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Monthly Analysis

Shipping as a Crucial Link in the Global Energy Supply

Introduction

Shipping plays a fundamental role in the global energy system, serving as the primary means of transporting energy resources across international markets. Crude oil, liquefied natural gas (LNG), coal, refined petroleum products, and increasingly renewable energy components are heavily dependent on maritime transport to reach production hubs, industrial centers, and consumers worldwide. More than 80% of global trade by volume is carried by sea, making shipping an indispensable link in ensuring energy security, market stability, and the continuous operation of national economies, according to the UNCTAD **(1)**. Strategic maritime routes, such as the Suez Canal, the Strait of Hormuz, and the Panama Canal, are therefore critical not only for trade but also for the uninterrupted flow of global energy supplies.

At the same time, the shipping sector is undergoing a significant transformation as the global energy transition accelerates. Increasing environmental regulations, decarbonization targets, and technological innovation are pushing the maritime industry toward cleaner fuels, higher energy efficiency, and more sustainable operations. Alternative fuels, such as green methanol, ammonia, hydrogen, and biofuels, are gradually emerging as viable solutions for reducing greenhouse gas emissions from shipping activities. Consequently, shipping is no longer viewed solely as a transport mechanism for energy commodities, but also as an essential component of the broader transition toward a low-carbon and more resilient global energy system.

Shipping is Indispensable to the Energy Supply Chain

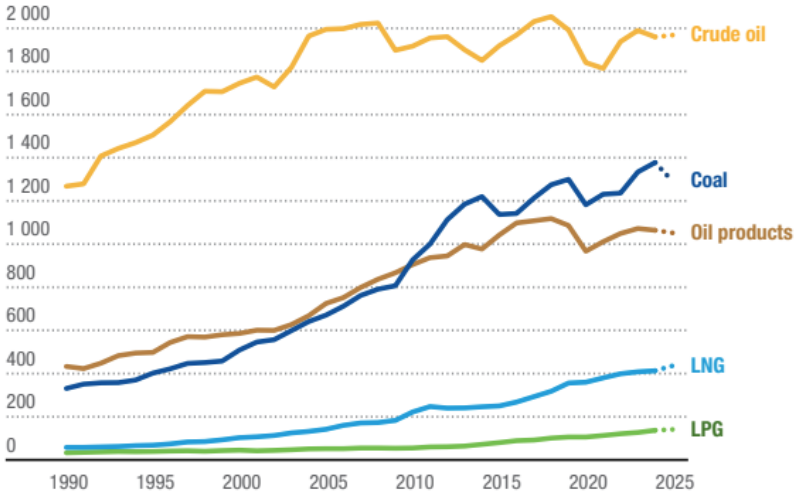
Shipping constitutes one of the most critical pillars of the global energy supply chain, enabling the continuous movement of energy commodities between producing and consuming regions. The international energy market relies heavily on maritime transport for the delivery of crude oil, LNG, coal, refined petroleum products, and increasingly renewable energy equipment. Due to the uneven geographical distribution of energy resources, many countries depend on shipping to secure adequate and stable energy supplies. As a result, the maritime sector directly supports industrial production, electricity generation, transportation systems, and overall economic activity on a global scale.

The importance of shipping in global energy supply is particularly evident in the oil and gas sectors. Large volumes of crude oil are transported daily by tankers from major exporting regions such as the Middle East, the United States, and West Africa to importing markets in Europe and Asia. Similarly, LNG shipping has become increasingly important as countries seek to diversify their natural gas sources and enhance energy security. Very Large Gas Carriers (VLGC) allow natural gas to be transported across long distances, connecting producers and consumers that are not linked through pipeline infrastructure. This flexibility has significantly

contributed to the globalization of energy markets and the resilience of supply systems.

Since 1990, crude oil has remained the dominant energy commodity in seaborne trade, although its growth in volume terms has plateaued since 2010. On the other hand, coal volumes have increased steadily, overtaking oil products in the early 2010s. Oil products have expanded moderately with periodic fluctuations. The LNG trade has grown significantly, more than tripling since 1990, while LPG volumes have also risen. As of 2024, all five energy commodities, as shown in Figure 1, recorded higher volumes than in 1990. Coal and oil products more than doubled, crude oil rose by approximately 40%, LNG quadrupled and LPG nearly tripled.

