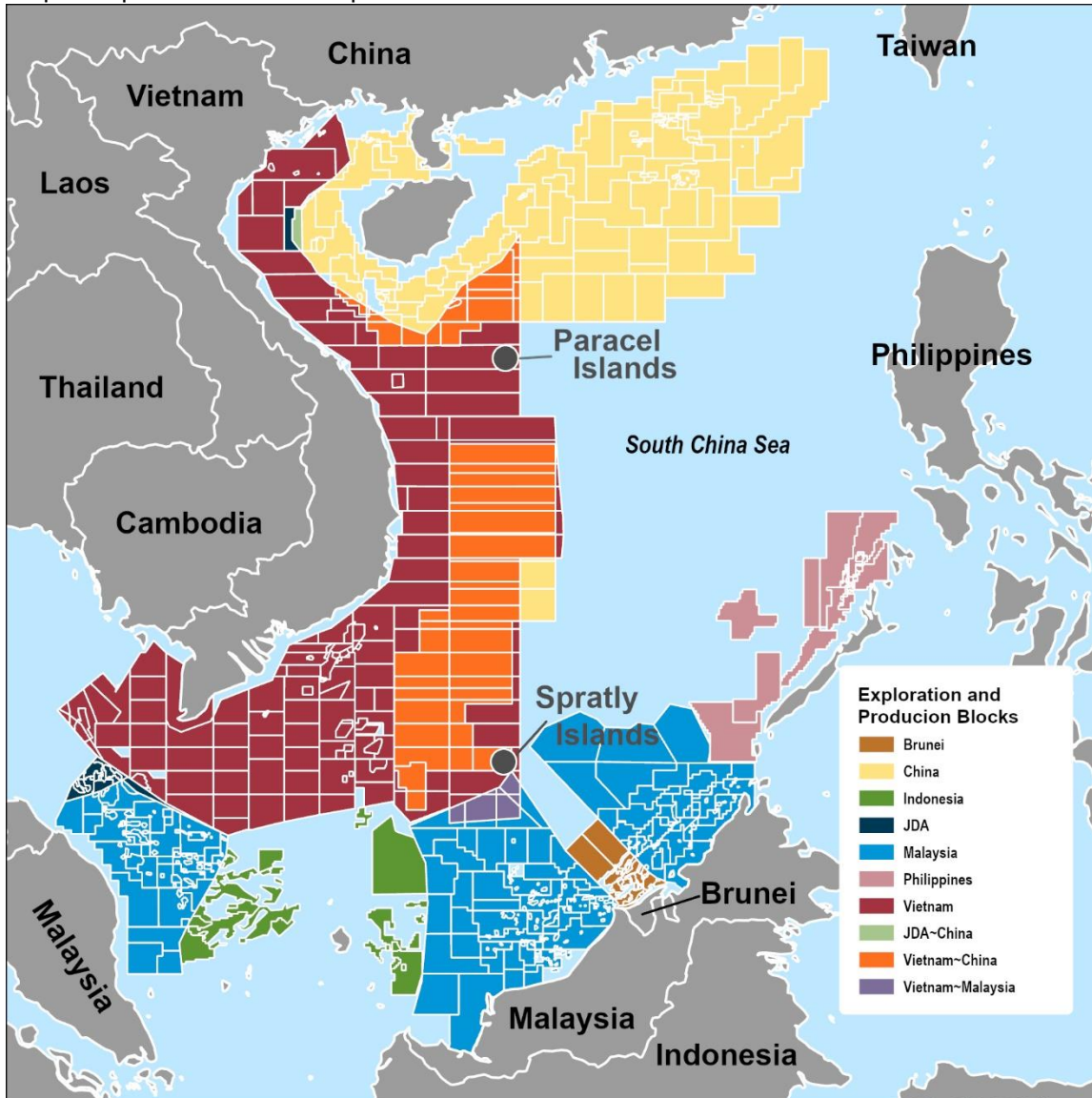
Vietnam

- Vietnam claims both the Spratly and Paracel Islands. Vietnam occupies the most land features in the Spratly Islands.²⁵ Through landfilling, Vietnam has created approximately 420 acres of new land in 2022, expanding its occupied area on the Spratly Islands to 540 acres. Vietnam's four major expansions are on the Pearson Reef, Tennent Reef, Sand Cay, and Namyit Island. Vietnam has also started expanding on the Barque Canada Reef, Alison Reef, Cornwallis South Reef, Discovery Great Reef, and Ladd Reef.²⁶

Exploration and Production

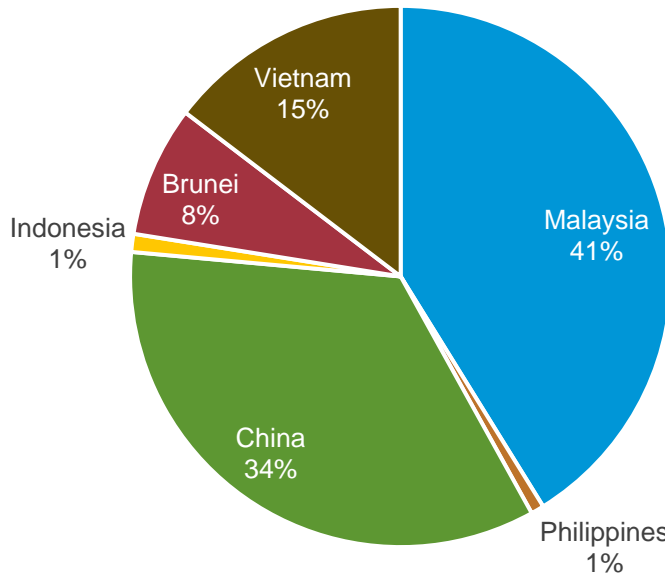
The South China Sea has extensive geological, technological, and political challenges to developing its resources. Countries have been successful in oil and natural gas production near the shorelines of the South China Sea. However, most of the area presents various challenges to development that can become more complex as they get further from the coastline.

