Chapter 4

Sea lane security in the selected EAS countries

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Chapter 4

Sea Lane Security in the Selected East Asia Summit Countries

4.1. Indonesia

4.1.1. Introduction

Indonesia's energy demand will continuously grow in the next 1 or 2 decades. As domestic oil and gas production declines, Indonesia will rely on import for the supply of oil, liquefied petroleum gas (LPG), and liquefied natural gas (LNG). The Institute of Energy Economics, Japan (IEEJ) projected that oil imports of the Association of Southeast Asian Nations (ASEAN) will increase from 1.987 million barrels per day (mb/d) to 6.525 mb/d, and Indonesia is a major part of this increase. Meanwhile, Indonesia LNG import is projected to grow to 5 million tonnes (MT) in 2020, 9 MT in 2030, and 12 MT in 2040. On the other hand, LPG import demand will grow from 3.3 MT in 2013 to 3.7 MT in 2025 and 4.3 MT in 2040 (Indonesia Energy Outlook, 2015).

In 2014, Indonesia mainly imports crude oil from Saudi Arabia, Nigeria, Azerbaijan, Algeria, Russia, Angola, Brunei Darussalam, and Malaysia. Among those countries Saudi Arabia, Azerbaijan, and Nigeria are the main suppliers of oil for Indonesia. The import in 2020, 2025, and 2040 most likely come for the same sources with a possible increase in the role of Russia as Indonesia and Russia achieved an agreement to build a refinery in Tuban East Java in 2016.

In addition to crude oil, Indonesia is an oil products importer. Total import in 2014 was about 33 million kilolitres and mainly imported from Singapore, Japan, and Korea. In the next decade, products import may keep growing. But it will depend on what additional refinery can be added successfully.

Indonesian import of LNG may start in 2018 or 2019 to meet growing domestic demand. Most likely the source will be Middle East producers such as Qatar and Iran. But imports from Australia and Russia also seem attractive.

Currently, for LPG Indonesia mostly imports from Qatar and Iran. Import sources of LPG in the future will likely come from the Middle East, Africa, Asia, Australia, and Russia.

Crude oil, oil products, LPG and LNG imports are transported by sea. Sea transportation also plays a very important role in securing domestic fuel in Indonesia as the country is archipelagic, consisting of 17,550 islands. As an archipelagic state Indonesia is bound by the United Nations Convention on the Law of the Sea (UNCLOS) to provide safe and secure

transit in archipelagic sea lanes in Indonesia. Considering those conditions, safe and secure sea lanes are important to Indonesia.

4.1.2. Sea lanes of communication

Indonesia has great interest on safe and secure sea lanes of communication. Considering Indonesia's import of crude, oil products, LPG, and LNG in the future will come from the Middle East (Saudi Arabia, Qatar and Iran), Africa (Nigeria, Angola), Australia, Singapore, Korea, Japan, and Russia, the supply of Indonesia's energy will be affected by the sea lane situation that connects the Middle East to Asia, Africa to Asia, Australia to Asia, and Northeast Asia to Indonesia.

As a littoral state, Indonesia is bound by UNCLOS 1982 to provide safe transit and innocent passage in Indonesian water. Indonesia has designated archipelagic sea lanes in addition to sharing the Malacca Strait, the busiest sea lane in Asia.

Three archipelagic sea lines are designated by Indonesia. The first is the sea lane connecting India to the South China Sea and Northeast Asia through Sunda Strait. The second is the sea lane connecting the Indian Ocean to the South China Sea and Northeast Asia through Lombok Strait and Sulawesi Strait. The third lane is the Ombai–Wetar Straits route near Timor used by local shipping, including vessels proceeding between Australia and the Java Sea and to East Asia.

The Strait of Malacca is 600 miles long and provides the main corridor between the Indian Ocean and the South China Sea. The strait is relatively shallow at about 23 metres deep in most points and narrow, 1.5 miles wide at the narrowest point. Growing oil demand in East Asia projected will increase number of the tanker pass through the strait from 7,723 in 2014 to 11,615 in 2030 and 12,211 in 2040. Increasing numbers of tankers passing through the strait will increase the risk of safety and security.