Figure 1: Seaborne Trade by Energy Commodity (Volume in milions of tons)

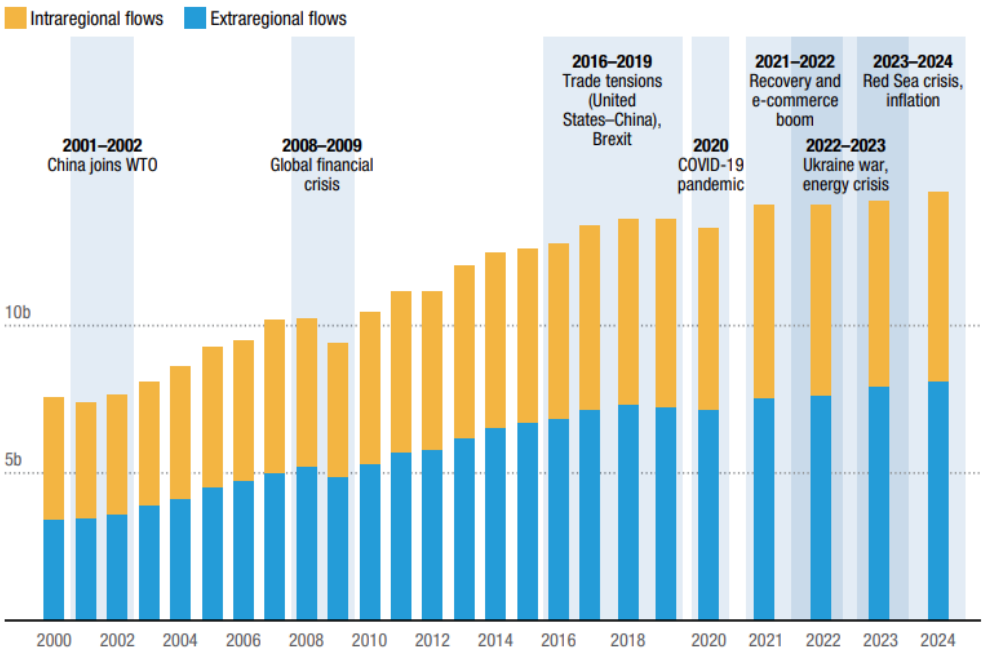


Sources: UNCTAD, World Cargo Database

Strategic maritime chokepoints further highlight the essential role of shipping in energy distribution. Routes, such as the Strait of Hormuz, the Suez Canal, the Bab el-Mandeb Strait, and the Panama Canal, serve as major corridors for international energy trade. Any disruption in these areas, whether caused by geopolitical tensions, military conflicts, piracy, or accidents, can have immediate consequences for global energy prices and supply stability. The temporary blockage of the Suez Canal in 2021 demonstrated how vulnerable global supply chains can be to maritime disruptions, emphasizing the strategic importance of secure and efficient shipping routes.

At the same time, shipping itself is highly dependent on energy availability and fuel costs. The maritime sector consumes significant quantities of bunker fuel to power commercial vessels, making it sensitive to fluctuations in global oil prices and fuel market volatility. Rising fuel costs directly affect transportation expenses, freight rates, and ultimately the prices of goods and energy commodities worldwide. Consequently, shipping and energy markets are deeply interconnected, with developments in one sector often producing significant impacts on the other.

Figure 2: Intraregional and Extraregional Seaborne Trade Flows (billions of tons)



Sources: UNCTAD, World Cargo Database

The ongoing global energy transition is also reshaping the shipping industry. Increasing pressure to reduce greenhouse gas emissions has led international organizations and governments to adopt stricter environmental regulations for maritime transport. The International Maritime Organization (IMO) has introduced ambitious targets for reducing emissions from ships, encouraging the adoption of cleaner technologies and alternative fuels **(2)**. In response, shipping companies are investing in more energy-efficient vessels and exploring fuels such as LNG, methanol, ammonia, hydrogen, and biofuels. These developments demonstrate how shipping is evolving from a traditional fossil-fuel-dependent sector into a potential driver of sustainable energy transformation.

In addition to transporting conventional energy commodities, shipping plays a crucial role in supporting the expansion of renewable energy systems. Maritime transport is essential for moving wind turbine components, solar panels, batteries, and other clean energy technologies across global markets. Offshore renewable energy projects, particularly offshore wind farms, also rely heavily on specialized vessels for installation, maintenance, and operation. Therefore, the shipping industry contributes not only to current energy supply systems but also to the development of future low-carbon energy infrastructure.

