

The Strait of Hormuz Crisis and Asia's Energy Trilemma

Ken Koyama, PhD

Chief Economist, Senior Managing Director
The Institute of Energy Economics, Japan

The energy crisis originating in the Middle East, triggered by the blockade of the Strait of Hormuz and resulting in the loss of 20 million barrels per day (b/d) of oil supply and 80 million tons per year of LNG supply, represents the largest supply disruption event in the history of the global energy market. With regard to oil supply disruptions, the largest previous incidents include the 5.6 million b/d disruption caused by the 1978 Iranian Revolution and the 5.7 million b/d outage following the 2019 attacks on Saudi Arabian oil facilities. In comparison, the disruption caused by the current Strait of Hormuz blockade is unprecedented both in scale and duration.

Consequently, this massive supply shock has rapidly destabilized international energy markets, causing sharp spikes in the prices of crude oil, petroleum products, and LNG, thereby triggering a global energy crisis of extraordinary magnitude. At the same time, it has become widely recognized among energy experts that Asia has been the region most severely affected by this global crisis. This is due primarily to Asia's high dependence on Middle Eastern energy supplies, combined with relatively underdeveloped emergency response systems, such as strategic petroleum reserves.

Historically, major energy crises—such as the oil crises of the 1970s—were global in scope but particularly severe for OECD countries, which at the time accounted for nearly three-quarters of global oil consumption and were directly targeted by the Arab oil embargo. Likewise, the 2022 Ukraine crisis constituted a major global energy shock, but its most acute impacts were felt in Europe, where dependence on Russian energy was extremely high. In contrast, the present crisis can rightly be characterized as a critical energy crisis for Asia.

How Asia will respond to and overcome this energy crisis is now an urgent question. Energy challenges in Asia are inherently complex. From an energy security perspective alone, the region faces not only the immediate need to respond to the Strait of Hormuz crisis and reduce dependence on the Middle East, but also the necessity of ensuring a stable electricity supply in response to rapidly growing demand driven by the expansion of generative AI applications and data centers. Furthermore, the intensifying fragmentation of the global order has elevated the importance of broader energy and economic security considerations.

However, it is crucial to note that Asia's energy challenges cannot be limited to the issues of energy security alone. In Asia—the center of global energy demand—three key dimensions are deeply interlinked: energy security, environmental sustainability, and affordability of energy for economic growth and daily life. These dimensions form what is commonly described as the “energy trilemma,” characterized by inherent tensions and trade-offs.

A fundamental and critical point in analyzing Asia's energy trilemma is that the region constitutes the epicenter of global energy consumption and will continue to expand its energy demand into the future, thereby increasing its global significance. According to the IEEJ Outlook 2026, Asia's primary energy consumption is projected to grow from 6.87 billion tons of oil equivalent (toe) in 2023 to 8.34 billion toe by 2050 under its Reference Scenario. As China—the world's largest energy consumer—is expected to see a decline in demand, energy consumption in the rest of Asia is projected to rise more sharply from 2.85 billion toe to 4.81 billion toe over the same period. This increase of 1.96 billion toe accounts for approximately 92% of the global energy demand growth of 2.13 billion toe during the same period. In other words, Asia—particularly excluding China—will be the driving force behind future global energy demand growth.

This robust and sustained growth in energy demand will inevitably lead to increased dependence on energy imports. Domestic production within Asia will be unable to keep pace with expanding consumption. Nowhere is this more evident than in the oil sector, where both import dependence and reliance on the Middle East are expected to intensify. As of 2024, Middle Eastern supplies account for 51% of Asia-Pacific oil imports, followed by intraregional supply at 15%, the former Soviet Union (including Russia) at 14%, and North America at 9%. Given expected declines in production capacity in countries such as Indonesia and Malaysia, further increases in Middle Eastern dependence are highly likely under a business-as-usual scenario. This suggests that the structural vulnerabilities in Asia's energy security—laid bare by the Strait of Hormuz crisis—will only deepen.

At the same time, Asia's energy mix remains heavily reliant on coal. As of 2024, coal accounts for 49% of the primary energy supply in the region, followed by oil at 27% and natural gas at 13%. This high share of coal is largely attributable to the substantial coal consumption of China and India, the world's largest and second-largest coal consumers. Nevertheless, coal remains a cornerstone of Asia's energy system as a whole. As energy demand continues to expand, environmental burdens have also intensified. Many developing countries in Asia face severe air pollution challenges, while climate change—driven by CO₂ emissions—has emerged as a pressing global and regional concern.

Although most Asian countries have pledged to achieve decarbonization in the latter half of the 21st century, the current structure of energy supply and demand suggests that this transition will be

extremely challenging. Against this backdrop, there has been a growing emphasis on the shift toward clean energy. Under the additional pressure of the Strait of Hormuz crisis, the push to reduce Middle Eastern dependence and enhance energy self-reliance has accelerated the deployment of renewable energy, electric vehicles, battery technologies and others. Whether this trend will be sustained over the long term remains a key question. However, a full-fledged transition to clean energy may also deepen Asia's dependence on China, which holds a dominant position in clean energy supply chains. Thus, efforts to reduce dependence on the Middle East risk creating a new form of dependency on China, highlighting the complex geopolitical dimensions of the energy transition.

Furthermore, ensuring affordable energy is an indispensable priority for sustaining economic growth and social stability in Asia. The sharp rise in energy prices triggered by the Strait of Hormuz crisis has led to significant socio-economic challenges, exemplified by the declaration of a “national energy emergency” in the Philippines. In many developing countries in Asia, high energy prices can result in physical shortages, where energy becomes simply unaffordable or inaccessible. The regressive nature of energy price increases—disproportionately affecting low-income populations—represents a critical issue, which should never be overlooked in Asia.

In sum, the Strait of Hormuz crisis has highlighted the severity and complexity of Asia's energy trilemma. As the center of global energy demand, Asia faces formidable challenges in navigating this trilemma, yet the region's energy transition will have profound implications for the future of the global energy system. Japan, as a strategic partner, must work closely with Asian countries to address these challenges and deepen mutually beneficial energy cooperation, thereby contributing to sustainable solutions for the region and the world.

Contact: report@tky.iej.or.jp

The back issues are available at the following URL.

http://eneken.iej.or.jp/en/special_bulletin.html