

Geopolitical Factors in Energy Security (Part I) – Expanding Risks & Their Growing Impact on Energy Security



Author Guo Sizhi

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Introduction

Three factors – energy demand and supply, geopolitical factors and financial factors – are affecting energy prices, energy security and the global environment. Above all, geopolitical factors have been influencing the energy market, with the trend of decarbonization and development of non-fossil fuels, as the international economy has been facing serious risks since the beginning of the 21st century, and in particular since the 2010s. In addition to the existing risks posed by the Russia-Ukraine war and the China-US struggle for global hegemony, the recent air raids by Israel and the United States on Iranian nuclear facilities and Iran's retaliatory attacks have certainly made the situation more serious.

In this article, I would like to examine the impact of such growing geopolitical risks on petroleum energy security, as well as the petroleum energy market, and highlight some solutions over the long term to mitigate these risks and achieve a reduction in the world's dependency on petroleum energy.

Geopolitics & Geopolitical Risk in Petroleum Energy in the Middle East

“Geopolitics” was a technical term coined by Rudolf Kjellen (1864-1922), a Swedish political scientist, and part of social science is to study the impact of a nation's geographical locations upon international relations. “Geopolitical risk” means risk stemming from military or political tensions in specific regions. This term was used officially for the first time in a statement by the US Federal Reserve Board (FRB) in September 2002 and since then it has been used frequently. When it is used in relation to the recent development of the petroleum market, it means the impact of the security, economic as well as social, of petroleum-producing nations such as Iraq, Libya, Russia, and Nigeria upon the demand-supply situation of petroleum and petroleum market prices.

More specifically, emergencies like wars, terrorism or political protests in the major oil and gas-producing nations cause impediments to energy production and exports. These will eventually raise oil and gas prices due to production declines in the world market. For example, in the first half of 2011, we saw the Arab Spring resulting in riots in Arabic nations. In particular, riots in Libya raised the price of Brent (North Sea crude oil) in Europe, as they affected Libya's oil production of 1.6 million barrels.

Furthermore, in November 2011, with the report of the

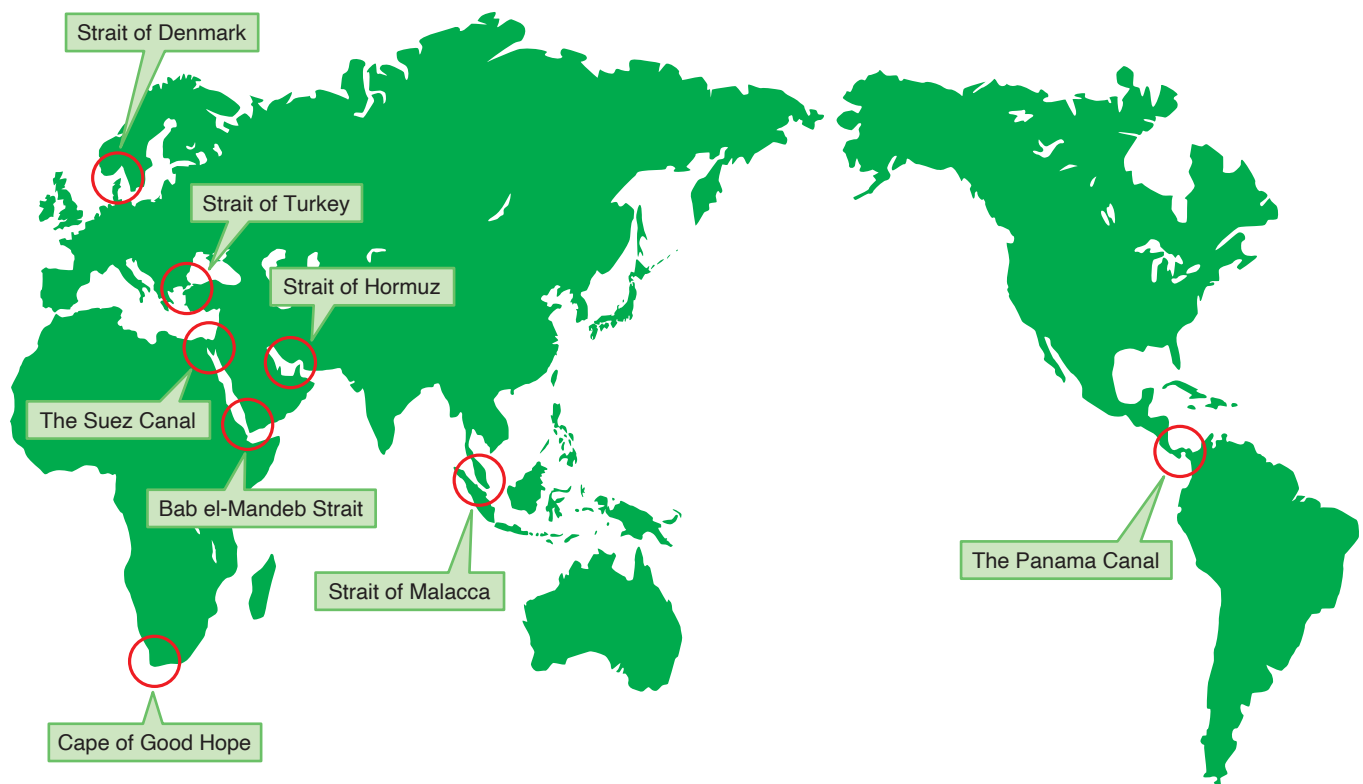
International Atomic Energy Agency (IAEA) on nuclear enrichment by Iran, new sanctions against Iran were examined. In response, there was an increased risk of a blockade of the Strait of Hormuz by Iran. This risk disturbed the stability of oil prices. Later, on April 16, 2015, it was said that an armed group related to al-Qaeda, the international terrorist group, brought the major oil-producing facilities in Yemen under their control. Yemen is not a major oil-producing nation but is considered as the critical point for marine transportation in the Middle East, and thus concerns about interruption of oil supplies were increased. Crude oil futures prices on the New York Mercantile Exchange (NYMEX) continued to rise for six days in the middle of April 2015. The near-term market price in May of the West Texas Intermediate (WTI) ended up at \$56.71 per barrel, higher than the previous day by \$0.32. It reached \$57.42 per barrel at one point, the highest level since four months previously in December 2014. This was the result of purchases made with a tightened demand-supply scenario in mind against the backdrop of rising geopolitical risks in the Middle East.