The Lombok Strait in Indonesia is wider, deeper, and less congested. It is located between the islands of Bali and Lombok. The minimum passage width of Lombok Sstrait is 11.5 miles and the depth is greater than 150 metres. Lombok becomes an alternative and safer route for super tanker. Ships travelling in Lombok Strait usually pass through the Makassar Strait located between Kalimantan and Sulawesi. The strait is 11 miles wide and 600 miles long. An estimated 3,900 ships transit through Lombok Strait annually. In terms of value, more than 140 MT of goods worth $40 billion pass through the Lombok Strait.

The Sunda Strait, located between Java and Sumatra, is about 50 miles long and 15 miles wide. The strait has limited depth and strong current made it less favourable for ships to pass through. Ships with deep drafts and over 100,000 deadweight tonnage (DWT) usually do not transit the strait. About 3,500 ships, equal to 15 million metric tons of good, pass through the strait annually.

The thirds designated archipelagic sea lane of the Ombai–Wetar Strait is extremely deep and good for ultra large crude carriers.

Indonesia ASL has been an alternative for very large tanker bound for East Asia – either Japan, Korea, or Taiwan. In 2011, about 0.9 trillion cubic feet of LNG from Australia bound for Japan and Korea passed through the strait.

Figure 4-1. LNG Transport through Lombok Strait

Source: U.S Energy Information Administration (EIA) (2013).

In addition, about 0.4 million barrels of crude oil are transported through the Lombok Strait and some also through Sunda Strait.

In case the Malacca Strait is closed due to accidents or terrorist attacks or has congested traffic, the Lombok and Sunda Straits could be viable alternatives. However, the diversion route from the Malacca Strait to the Lombok Strait will increase the distance by 2,500 nautical miles, equal to 168 voyage hours and is estimated to increase the transportation costs by 20 percent.

Figure 4-2. Oil Transported through Lombok and Sunda Straits

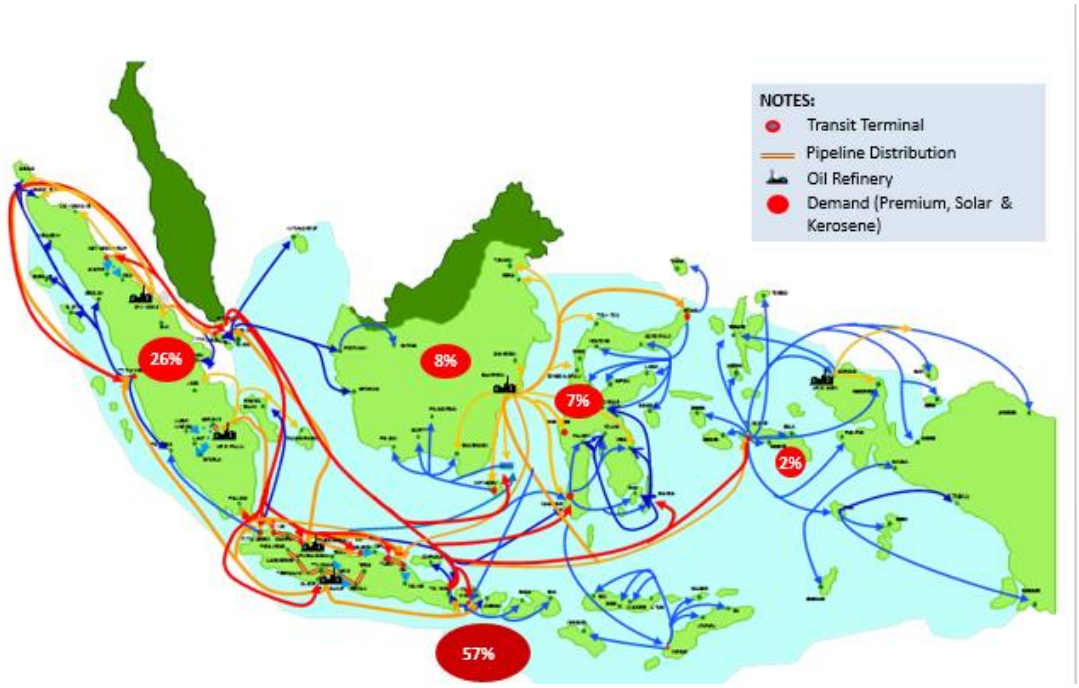
Source: U.S Energy Information Administration (EIA) (2013).