Overall, shipping represents an indispensable link in the global energy supply network, combining economic, geopolitical, technological, and environmental dimensions. Its ability to ensure the reliable movement of energy resources underpins global economic stability and international trade. However, the sector also faces major challenges related to decarbonization, security risks, infrastructure requirements, and market

uncertainty. As the world moves toward a more sustainable energy future, the role of shipping will remain central, requiring continuous innovation, international cooperation, and strategic investment to maintain resilient and efficient global energy supply chains.

Map: Global Maritime Chokepoints

Source: Counterpoint

The Impact of the Middle East War on Shipping

The current conflict in the Middle East has had significant consequences for global shipping and maritime trade, particularly due to the strategic importance of the region in international energy transportation. The Middle East hosts some of the world's most critical maritime chokepoints, including the Strait of Hormuz and the Red Sea shipping corridor through the Bab el-Mandeb Strait and the Suez Canal. Escalating geopolitical tensions, military operations, and security threats in these areas have increased uncertainty for global shipping companies and energy markets. As a result, maritime transport has become more vulnerable to delays, disruptions, and rising operational costs.

One of the most immediate impacts of the conflict has been the increased security risk for commercial vessels operating in the region. Attacks on cargo ships, tankers, and container vessels in the Red Sea and surrounding waters have forced shipping companies to reassess their routes and security measures. Many operators have chosen to avoid high-risk areas altogether, rerouting vessels around the Cape of Good Hope

in southern Africa instead of using the Suez Canal. Although this alternative route reduces exposure to security threats, it significantly increases travel distances, transit times, fuel consumption, and shipping expenses.

Figure 3: Global Disruptions to Shipping

Source: IMF

The disruption of maritime routes has also affected global energy supply chains. A large share of the world's oil and LNG exports passes through Middle Eastern waterways before reaching Europe, Asia, and other international markets. Any instability in these transport corridors can create concerns about potential supply shortages and contribute to higher global energy prices. Insurance premiums for vessels operating in war-risk zones have also increased substantially, further raising transportation costs for energy commodities and international trade more broadly.

In addition to economic impacts, the conflict has intensified concerns regarding the resilience and security of global supply chains. Delays in shipping schedules have affected the delivery of raw materials, industrial products, and consumer goods worldwide. Ports, logistics providers, and shipping companies have faced operational challenges in maintaining stable trade flows under rapidly changing security conditions. The situation has demonstrated the high degree of interdependence between geopolitical stability and the efficient functioning of international maritime transport systems.

At the same time, the ongoing crisis may accelerate long-term changes in global shipping strategies and energy trade patterns. Governments and companies are increasingly seeking to diversify transport routes, strengthen regional energy infrastructure, and reduce dependence on vulnerable maritime chokepoints. Investments in alternative energy corridors, strategic reserves, and supply chain resilience are likely to become more important in the coming years. Consequently, the current Middle East conflict highlights not only the strategic importance of shipping for global trade and energy security, but also the need for greater adaptability and risk management within the maritime sector.

The Case of the East Mediterranean

The current conflict in the Middle East has significantly affected the East Mediterranean region, increasing geopolitical uncertainty and intensifying security concerns among neighboring countries. Due to its strategic location between Europe, Asia, and the Middle East, the East Mediterranean has become increasingly important as both an energy and transportation corridor. The escalation of military tensions has heightened concerns over regional stability, maritime security, and the protection of critical infrastructure, including ports, pipelines, and offshore energy installations. Countries in the region are therefore facing growing pressure to strengthen security cooperation and crisis preparedness.

One of the most important consequences for the East Mediterranean has been its increasing role in global energy diversification efforts. As instability affects traditional Middle Eastern energy routes, European countries have intensified their interest in alternative energy supplies from the East Mediterranean, including natural gas resources from offshore fields in Greece, Cyprus, Egypt, and Israel. The region is increasingly viewed as a strategic energy hub capable of contributing to European energy security through new infrastructure projects, LNG terminals and FSRUs, and electricity interconnections. This development has enhanced the geopolitical and economic importance of the East Mediterranean within the broader international energy landscape.