More recently, in the middle of June this year, tensions in the Middle East grew with Israel's air-raids on Iranian nuclear facilities and Iran's retaliatory attacks; in addition, the US attacked three Iranian nuclear facilities on June 21. The WTI crude oil price in the oil market rose by more than 14%.

The choke point in the Middle East is the Strait of Hormuz, which can be blockaded by Iran, so geopolitical risks related to energy supply in general are centered on the Middle East. The region is the largest oil producer and supplier in the world, with reserves of 836.75 billion barrels and production of 30.12 million barrels per day – respectively almost 50% and more than 30% of the world's total. But despite such rich oil resources, the geopolitical risks are high. The region's vulnerability in oil supply has given tremendous shocks to oil-importing and consuming nations – as was the case in the first oil crisis triggered by the fourth Middle East War, the second oil crisis due to the Iranian revolution and the Iran-Iraq War at the end of the 1970s, and the Gulf War in 1990 or the US-Iraq War in the early 2000s. In all cases, the oil-producing nations there stopped or restricted oil production due to those events. This Middle East risk continues even now and the international oil and energy market as well as the major oil-consuming nations' energy security can be gravely affected by it.

CHART 1

Major choke points



Source: *White Paper on Energy*, June 2025

East Asian Economies' Dependency on Oil in the Middle East

It is also notable that Asian oil-consuming nations like Japan and China are also heavily dependent on the Middle East. Their dependency on Middle East oil is roughly as follows: Japan around 90%, South Korea a little more than 70%, and China 50%. These major oil-importing nations in East Asia are increasingly concerned about possible rises in oil prices due to wars or military conflicts in the Middle East and supply disruptions due to the destruction of oil-production infrastructures or the closure of the Strait of Hormuz. The Middle East risk is still the largest energy supply risk permanently faced by all oil-importing and consuming nations.

Strait of Hormuz – Choke Point Sea-Lane

There are several choke points and critical sea-lanes in the marine transportation of petroleum from suppliers to consumers around the world (*Chart 1*). These are sea-lanes with critical strategical value in the light of energy trade for oil-importing nations. It is vital for them to secure these sea-lanes in the event of emergencies for their energy security. In recent years, the risks in these sea-lanes are increasing.