4.1.3. Domestic fuel distribution

Sea transportation plays a vital role to fuel distribution in Indonesia. LPG is transported from the refinery or imported to 21 LPG terminals and distributed to around 350 LPG filling/bottling stations. To transport LPG Indonesia currently employs three VLGCs, 6 semi-refrigerated tankers (10,000 MT), and nine pressurised LPG tankers (1,800 MT).

Fuel (premium [gasoline], solar [diesel] and kerosene) is transported to 109 fuel terminals by 203 tankers from 6 domestic refineries or imported terminals.

Figure 4-3. Indonesia Domestic Fuel Distribution



Source: Ministry of Energy and Mineral Resources, Indonesia.

4.1.4. Risks to Indonesia's sea lanes and energy security

As described in Chapter 2, several risks that may hamper energy supply include accidents, piracy, terrorist acts, or extreme weather that affect sea lanes. Indonesia is not special and is prone to those risks.

Shipping is a risky activity, where accidents and casualties are common. The Malacca Strait is prone to accidents, either collisions or groundings. Several notable accidents had happened in the Malacca Strait that heavily impacted Indonesia waters in terms of oil spills or chemical leaks.

Table 4-1. Notable Accidents in Sea Lines of Communication

Date	Vessel Name	Type of Oil and HNS	Quantity of Spillage (barrels)	Location and Cause
6/1/1975	Showa Maru	Crude	54, 000	Singapore Strait/ Grounding
12/7/1978	Tadotsu	Crude	293, 000	Malacca Strait (Dumai)/ Unknown
20/9/1992	Nagasaki Spirit and Ocean Blessings	Crude	100, 000	Malacca Strait/ Collision
15/10/1997	Evoikos and Orapin Global	Crude	175, 000	Singapore Strait/ Collision
21/5/1999	Sun Vista	Fuel Oil	14, 000	Malacca Strait/ Sinking
3/10/2000	Natuna Sea	Crude	49, 000	Singapore Strait/ Grounding
13/6/2001	Indah Lestari	Phenol	89	Johor Strait/ Sinking
25/05/2010	MV Waily and MT Bunga Kelana 3	Light Crude Oil	18, 000	Singapore Strait/ Collision

Source: Authors.

As the volume of the traffic increases in the Strait of Malacca and other Indonesian navigable waters, the risk of accidents certainly will increase. Besides accident risk, energy transport in Indonesian waters has both symmetric and asymmetric threats. Symmetric threat is considered as traditional threat such as armed robbery and piracy. Although the risk from armed robbery and piracy is considered high in Southeast Asian waters, concerted efforts to curb the activity most likely will bring down the risk.

On the other hand, an asymmetric threat to energy transportation has also become eminent. Asymmetric threat refers to a non-traditional threat by non-state actors with tactical methods and strategic objectives. Terrorism, sabotage, and suicide bombing are examples.

Considering the source of crude and products import for Indonesia any accident or blockage in sea lanes such as the Hormuz Strait or the Malacca Strait will pose a serious threat to Indonesian energy security in two ways. First, the blockage will delay the supply of crude oil for Indonesia refineries that may lead to shortage of oil products. Second is the indirect impact of a blockage in the Hormuz and Malacca Straits to countries from Indonesia imports fuels from that may reduce the ability to supply fuel to Indonesia. The impact will be

identical – supply shortage. If the supply shortage lasts a long time, it may seriously impact Indonesia's economy and may lead to social unrest.

As Indonesia also imports oil products from Northeast Asia such as Japan, Korea, and Russia, there are several straits of strategic importance to Indonesia such as the Straits of Tsushima, Tsugaru, Osumi, and Soya (La Perouse). These straits are key to product transport from Russia and Northeast Asia to Indonesia. The closure of these straits may seriously impact Indonesia's fuel supply.

4.1.5. Risk mitigation

Accident Prevention and response

A high probability of accidents, such as collision and grounding in Indonesia's navigable waters including the Malacca, Sunda, and Lombok Straits, stimulates the Indonesian government to increase the safety of the navigational systems by introducing a traffic separation scheme in the Malacca, Sunda, Lombok, and Ombai–Wetar Straits.