At the same time, the conflict has created economic and operational challenges for regional shipping and trade activities. Maritime traffic in parts of the Eastern Mediterranean and the Red Sea has become more vulnerable to disruption due to security threats and rerouting of commercial vessels. Ports and logistics networks in countries such as Greece, Cyprus, and Egypt have experienced changes in shipping patterns, increased operational costs, and higher insurance premiums for maritime transport. Tourism, which represents a major economic sector for several East Mediterranean economies, has also been affected by regional instability and concerns over safety.

Despite these challenges, the current situation may also create opportunities for stronger regional cooperation and infrastructure development in the East Mediterranean. Countries in the region are increasingly collaborating on energy projects, maritime security initiatives, and interconnection networks aimed at enhancing resilience and reducing dependence on unstable supply routes. The crisis has highlighted the strategic significance of the East Mediterranean not only as a neighboring region to the Middle East, but also as an emerging center for energy production, energy transition, trade connectivity, and geopolitical cooperation between Europe, North Africa, and the broader Middle East. **(3)**

It is worth noting that the strategic relationship between energy and maritime transport was extensively examined during the recent "5th IENE Energy & Shipping Seminar", organized by the IENE in Athens on April

29, 2026, under the theme “Energy Security, Energy Transition and the New Maritime Reality” **(4)**. The seminar brought together leading representatives from the shipping, energy, financial, legal, and academic sectors to discuss the growing challenges affecting global maritime energy flows amid the ongoing geopolitical instability in the Persian Gulf and the wider Middle East. Particular emphasis was placed on the impact of the conflict on critical maritime corridors such as the Strait of Hormuz, the implications for global oil and LNG transportation, maritime security risks, insurance costs, supply chain resilience, and the broader consequences for international energy markets and the global economy. The discussions also highlighted the strategic importance of Greek shipping, one of the world’s largest commercial fleets (which represent approximately 20% of global vessel capacity in dwt), maintaining the uninterrupted transport of vital energy commodities during a period of heightened geopolitical uncertainty.

The importance of shipping as a critical link in global energy supply will also be highlighted during the upcoming Posidonia 2026 conference and exhibition **(5)**, which will take place in Athens on June 1-5, 2026. Recognized as one of the world’s leading maritime events, Posidonia brings together shipowners, energy companies, policymakers, financial institutions, and technology providers to discuss the major challenges and opportunities facing the global shipping industry. Particular emphasis is expected to be placed on energy security, maritime geopolitics, decarbonization, alternative fuels, and the resilience of global supply chains amid ongoing geopolitical tensions and energy market uncertainty. The conference will further underline the strategic role of Greece and the Eastern Mediterranean in international shipping and global energy transportation networks.

Discussion

Shipping remains one of the most essential components of the global energy system, ensuring the continuous movement of vital energy resources across international markets. The maritime sector supports the transportation of crude oil, LNG, coal, refined petroleum products, and renewable energy technologies, thereby sustaining industrial activity, electricity generation, and global economic growth. Its strategic importance is reinforced by the existence of critical maritime routes and chokepoints that connect energy-producing regions with major consumption centers worldwide. Consequently, the stability and efficiency of global shipping are directly linked to international energy security and economic resilience.

At the same time, the shipping industry faces increasing challenges arising from geopolitical instability, supply chain disruptions, fluctuating fuel prices, and stricter environmental regulations. Recent global crises and regional conflicts have demonstrated the vulnerability of maritime transport networks and the significant economic consequences that may result from disruptions in key shipping corridors. In parallel, the global transition toward cleaner and more sustainable energy systems is placing additional pressure on the

maritime sector to reduce emissions and adopt innovative technologies and alternative fuels. These developments are transforming shipping from a conventional transport industry into an active participant in the broader energy transition.

Looking ahead, the role of shipping in global energy supply is expected to remain central despite ongoing structural changes in energy markets and international trade. Continuous investment in resilient infrastructure, maritime security, digitalization, and low-carbon technologies will be essential for maintaining efficient and sustainable shipping operations. International cooperation among governments, energy producers, shipping companies, and regulatory organizations will also play a critical role in addressing future challenges and ensuring stable energy flows. Ultimately, shipping will continue to serve as a crucial link connecting global economies, energy systems, and international trade in an increasingly interconnected and evolving world.

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