The Strait of Hormuz lies between the Persian Gulf and the Gulf of Oman, and this is the most critical choke point for oil transportation. The Strait of Hormuz and the Strait of Malacca are particularly important for Asian nations importing their major energy sources. Safe transportation of oil in these straits is key – as seen in the

figures above – to the national interests of Japan, South Korea, and China. The recently published Japanese government’s White Paper on energy showcased the “choke point ratio”.

The choke points in the world are those shown in [Chart 1](#), all crucial for major energy-consuming nations in East Asia. The “choke point ratio” in the [Table](#) is calculated as a nation’s quantity of imported crude oil passing through these choke points (quantity counted each time when passing through choke point) as the numerator, divided by the total imports of crude oil by the major energy-consuming nations in the world as the denominator. Thus, the larger this ratio, the higher the risk of passing through a choke point.

In the case of the US, France, Germany and the United Kingdom, oil imports are mostly limited to those from the Middle East that do not pass through either the Strait of Hormuz or the Strait of Malacca, and thus their choke point ratio is smaller. Meanwhile, in the case of East Asian nations like Japan, South Korea, and China, their imported oil mostly passes through the Strait of Malacca in addition to the Strait of Hormuz and thus their risk is high. As shown in the [Table](#), their choke point ratio in 2023 was 193.3 for Japan, 180.3 for South Korea, and 131.2 for China – much higher than for Europe and the US.

Sea-lanes in oil and energy have critical value in terms of energy security for oil-importing nations and need to be secured for marine transportation in the event of emergencies. According to a report by

the Energy Information Agency (EIA), crude oil transported through the Strait of Hormuz has reached 20 million barrels per day and accounts for about 20% of world oil consumption. This corresponds to around a quarter of all crude oil transacted in marine transportation. It means that the Strait of Hormuz is the most important choke point for oil supplies. In addition, it is important for not only crude oil but also for Liquefied Natural Gas (LNG) and 20% of the world total of LNG supply also passes through the Strait of Hormuz, including shipments from the important natural gas producer Qatar. The Strait of Hormuz is simply a lifeline for Middle East petroleum and its security would lead to economic security and economic sustainability for these East Asian oil-importing nations.

In terms of the number of ships passing through the Strait of Hormuz, on average around 110 pass through every day and 60% of them are oil tankers. About 80% of the oil tankers are destined for Japan, namely 3,400 per year. A blockade of this narrow strait for any reason would thus stop a large part of the energy supplies for Japan.

The Strait of Hormuz is one of the key channels of petroleum produced in the Persian Gulf nations for the rest of the world, with 20 million barrels per day transported by tanker. Oil resources consumed by China come from the Middle East, Africa, and Central Asia, as well as Russia. Most are transported by sea-lanes, and in particular nearly 50% of Chinese petroleum imports in recent years pass through the Strait of Hormuz, and more than 80% of those also pass through the Strait of Malacca. And for LNG transportation, 20% of the global supply (84 million tons per year) including supplies from Qatar, the United Arab Emirates, Iran and Kuwait pass through the Strait of Hormuz.

During the Iran-Iraq War, there were attacks against tankers and a blockade of the strait. Recently, tensions have been raised between Iran and Europe, the US and the Gulf Arabic nations due to the issue of Iran’s nuclear development. The Iranian navy is engaged in regular military exercises in the strait area against US navy military exercises. Any possible accident or political insecurity in the Middle East, or terrorism and attacks by pirates leading to a blockade of the Strait of Hormuz, would gravely damage the world energy supply.

The escalated Israel-Iran conflict and US military intervention with its attack on Iranian nuclear facilities in June highlighted again the importance of the Strait of Hormuz. Iran has repeatedly captured oil tankers or disturbed their navigation because of sanctions against it in the past, and has also menaced the US with a possible blockade of the strait whenever any risky situation emerges, creating concerns

TABLE
Trend in risks of choke points (estimated)

Choke point ratio (%)	2000s	2015	2023
UK	12.7	8.5	1.8
US	48.3	42.5	20.0
France	71.8	65.5	49.3
Germany	45.0	58.4	39.8
China	154.4	154.4	131.2
South Korea	163.6	175.8	180.8
Japan	181.0	168.0	193.3

Note 1: Choke point ratio calculated by addition of imported oil by each nation passing through choke point. When ships pass through it more than once, the amount of the imported oil is added each time. So the choke point ratio could exceed 100%.
Note 2: The lower the ratio, the lower the risk, since more oil can be imported without passing through choke points.
Source: White Paper on Energy, June 2025

that US intervention could provoke Iran to shut off navigation through the strait.