Indonesia set up the Maritime Safety Board to comply with International Maritime Organization (IMO) Flyer No. 79. The Maritime Safety Board is equipped with infrastructure such as:

1. Maritime SAR with the Global Maritime Distress Security and Safety System (GMDSS)
2. Traffic monitoring, consisting of automatic identification system, base station, long-range camera, and radar coastal surveillance
3. Fishery protection, vessel monitoring ship, and ground station
4. Marine safety broadcasts, supporting the Maritime Regional Coordinating Center (MRCC) and the Regional Coordinating Center (RCC).

Marine pollution monitoring

In case of oil spill risk, Indonesia has developed a company-level response plan, a regional response plan, and a national response plan. The system, supported by oil trajectory prediction, and oil containment facilities, regularly conducts exercises to increase the readiness of the system to any possibility of oil spill.

Indonesia's geographic conditions are prone to supply disruption of fuel due to accidents in refineries, transportation, and weather. In order to respond to the disruption risk, Indonesia has developed a regular, alternative, and emergency supply scheme to reach any consumer in Indonesia.

Regional Cooperation

The safety and security of shipping, especially for oil and gas transport, is complex. National measures to secure the safe transportation have limitations. In such cases, regional and multilateral cooperation is important.

In addition to individual measures, there have been efforts of bilateral and multilateral cooperation. Among notable cooperation efforts are:

1. Joint patrols of the Malacca Strait. Indonesia and Singapore established Indonesia–Singapore coordinated patrols in the Singapore Strait. This has involved the setting up of direct communication links between their navies and the organisation of coordinated patrols every 3 months in the strait. Singapore and Indonesia have also set up a joint radar surveillance system, known as Project SURPIC, for Surface Picture, which will monitor traffic in the Singapore Strait.

   Indonesia and Malaysia also decided in 1992 to establish a Maritime Operation Planning Team to coordinate patrols in the Straits of Malacca. The Malaysia–Indonesia coordinated patrols are done four times a year, and so is the Malaysia–Indonesia maritime operational coordinated patrol, which are conducted together with other maritime institutions, such as customs, search and rescue, and police forces from the two countries.

2. ASEAN. The Bali Accord II, adopted at the ASEAN Summit in Bali in October 2003, declared that maritime issues and concerns are transboundary in nature and therefore shall be addressed regionally in a holistic, integrated, and comprehensive manner. The Plan of Action of the proposed ASEAN Security Community also included recommendations to cooperate mutually and to coordinate border patrols to combat terrorism.

3. The ASEAN Petroleum Safety Agreement is especially designed to assist countries in supply disruption on mutual benefit basis.

4. Private initiatives have also taken place. A Japanese refiner, under the coordination of the Petroleum Association of Japan, launched a stockpile base of oil spill response equipment since 1996. The association conducted joint exercises with Pertamina and the Oil Spill Combat Team, which is a private oil spill response services company.

4.1.6. Effectiveness of existing measures

Considering the occurrences of attacks to ships travelling in Indonesian navigable waters, current measures both at the country, regional, and multilateral levels still bear weaknesses. Among the weaknesses are the vast size of Indonesian navigable waters the need forf significant infrastructure to ensure security. Continuing developing country capability is very important to Indonesia.

Meanwhile, multilateral cooperation bears a risk of being ineffective, mostly because of the lack of trust among stakeholders, asymmetric benefits, and political issues.

4.1.7, Recommendations

1. Improving mutual trust among stakeholders
2. Promoting cooperation on capacity building among the stakeholders
3. Improve coordinated response to any attacks or casualties

4.2. Thailand

4.2.1. Introduction

In 2015, Thailand's demand for crude oil (and condensate) and natural gas is 1,120 kbd and 5,100 mmscfd, respectively. Seventy-two percent (875 kbd) of crude oil demand is imported, of which 573 kbd is from the Middle East. Current natural gas import accounts for 29 percent (1,480 mmscfd) of Thailand's demand, most of which is through pipelines from offshore fields in Myanmar. Thailand's LNG import facility is located at the Map Ta Phut Industrial Port on the eastern coast in Rayong province. Current LNG regasification capacity is 5 mmtpa, with an expansion of 5 mmtpa to be completed in 2017. From 2.5 mmtpa in 2015, LNG import is projected to increase to around 22–24 mmtpa in 2030–2035 period, accounting for about 70 percent of total natural gas demand.