Map 4. Exploration and development blocks in the South China Sea



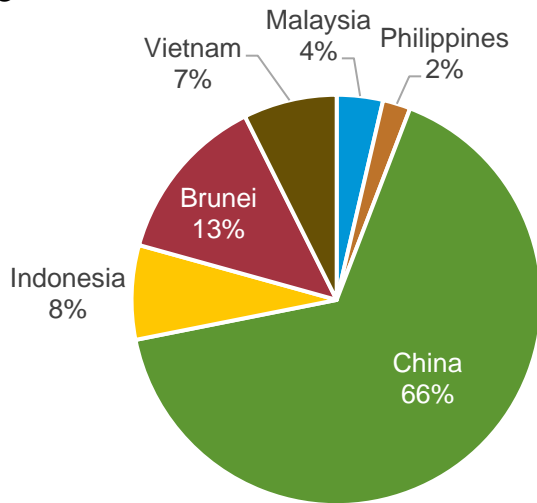
Source: World Bank, CSIS Asia Maritime Transparency Initiative and the U.S. Energy Information Administration
Note: JDA=Joint Development Agreement

Figure 1. South China Sea petroleum and other liquids production by country, 2023



Data source: Rystad Energy, *Cube Browser*

Figure 2. South China Sea natural gas production by country, 2023



Data source: Rystad Energy, *Cube Browser*

Brunei

- The Brunei National Petroleum Company (PetroleumBRUNEI) manages Brunei’s offshore activities. Brunei-Shell Petroleum (BSP), a joint venture between Shell and the

government, is the largest crude oil producer in the country and is responsible for about 90% of Brunei oil and natural gas revenue.²⁷

- Champion, Brunei's largest offshore oil and natural gas field, began production in 1972. In 2022, it produced more than 60% of Brunei's oil production and holds over 40% of its proven reserves.²⁸ The Southwest Ampa natural gas field accounts for more than half of the country's natural gas reserves and production. It supplies Brunei's natural gas liquefaction plant in Lumut.²⁹
- Production in the maturing Champion field has been declining and new discoveries will need to be made to help offset the decline. BSP is currently leading the efforts for deepwater exploration, and brownfield redevelopment projects are also set to take place, including in the Champion field.³⁰ In 2023, Brunei produced an average of 93,000 b/d of petroleum and other liquids and 134 billion cubic feet (Bcf) of natural gas from the South China Sea, according to Rystad.³¹

China

- China's natural gas and oil production have grown since 2018 as they have continued to advance into deepwater areas in the South China Sea.³² The three major national oil companies (NOC), China National Offshore Oil Corporation (CNOOC), China Petroleum & Chemical Corporation (Sinopec), and China National Petroleum Corporation (CNPC), are responsible for developing South China Sea's resources. In 2023, China produced 410,000 b/d of petroleum liquids and 489 Bcf of natural gas from the South China Sea, according to Rystad.³³
- CNOOC has the most experience with offshore oil production and has invested the most into offshore development. According to its 2022 annual report, CNOOC produced an average of 394,000 b/d of crude oil and 1.1 Bcf/d of natural gas in the South China Sea that year. Activities in the South China Sea accounted for 43% of CNOOC's crude oil production and almost 60% of natural gas production.
- In December 2022, CNOOC started operations of Enping 15-1, 10-2, 15-2, and 20-4 oil fields in the eastern South China Sea. Peak production (35,500 b/d) is expected to be achieved by 2024, according to CNOOC.³⁴ Enping 18-6 oil field will start production in 2023 and have a peak production of 9,300 b/d, which they are expected to reach by

2024.³⁵ In September 2023, production started in their Lufeng 12-3 project. The project is expected to reach peak production of 29,000 b/d in 2024, according to CNOOC.³⁶

- CNOOC also has plans to build a natural gas production hub in the Pearl River Mouth. As part of this plan, it has applied to the country's Ministry of Natural Resources for an environmental impact assessment to begin developing Ledong 10-1 in the Yinggehai Basin in the South China Sea.³⁷
- CNOOC had four new discoveries in the South China Sea in 2022. In the western part of the South China Sea are Wenchang 19-3, Weizhou 12-8E, and Yacheng 13-10, and in the eastern part is Liuhua 28-2W.³⁸
- CNPC and Sinopec are less active in the area. CNPC largely focuses on offshore drilling activities in the Bohai Bay, which is not in the South China Sea, although it provides offshore drilling equipment to other companies.
- CNOOC has the exclusive right to offer product-sharing contracts (PSCs) with foreign companies to partner in exploring, developing, and producing oil and natural gas in offshore China.³⁹
- In 2021, the United States blacklisted CNOOC, accusing the NOC of helping China intimidate neighboring countries in the South China Sea. The economic blacklist prevents U.S. firms from exporting or transferring technologies with CNOOC without gaining a special license from the U.S. Department of Commerce.⁴⁰

Indonesia

- Indonesia's oldest oil fields, including Duri and Minas, are mostly located offshore east and south of Sumatra outside the South China Sea. Duri and Minas, once the largest producing fields, produced approximately 159,000 b/d in 2022. Indonesia's NOC, Pertamina, took over operations of the Duri field from Chevron in August 2021. The company plans to raise production to 180,000 b/d, which includes new wells added in 2022 and upgrading existing facilities.⁴¹
- Similarly, most natural gas reserves are located near the Arun field in Aceh or in the Bada field in East Kalimantan, which are located outside the South China Sea. The fields' locations limit the participation Indonesia has in developing resources in the South China Sea. In 2023, Indonesia produced only 13,000 b/d of petroleum and other liquids from the South China Sea and 134 Bcf (0.37 bcf/d) of natural gas, according to Rystad.⁴²

- Pertamina has begun to focus more on developing fields in South China Sea fields, such as the offshore Tuna natural gas field near the Natuna Islands. In early 2023, the Indonesian government approved development of the Tuna natural gas field, which is expected to produce 115 million cubic feet (MMcf) per day starting in 2027, according to SKK Migas, the country's oil and natural gas regulator. The \$3 billion project will sell natural gas to Vietnam via pipeline to the Nam Con Son project. Although the field is within Indonesia's 200 nautical mile EEZ, its location hasn't prevented China from opposing the development based on its 10-dash line claim.⁴³