If the Strait of Hormuz is closed, and given that about 20% of the world oil supply and more than 80% of East Asia's imported oil pass through it, crude oil prices could rise to about \$140 per barrel, twice as high as now (*Chart 2*). This would be close to the highest level in the past, namely \$147 per barrel in July 2008. Together with concerns about the possibility of physical disruption of supplies, the high price of crude oil would push up gas prices and distribution costs and power generation costs, and eventually accelerate inflation around the world. According to an estimate by the Japan Center for Economic Research, in the scenario of a blockade of the strait, rising crude oil prices would reduce Japanese GDP growth by 0.6% at maximum. This would also reduce the corporate sector's revenues as well as a household's disposable income, which would all be negative for the economy overall.

How to Avoid Risks of High Dependency on Middle East Oil

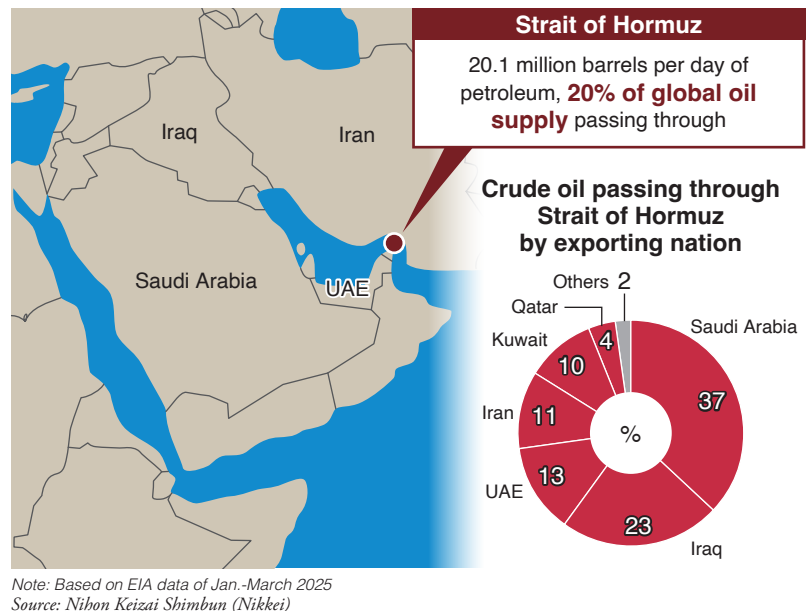
East Asian nations like Japan, South Korea, and China, all heavily dependent on petroleum energy from the Middle East, must adopt mid- or long-term strategies to cope with the risk of war in the Middle East and the risk of a blockade of the energy supply aorta. Their fundamental solution must be the decarbonization of the energy demand-supply structure. I will talk about this in detail in the next issue.

At this moment, what should be indispensable is diversification of oil import sources. This would lower excessive dependency on petroleum from the Middle East and lead to consolidated energy security. At one time the dependency ratio of China and South Korea on oil from the Middle East reached 60% and 90% respectively. However, they actively expanded imports from other regions such as Africa and succeeded in lowering their dependency ratio to less than 50% for China and around 70% for South Korea.

But Japan's dependency ratio on Middle East oil has been 87% to 90% all the time and is the highest in East Asia, indeed in the world. For many years, diversification of the sources of oil imports has been a policy item of Japanese governments, but this fact seems to show

CHART 2

Lingering concern about blockade of energy supply aorta



that they have not been seriously working on it as South Korea or China have. In recent years, the Middle East risk has been increasingly rising for Japan's energy security. It is a matter of emergency for Japan to diversify oil import sources and lower its high dependency on oil from the Middle East.

(To be followed by Part II in the Nov./Dec. 2025 issue)

Article translated from the original Japanese by Naoyuki Haraoka, editor-in-chief of Japan SPOTLIGHT & executive managing director of the Japan Economic Foundation (JEF).

JEF

Dr. Guo Sizhi is specially appointed professor at Teikyo University Okinaga Research Institute, and consulting fellow at the Japan Economic Foundation (JEF). He specializes in the international economy, the energy economy, and the Chinese economy. His current research focuses on the transformation of the international political and economic order, new energy, and economic security toward carbon neutrality, and decarbonization technology innovation. He is the author of numerous books, including *A History of the Industrial Revolution: The Transition of the International Order as Seen Through Innovation* and *The Decarbonizing Industrial Revolution*.