With the emphasis on increasing the blending percentages of biofuels (ethanol and FAME) from renewable resources in its transport fuel mix, Thailand's oil demand plan for the next 20 years does not anticipate additional requirements for new refining capacity. However, with declining indigenous crude oil and condensate production, the total volume of crude and condensate will increase to around 1 million barrels per day, most of which will come from producers in the Middle East and West Africa. Therefore, it is foreseen that the security of the Malacca Strait sea lane will pose a critical issue that may cause serious impact on energy supply to the Thai economy, both for oil products for its transport fuels and petrochemicals feedstock and LNG for its power generation. Natural gas currently accounts for 65 percent of the fuels used in power plants, and it is projected that during the next 20 years, natural gas will remain the main source of fuel for power generation, accounting for 55–60 percent.

4.2.2. Thailand's approach to sea lane risk mitigation

Relying on import for most of its crude oil requirements, market price stability and supply security have been high on the government agenda. To provide price stability, Thailand has employed an oil fund scheme that adds a 'fee' onto the retail price of gasoline and diesel during periods of 'low price', and uses the fund to cushion the rapid increase in oil price during highly volatile periods. To mitigate the impact of possible supply disruption (either in the Strait of Hormuz or the Malacca Strait), the Thai government has imposed on refiners

and traders a mandatory reserve requirement equivalent to 6 percent of crude oil processed for domestic sale in a year for refinery, and 1 percent (down from previous 6 percent) of products traders sell in the domestic market in a given year. The cost of this reserve requirement is passed on to consumers in the form of a price premium above the reference Platts price. However, the 22-day crude oil reserve is deemed inadequate in the event of a major disruption, and the government has been promoting for an additional scheme to increase the reserve to the International Energy Agency (IEA) recommended level of 90 days. It is uncertain how such a strategy will materialise in the foreseeable future.

Another approach to mitigate the impact of crude oil supply disruption is to draw on cooperation with East Asian crude oil importing countries in building a 'Malacca-bypass channel' through southern Thailand. The projects being proposed under this approach are either the construction of a canal ('the Kra Canal Project') connecting the Andaman Sea with the Gulf of Thailand, or a pipeline 'land bridge' connecting receiving ports on the west coast of southern Thailand to a loading port on the east coast. It is doubtful whether this type of mega project could be realised.

As Thailand is developing its LNG regasification infrastructure, options to build additional LNG receiving terminals on the west coast facing the Andaman Sea are under consideration. One option is to build an LNG receiving terminal integrated with the natural gas import pipeline on the Myanmar side. The capacity of this terminal could be 5 mmtpa to supplement (and in the future replace) natural gas production from offshore fields in Myanmar. However national security is a main concern in implementing this approach. Other options include the construction of an integrated LNG receiving terminal with a dedicated power plant in the south of Thailand on the west coast facing the Andaman Sea.

With increasing development of natural gas supply infrastructure (pipeline networks) in ASEAN countries and growing natural gas markets, it seems that the most effective (and efficient) strategy to reduce the risk of major disruptions in LNG supply is to build an interconnected ASEAN gas infrastructure (either physically through interconnected pipelines or logically through LNG trades). This approach will not only provide optimum benefits for ASEAN countries, but will form the foundation of a region-wide natural gas market.