Malaysia

- The state's NOC, PETRONAS, holds most of the country's oil and natural gas assets and is Malaysia's biggest domestic oil and natural gas producer. The company's Peninsular Gas Utilization (PGU) system, made up of six processing plants and 1,600 miles of pipeline, forms a key link to offshore natural gas development in the South China Sea.⁴⁴
- Malaysia has several deepwater projects underway in the Sabah and Sarawak Basins. The Kasawari natural gas field has started development and has an estimated 3.2 Tcf of natural gas resources. Production from the field is estimated to reach 900 MMcf/d of natural gas, according to trade press.⁴⁵ In 2022, Malaysia signed production-sharing contracts (PSC) for five exploration blocks in the Sabah and Sarawak Basins (Table 3). Three discoveries were also made in Sarawak at the end of 2022: SK320 (September), SK306 (December), and SK410B (December).⁴⁶ In 2023, Malaysia produced 490,000 b/d of petroleum and other liquids from the South China Sea and 2.4 Tcf of natural gas.⁴⁷

Table 2. Malaysia offshore exploration blocks with signed production sharing contracts, 2022

Project	Location	Companies
Block SB412	Sabah Basin	PTTEP; SapuraOMV
Block 2W	Sabah Basin	Petronas Carigali; Shell
Block X	Sabah Basin	Petronas Carigali; Shell
Block SK439	Sarawak Basin	Sarawak Shell; Petroleum Sarawak E & P
Block Sk440	Sarawak Basin	Sarawak Shell; Petroleum Sarawak E& P

Data source: Cavcic, Melisa. “[Petronas Inks Deals for Five Offshore Blocks to Ramp up Exploration in Malaysia.](#)” Offshore Energy, March 12, 2023.

- Malaysia and Thailand agreed to develop a section of the Gulf of Thailand jointly without either party ceding legal rights to it. This Joint Development Area (JDA) consists of Block A-18, Block B-17, Block C-19, and Block B-17-01.⁴⁸

Philippines

- The Philippines’ production from the South China Sea is mostly natural gas. It produced 9,000 b/d of petroleum and other liquids compared with 80 Bcf in 2023, according to Rystad.⁴⁹
- The Malampaya natural gas platform located in the northern Palawan Basin is operated by the Malampayan Consortium (Prime Infrastructure Capital 45%, UC38 LLC 45%, and Philippine National Oil Company-Exploration Corp. 10%).⁵⁰ Drilling began in October 2001 with a reserve base of 2.7 Tcf and 85 million barrels of condensate. Production has been declining for several years. According to the Philippines’ Department of Energy, the field can produce an additional 210 Bcf, which is a little more than two years of consumption, based on 2021 numbers.⁵¹ President Ferdinand Marcos, Jr., extended the service contract, initially set to expire in February 2024, by 15 years.⁵² Under the commitment made to receive the extension, the consortium will invest \$600 million into drilling new wells in the field.⁵³
- The Philippines began exploring the Reed Bank area of the Spratly Islands in the 1970s and successfully tested a natural gas well in 1976. Before commercial drilling began, Chinese protests forced the operation to shut down. Since then, rights to the area have been highly contested. In 2013, the Philippines decided to submit the dispute to the

Permanent Court of Arbitration (PCA) in the Hague. In 2016, the PCA rejected the premise that China had historical claims to the Spratly Islands.⁵⁴ China refuses to recognize the decision, and a natural gas project in the area operated by PXP Energy Corporation, a Philippine firm, has been stalled.⁵⁵

Singapore

- Singapore is a major transit point and a refining center in the region. Singapore had a crude oil refining capacity of 1.3 million b/d in 2023.⁵⁶ NOC Singapore Petroleum Company is a partner in projects in the South China Sea with Indonesia, Vietnam, and China. Singapore Petroleum have a 15% share of Kakap PSC (Indonesia), which is in the Nantuna Sea, the southern part of the South China Sea. For Blocks 102 and 106 (Vietnam), which are located in the Song Hong Basin, they have a 23% share. Finally, in Blocks 04/36 (China), Singapore Petroleum Company has a 9% share and Unitized Area China has an 11% share. Both projects are located in Bohai Bay.⁵⁷

Thailand

- More than 60% of Thailand's crude oil production came from offshore fields in the Gulf of Thailand in 2022.⁵⁸ Chevron is the largest oil producer in Thailand, accounting for nearly 70% of the country's crude oil and condensate production in 2011. The largest oilfield is Chevron's Benjamas field located in the north Pattani Basin.⁵⁹ The field's production peaked in 2006 and declined to 13,000 b/d of crude oil and 45 MMscf per day of natural gas in 2023.⁶⁰ Independent companies such as Salamander Energy and Coastal Energy have made smaller discoveries over the years, such as the Bualuang, Songkhla, and Bua Ban fields.
- Almost all natural gas and condensate production comes from offshore fields in the Gulf of Thailand.⁶¹ PTT Total and BG Group have stakes in Thailand's largest producing field in the basin, named Bongkot. The field produced about 200 Bcf of natural gas and 6 million barrels of condensate in 2021.⁶²
- The Malaysia-Thailand Joint Development Area (JDA), located in the lower part of the Gulf of Thailand and northern part of the Malay Basin, provides some natural gas supplies to Thailand. However, production from the JDA has been declining.

Vietnam

- Vietnam hopes to expand offshore production in the South China Sea as a way of meeting domestic demand. In 2023, Vietnam produced 174,000 b/d of petroleum and other liquids and 271 Bcf of natural gas in the South China Sea, according to Rystad.⁶³ The government revised its Law on Petroleum (2008) in November 2022 to quicken the process for upstream activities and provide incentives for foreign investment.⁶⁴
- Vietnam's NOC PetroVietnam is responsible for all oil and natural gas activities. In a joint development, as Vietsovpetro, it operates Vietnam's largest oil field, Bach Ho. Because the field is in decline, exploring the South China Sea for resources is a possible solution to offset production losses at Bach Ho.⁶⁵
- Vietnam's attempts to develop resources in the South China Sea have been met with opposition. In 2017, Repsol canceled its project on the Vanguard Bank because of China's opposition. The following year, China opposed Vietnam's attempts to attract foreign investment into developing the South China Sea.⁶⁶ Despite China's opposition over the years, Vietnam plans to accept oil from the Tuna field via pipeline to its Nam Con Son Basin project. Nam Con Son is in the Vanguard Bank within China's 10-dash line.⁶⁷
- Other projects in the Nam Con Son Basin are the Sao Vang Dai Nguyet natural gas and condensate project, which is in Block 05-1B and Block 05-1C. The Japanese company Idemitsu Kosan operates the project. Harbour Energy started work to extend the production life of its projects in the Chim Sao and Dua fields in 2022. Production in 2022 was 4,000 boe/d, which is a decline from previous years, driven by field maturity and rig delivery delays.⁶⁸
- The Ca Voi Xanh, or *Blue Whale*, natural gas field is scheduled to be developed by PetroVietnam, ExxonMobil, and American Oil. The field has natural gas reserves of 5.3 Tcf, which would make it Vietnam's largest natural gas project. The field would consist of an offshore platform, natural gas treatment plant, and pipelines that would bring natural gas to shore and to four power plants. The project has been delayed for years, but in early 2023, Vietnam's Minister of Industry and Trade instructed government officials and PetroVietnam to agree on a natural gas supply contract to expedite the project.⁶⁹

- The Block B project is located off Vietnam’s southwestern coast and has a natural gas reserve of 3.8 Tcf. The project’s partners are PetroVietnam, Vietnam Electricity, Mitsui Oil Exploration, and PTT Exploration and Production. Similar to Ca Voi Xanh, Vietnam’s Minister has stepped in to accelerate the project.⁷⁰

Regional Conflicts and Mediation Efforts—Timeline

- January 2013—The Philippines began an international arbitration process under the United Nations Convention on the Law of the Sea (UNCLOS) against China for its sovereignty claims on the Spratly Islands and Scarborough Shoal. China refused to participate.⁷¹
- May 2013—Japan committed to providing patrol boats to the Philippines to aid its ability to counter China’s increasing presence in the South China Sea.⁷²
- November 2013—China creates the East China Sea Air Defense Identification Zone, which requires non-commercial aircraft to submit flight plans before entering the area that encompasses most of the East China Sea and the Senkaku (Diaoyu) Islands.⁷³ The Senkaku Islands are administered by the United States and are considered part of Japanese territory.⁷⁴
- April 2014—The Philippines signed a 10-year military pact with the United States to increase U.S. troop presence and joint military training.⁷⁵
- May 2014—Vietnamese and Chinese vessels collided in an altercation to prevent China from establishing an oil rig in contested waters. Each country claims the other rammed into its ships.⁷⁶
- November 2014—China and Japan reached a four-point agreement to improve diplomatic relations. Part of the agreement established a crisis management mechanism to prevent conflict and conflict escalation in the East China Sea.⁷⁷
- February 2016—China placed surface-to-air missiles on Woody Island in the Paracel Islands.⁷⁸
- July 2016—The Hague ruled in favor of the Philippines and found China’s “9-dash line” has no legal basis for its claims to historical rights on resources in the South China Sea.⁷⁹
- November 2016—The Philippines declared a no-fishing zone in the disputed Scarborough Shoal. Philippine President Duterte worked to strengthen economic ties with China and reopen dialogue on disputed territories.⁸⁰

- December 2016—China seized a U.S. Navy underwater drone in the South China Sea. China agreed to return the drone a few days later.⁸¹
- January 2018—A tanker carrying one million barrels of condensate collided with a ship carrying grain 160 nautical miles from Shanghai. The tanker exploded, killing all 32 crew members and creating the largest condensate spill on record.⁸²
- June 2018—China and Japan created a hotline to prevent accidents in the sea and air and agreed to hold regular meetings to maintain communications.⁸³
- September 2018—A U.S. Navy ship conducting a routine freedom of navigation operation near the Spratly Islands had a near collision with a Chinese destroyer. China claimed that its ship was defending Chinese sovereignty in the Spratly Islands.⁸⁴
- April 2019—After approximately 275 Chinese ships were reported to be seen near Pagasa Island from January thru March, Philippine President Duterte threatened to send troops on a “suicide mission” if Chinese actions persisted.⁸⁵
- July 2019—A Chinese survey ship with escort spent several months in Vietnam’s EEZ in an area China had previously attempted to prevent Vietnam from drilling in by using aggressive maritime maneuvers.⁸⁶
- February 2020—A Chinese military ship aimed its weapons system at a Philippine military ship in the Spratly Islands.⁸⁷
- March 2020—China started operations at research stations that include defense silos and military runways on Fiery Cross and Subi Reefs.⁸⁸
- April 2020—Vietnam lodged an official protest with China after a Chinese vessel rammed and sunk a Vietnamese fishing ship near the Paracel Islands.⁸⁹ China unilaterally established two administrative districts in the South China Sea: Xisha District, which covers the Paracel Islands and Macclesfield Bank, and Nansha District, which covers the Spratly Islands.⁹⁰
- March 2021—The Philippines protested 200 Chinese ships located at Whitsun Reef, which falls within its EEZ. China claimed they were fishing vessels; however, the Philippines claimed they were operated by military personnel.⁹¹
- November 2022—China forcibly seized debris from a suspected Chinese rocket that landed within Philippine waters as the Philippine Navy towed it away.⁹²
- December 2022—Indonesia and Vietnam agreed on their EEZ boundaries after 12 years of negotiations.⁹³

- February 2023—The Philippines agreed to allow the U.S. military to expand its presence in the country despite China’s objections. The expansion will add four military bases in the northern region of the country and expand the U.S. presence in the South China Sea.⁹⁴
- August 2023—The United States, Japan, and South Korea held a summit and made a public statement reaffirming their standing on the Hague’s 2016 ruling on China’s 9-dash line and denounced China’s aggressive behavior in the region.
- August 2023—China released a new version of its territory map that expands the 9-dash line to a 10-dash line. The new line includes Taiwan and most of the Spratly Islands. The map was rejected by India, Indonesia, Japan, Malaysia, the Philippines, Taiwan, and Vietnam.⁹⁵