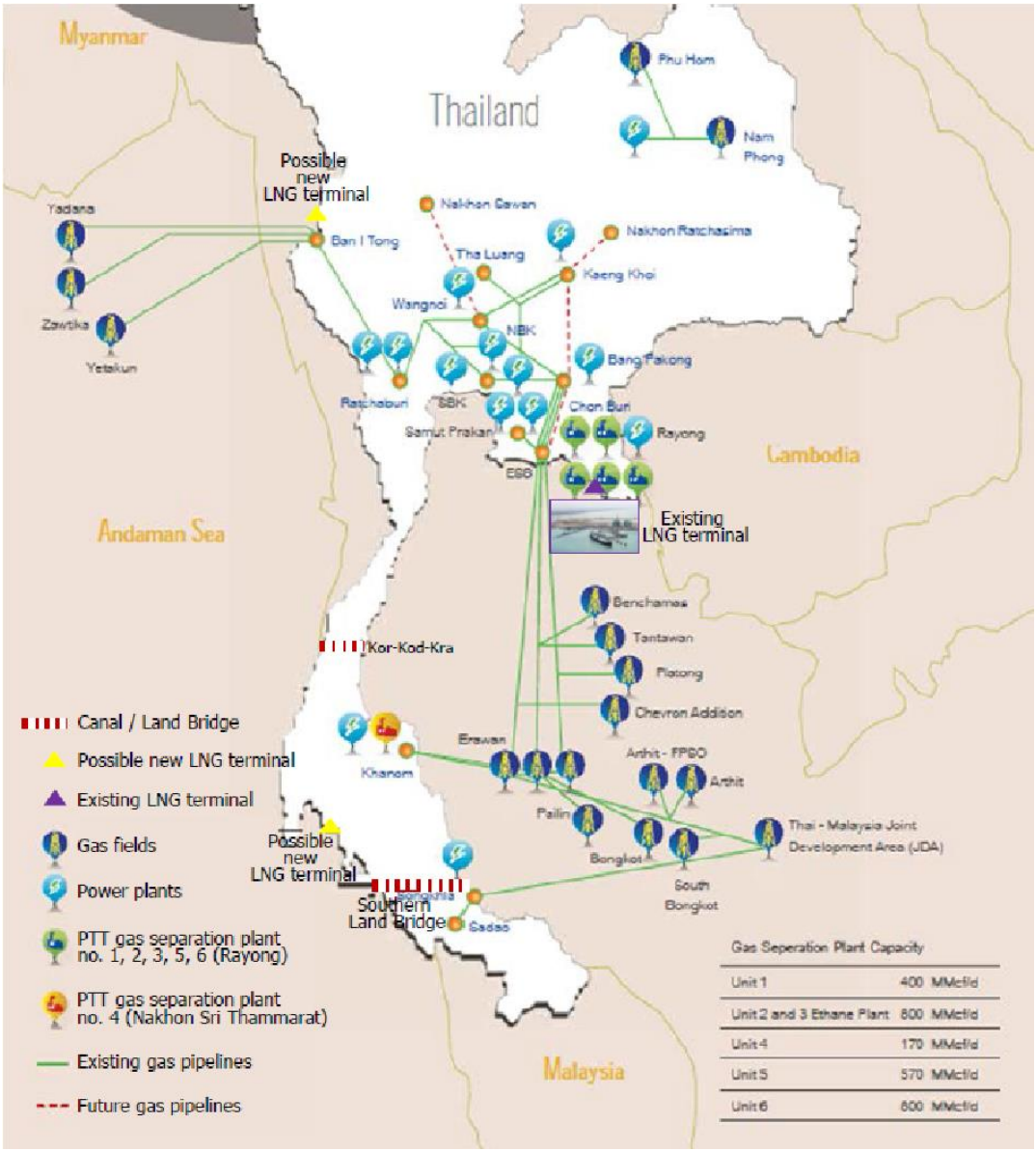
4.2.3. Thailand's participation in regional sea lane risk mitigation

In additional to these internal risk mitigation efforts, Thailand has played an active role as a participant in various proactive shipping security measures, such as the TSS, AIS, and ReCAAP. Thailand Maritime Enforcement Coordinating Center (THAI-MECC) has been established to coordinate marine activities related to piracy prevention, such as the ReCAAP. THAI-MECC has the responsibility to prevent and suppress unlawful marine acts as well as coordinate with any related units on the prevention and suppression of piracy.

The prevention and suppression of offences concerning piracy have been Thailand's ongoing strategy and policy that require attention from many organisations such as the Royal Thai Navy, the Marine Department, and the Control Division of Commercial Vessels. In order to fulfil such tasks, Thailand has adopted high-tech software and hardware such as a satellite

network control system to track all ships' global positioning system (GPS) and many computerised tracking interfaces (this could include AIS and TSS). In addition, Thailand has also liaised with Malaysian and Singaporean government agencies in dealing with various operations related to the prevention and suppression of offences concerning marine activities. The coordination includes the organisation of workshops and/or conferences for officers from these organisations. One recent workshop was 'The Situation of Piracy and Armed Robbery in Strait of Malacca and South China Sea' and 'The Guide for Tankers Operating in Asia Against Piracy and Armed Robbery Involving Oil Cargo Theft' held by the ReCAAP Information Sharing Centre (ISC) Singapore for THAI-MECC on 29 March 2016.