Global Trade

- In 2023, 76 million barrels per day (b/d) of petroleum and petroleum product was shipped globally via maritime transport. Approximately 28 million b/d (37%) of those shipments traversed the South China Sea. Most of the maritime trade through the South China Sea passes through the Straits of Malacca, Sunda, and Lombok.⁹⁶
- The South China Sea is a critical world trade route, with 21% of global trade (\$3.4 trillion dollars) in 2016, the most recent year these data are available. China was the largest exporter, accounting for more than one-third of that trade, followed by Japan at 8%.⁹⁷

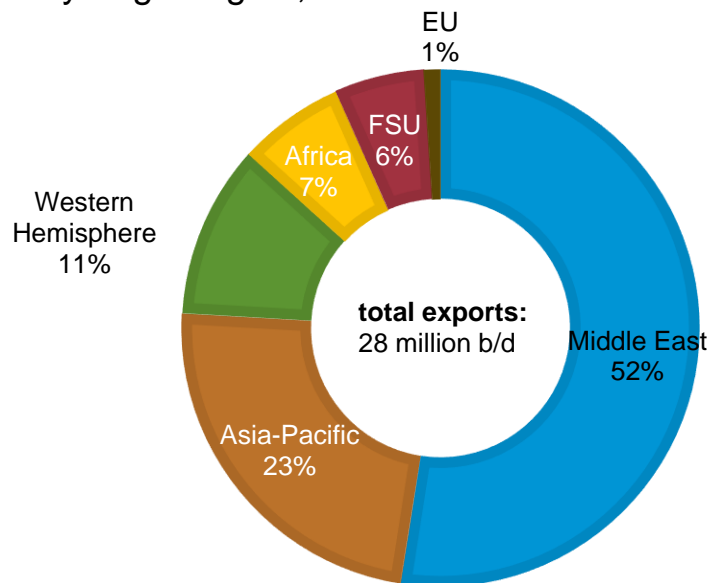
Table 3. Trade value through the South China Sea by country, 2016

Country	South China Sea trade value (USD billions)	South China Sea trade as percentage of all goods
China	\$1,470	39.5%
Japan	\$240	19.1%
Germany	\$215	9.0%
United States	\$208	5.7%
India	\$189	30.6%
United Kingdom	\$124	11.8%
France	\$84	7.8%
Brazil	\$77	23.4%
Italy	\$71	8.1%
Canada	\$22	2.7%
Total	\$2,700	

Data source: CSIS, China Power

- Slightly more than half of the petroleum and petroleum product shipments that go through the South China Sea originate from the Middle East (Figure 1). The top three sources of shipments are Saudi Arabia (4.9 million b/d), United Arab Emirates (3.4 million b/d), and Iraq (1.6 million b/d). The United States (1.5 million b/d) and Kuwait (1.5 million b/d) round out the top five (Figure 2).

Figure 3. Flows of petroleum and petroleum product in the South China Sea by origin region, 2023

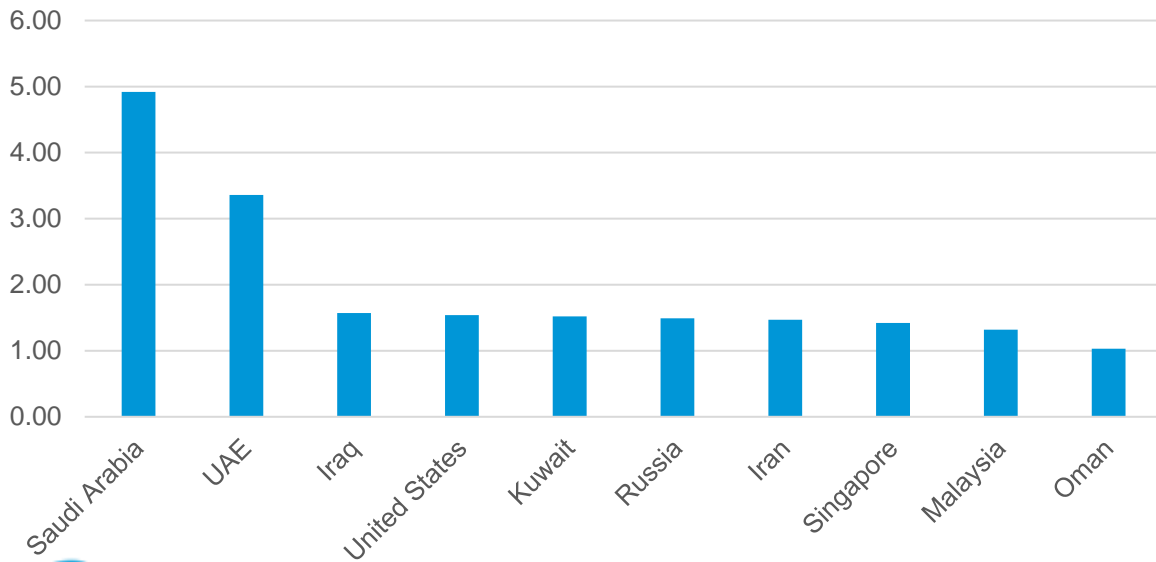


Data source: Vortexa

Note: Includes crudes/condensates, petroleum products, and LNG

Figure 4. Top 10 origins of petroleum and petroleum product flows in the South China Sea, 2023

million barrels per day



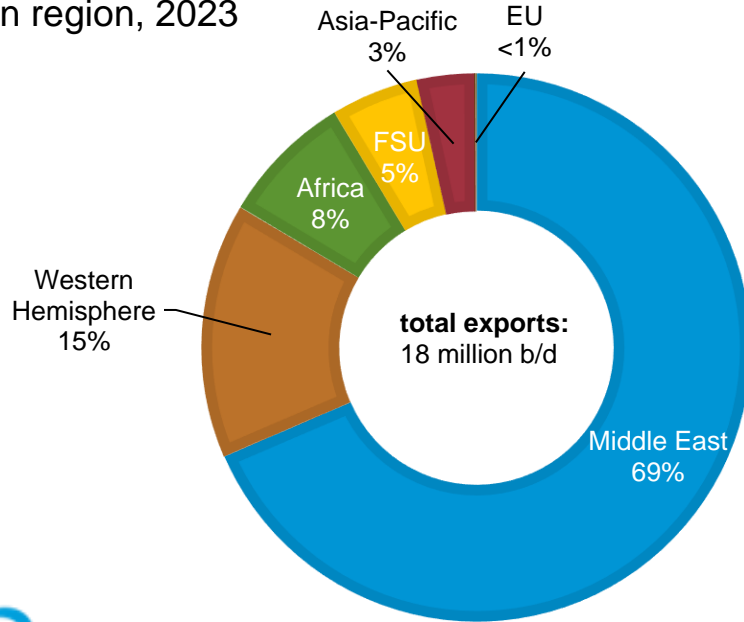
Data source: Vortexa

Note: Includes crudes/condensates, petroleum products, and LNG

Petroleum trade

- Approximately 18 million barrels per day (b/d) of crude oil and condensate passed through the South China Sea and Gulf of Thailand in 2023, which was 43% of global oil maritime shipments (Map 5). Most of these shipments go to China (50%), followed by South Korea (14%) and Japan (12%).⁹⁸
- Most of the crude oil and condensate shipments that passed through the South China Sea in 2023 originated in the Middle East (69%) (Figure 3). Saudi Arabia (4.4 million b/d) was the top source of crude oil and condensate exports, followed by the United Arab Emirates, Iraq, the United States, and Kuwait (Figure 4).

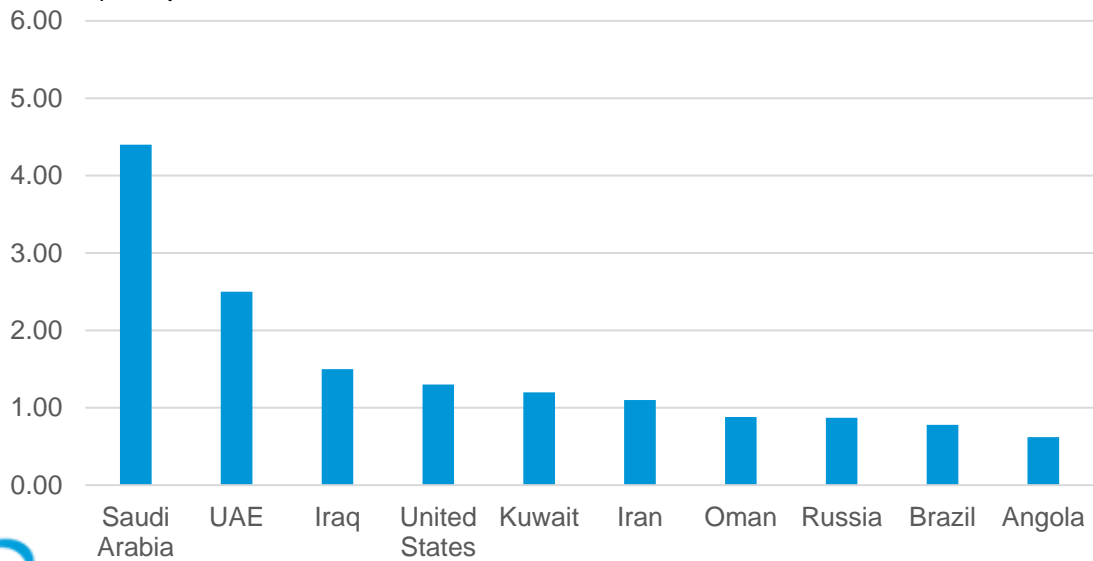
Figure 5. Flows of crude and condensate in the South China Sea by origin region, 2023



Data source: Vortexa

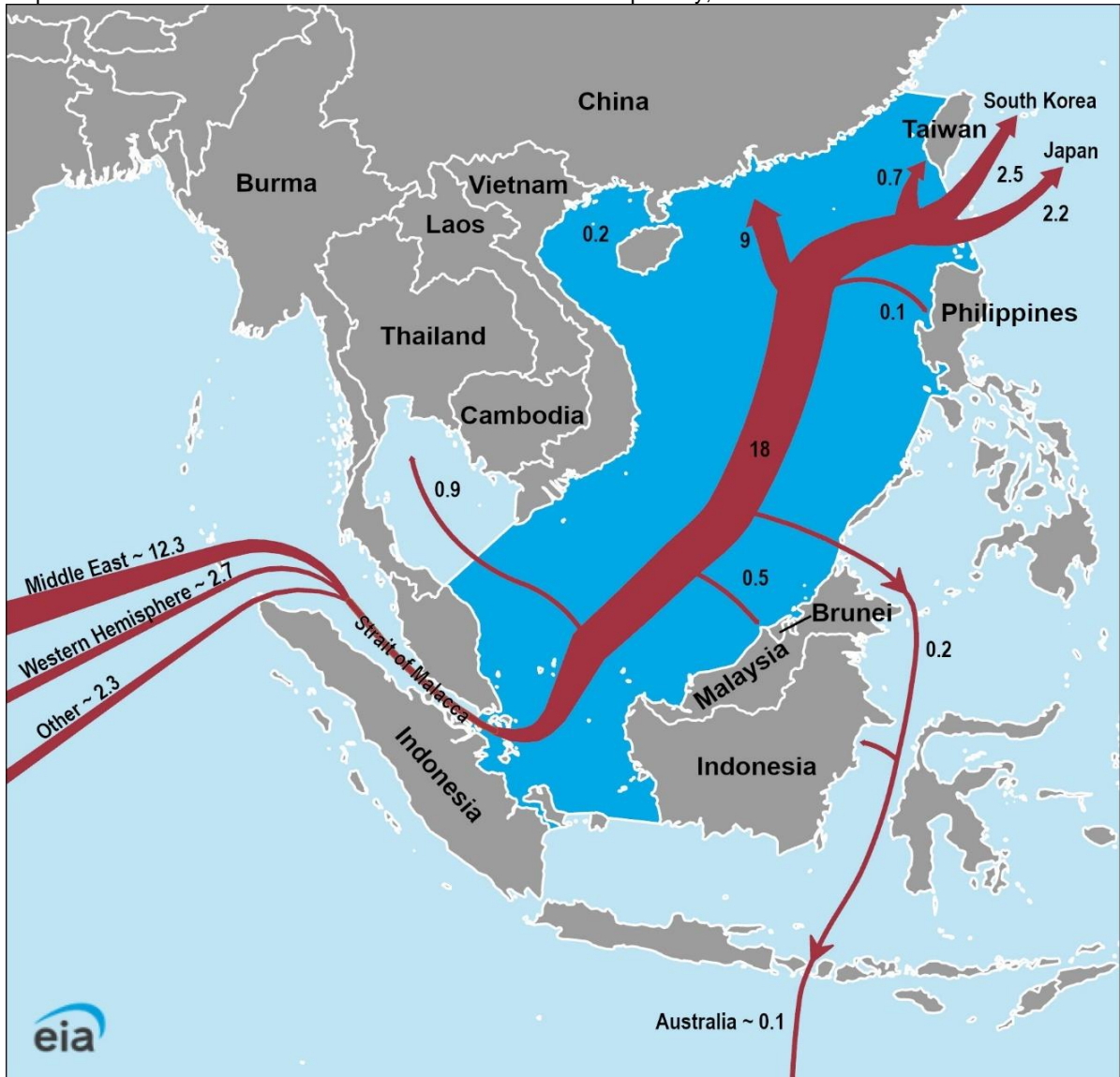
Figure 6. Top 10 origin countries of crude oil and condensate flows in the South China Sea, 2023

million barrels per day



Data source: Vortexa

Map 5. South China Sea crude oil trade flows in million barrels per day, 2023



Source: World Bank, U.S. Energy Information Administration, and Vortexa

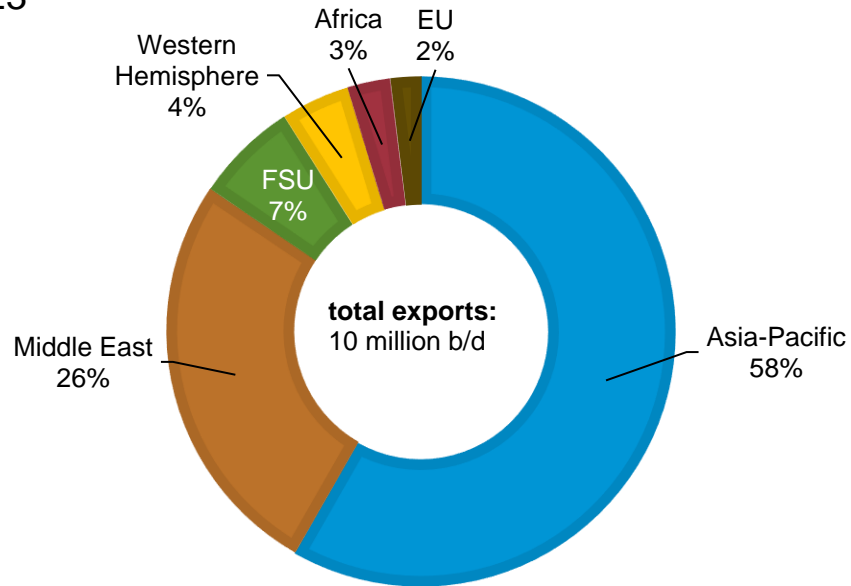
Note: Routes are for reference only and not a guide for exact trade routes. Countries in the Asia-Pacific region that export small amounts of crude oil and condensates were not included in the map for clarity.

Petroleum product trade

- In 2023, over 10 million b/d of petroleum products, one-third of global petroleum products trade, went through the South China Sea and Gulf of Thailand. China (20%), Singapore (16%), Malaysia (8%), and South Korea (8%) are the top importers of petroleum product flows that went through the South China Sea.⁹⁹
- The Asia-Pacific region was responsible for 58% of petroleum product maritime shipments in the South China Sea in 2023 (Figure 5). Singapore and Malaysia were two

of the top importers of petroleum products and the two top sources, followed by the United Arab Emirates (Figure 6).

Figure 7. Flows of petroleum product in the South China Sea by origin region, 2023

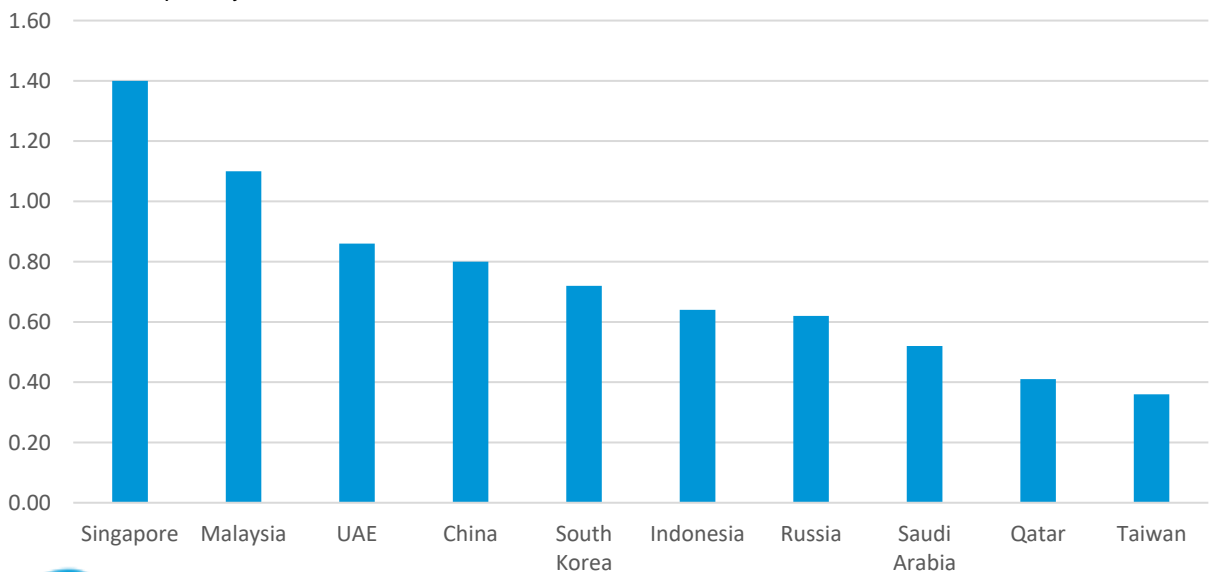


Data source: Vortexa

Note: EU=European Union, FSU=Former Soviet Union

Figure 8. Top 10 origin countries of petroleum product flows in the South China Sea, 2023

million barrels per day

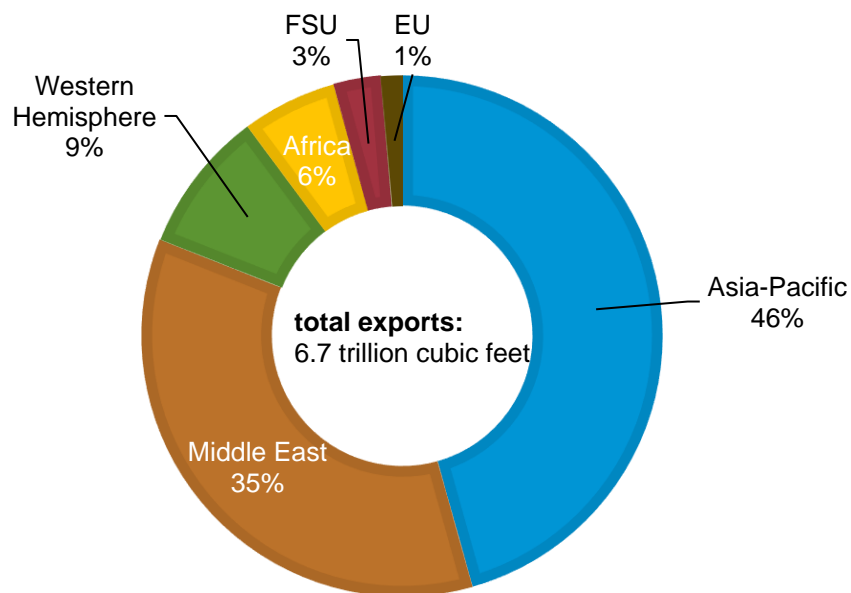


Data source: Vortexa

Liquefied natural gas trade

- In 2023, 6.7 Tcf of LNG passed through the South China Sea, which was 34% of global LNG trade. Most of the LNG that went through the South China Sea were LNG imports to China, which was approximately the same amount of LNG as the second- and third-highest importers combined, South Korea and Japan.¹⁰⁰
- The Asia-Pacific region and Middle East were responsible for 81% of LNG exports that went through the South China Sea in 2023 (Figure 6). Qatar, Malaysia, and Australia were the sources for 64% of LNG that entered the South China Sea (Figure 7).

Figure 9. Flows of LNG in the South China Sea by origin region, 2023

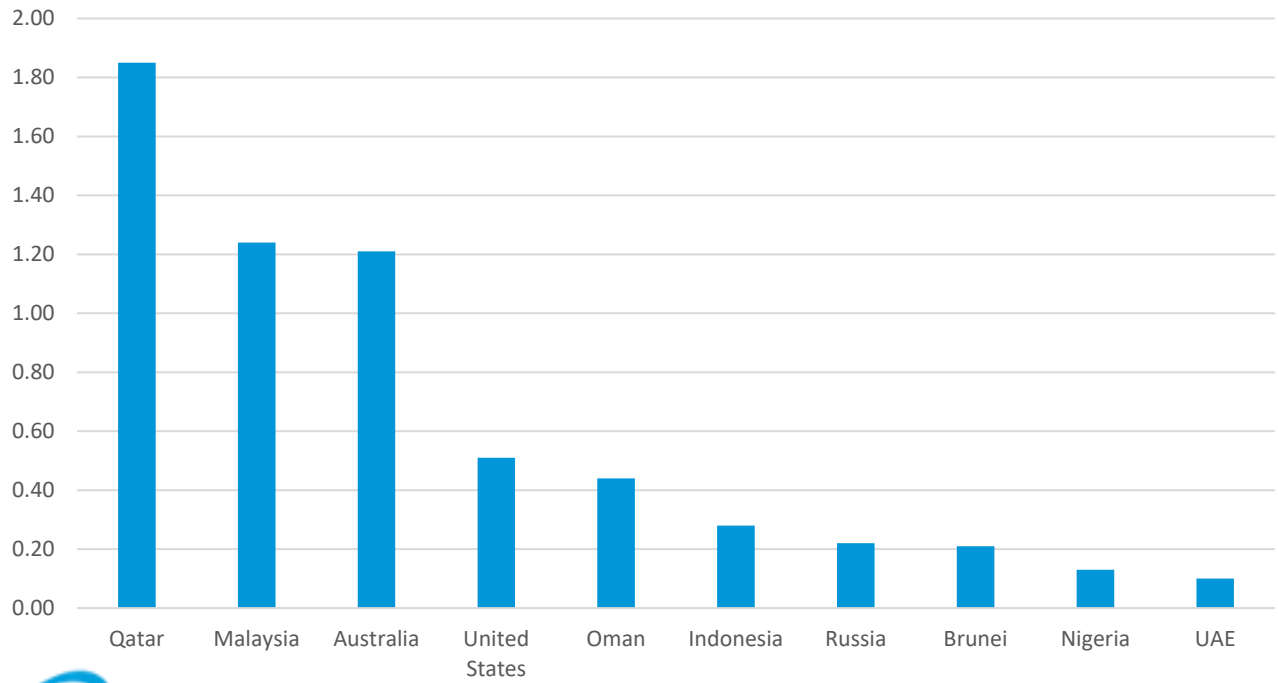


Data source: Vortexa

Note: LNG=liquefied natural gas, FSU=Former Soviet Union, EU=European Union

Figure 10. Top 10 origin countries of LNG flows in the South China Sea, 2023

trillion cubic feet



Data source: Vortexa

Note: LNG=liquefied natural gas

Map 6. South China Sea LNG trade flows in trillion cubic feet, 2023



Source: World Bank, U.S. Energy Information Administration, and Vortexa
 Note: Routes are for reference only and not a guide for exact trade routes. Countries in the Asia-Pacific region that export small amounts of LNG were not included in the map for clarity. LNG=liquefied natural gas

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