Figure 4-4. Energy Infrastructure in Thailand



Source: PTIT public company.

4.3. China

4.3.1. Introduction

China is the largest oil consumer and the third largest LNG consumer in the world. Statistically, approximate 75 percent of crude oil import and 23 percent LNG import are transported through the Malacca Strait from the Middle East, Africa, and Europe into China every year. China's foreign energy dependence remains high and is estimated to keep strengthening in the following decade. Therefore, maintaining sea lane security from the Middle East to China, especially the sea lane security of oil and LNG trade routes, conforms with China's national interests and strategic concerns.

Since 2012, China has officially put forward 'building an ocean power' as one of its national strategic aims. As one of the stakeholders of the South China Sea region and the major user of the Malacca Strait, China has made great efforts in guaranteeing the sea lane safety of this region. In addition, China's government is willing to cooperate with all parties in good faith to jointly work for ensuring the security of energy trade routes within this area.

4.3.2. China's increasing dependence on foreign energy

According to the 'Report of Domestic and International Oil and Gas Industry 2015' published by the China National Petroleum Corporation Economic and Technology Research Institute, China's dependence on foreign oil for the first time exceeded 60 percent in 2015; the oil products imports has grown by a large margin for 3 years.

It is estimated that, under the current policies scenario, by 2020 China's dependence would reach 63 percent andLNG 37.84 percent. Following that, figures may slightly decrease to 62.69 percent and 37.12 percent by 2030. However, if the government adopted and practised eco-friendly energy strategies in the coming decades, the figures would therefore grow to 62.41 percent and 36.67 percent by 2020; then, shrink to 59.02 percent and 32.96 percent by 2030. The decreasing dependence on foreign oil and gas after 2020 could result from China's systematic optimisation, according to the 'World Energy China Outlook 2015–2016' of the Chinese Academy of Social Sciences Innovation Program.

Considering China's present high dependence on foreign energy, a large share of which has to be transported through maritime choke points and the sea lanes in the South China Sea, the government thus should attach importance to the energy trade routes within this region. In addition, China's concerns of maintaining oil and LNG trade routes security could be higher in the foreseeable future.

4.3.3. China's concerns on the Malacca Strait

The Malacca Strait is one of the most strategically important maritime chokepoints in the world, the security of which cannot only directly influence the international energy market and world economy, but also can profoundly affect regional and international political patterns as well as the development of countries involved.

The Malacca Strait bridges the East and the West. According to the latest annual reports from the US Energy Information Administration (EIA), over 100,000 vessels pass through the Strait of Malacca each year, carrying about one-fourth of the world's traded goods, the total value of which are estimated over US$940 billion. Besides, as the shortest sea route between energy suppliers from the Persian Gulf and Africa and Asian markets, the strait conveys 5.5 billion barrels of oil and 4.2 trillion cubic feet of LNG every year, which takes 70–80 percent of China's, over 90 percent of Korea's, 90 percent of Japan's, and 98 percent of Taiwan's energy imports.

China is the major user of the Malacca Strait. In statistics, over 60 percent of vessels passing through the strait are from China. Thus, the security of the Malacca Strait is important for China.

In 2003, former President Hu Jintao, for the first time, stated China's concern over the security of the Strait of Malacca, during the Central Economic Working Conference. In 2007, during the 11th China–ASEAN leaders' meeting in Singapore, ex-Premier Wen Jiabao emphasised that China was committed to maintaining security of the Malacca Strait through dialogue and cooperation, and was willing to actively participate in the relevant cooperation projects. In addition, the new generation of China's government led by President Xi Jinping also attaches great importance to the security of the strait. China's concerns are as follows:

- **Security of Malacca Strait**

The Strait of Malacca is under joint jurisdiction of Singapore, Malaysia, and Indonesia. However, the three countries view piracy and maritime safety of the strait differently: Singapore regards it as a security issue; Malaysia sees it as a political issue; while Indonesia does not regard it as an issue at all. The differences of these countries' views may, to some extent, affect their cooperation in countering maritime piracy and terrorism in this area. Besides, none of the three countries are powerful enough to guarantee the safety of this maritime choke point from piracy, armed robbery, and terrorism. As a result, the number of actual and attempted attacks in this region grows year after year (Table 4.2), according to data from ReCAAP ISC. Although some political issues and misunderstanding between China and the countries remain unsolved, China still tries hard to promote the confidence building with all these parties, and is willing to assist them in jointly maintaining the security of the Malacca Strait.

Table 4-2. Locations of Actual and Attempted Attacks, 2010–2014

Locations	2010	2011	2012	2013	2014
Indonesia	40	46	81	106	100
Malacca Strait	2	1	2	1	1
Malaysia	18	16	12	9	24
Singapore Strait	3	11	6	9	8
Total	63	74	101	125	133

Source: IMB (2015a).

- **Increasing risk of marine accidents**

Besides the hydrogeological characters of the Malacca Strait, a narrow flat stretch of water and sandy mud bottom, lack of effective and efficient traffic management and extreme weathers, the increasing volume of traffic results in a significant rise in the risk of marine accidents. It is reported that the number of marine accidents in the strait is three times those of Suez Canal's and over five times in the Panama Canal. China, as the major user of the Malacca Strait, has to take greater risks and pay higher costs accordingly. To improve the situation, on the one hand, China has made efforts to enhance confidence building and cooperation among parties across the fields of combatting maritime terrorism and training on joint search and rescue, among others. On the other hand, China is actively exploring alternatives to mitigate the risks and protect its national interests.

- **The increasing costs in the Strait of Malacca**

Due to the increasing volume of traffic and the threats of piracy, armed robbery, and terrorism, the cost of using the Strait of Malacca is rising accordingly. For instance, in 2005, Aegis Defence Services once led a risk assessment on the Malacca Strait and classified the strait as a high-risk zone. Then, the result was taken by Lloyd's Market Association's Joint War Committee, which later declared that the Malacca Strait was in jeopardy of 'war, strikes, terrorism, and related perils', and added the strait to the committee's list of high-risk areas. As a consequence, the insurance cost of vessels navigating through the Strait was doubled. Although, in the end, some of insurance and reinsurance companies compelled not to do so at once, the event reveals the change in the Malacca Strait and pushes its users to seek for better alternatives.

4.3.4. Risks and China's efforts

Many risks are threating the security of trade routes in the South China Sea, such as the South China Sea disputes and possible regional conflicts, piracy and maritime terrorism, marine accidents and pollution, and extreme weather events and natural disasters.

Piracy has been a traditional problem in the South China Sea. Statistics show that there was a sharp increase in maritime piracy in the late 1990s following the massive unemployment and political instability caused by the Asian financial crisis. Stepping into the current century, according to the International Maritime Bureau, piracy, including attempted theft and hijackings, is still a regional threat to tankers. In 2008, there were only 13 actual attacks on vessels underway in the southern area of South China Sea. In 2010, there were 36 actual and attempted attacks in the Strait of Malacca, Singapore Straits, and the South China Sea. This number rose substantially to 44 in 2011 and 90 in 2014, according to the latest statistics published in the ReCAAP ISC Annual Report.

Maritime piracy often interweaves with terrorism. The former is used as a tool by terrorist groups. Since the international community has worked hard to freeze the capital of terrorist groups, they tend to acquire funds through activities of pirates. They may create a hazard by crashing a vessel containing dynamite or even weapons of mass destruction in a port or a harbour.

These major threats, together with other factors, like natural disaster, the deterioration of the oceanic environment, and even potential conflicts arising from overlapping sovereignty and jurisdiction claims in the region, bring about difficulty for maintaining maritime safety and security.

In order to mitigate these risks to maintain sea lane security, China has already made great efforts.

China values marine development and its rights and interests in oceans and seas. Especially in recent years, the government has formulated and promulgated a series of national strategies and initiatives for this purpose. For instance, in 2012, China clearly set forth maintaining its marine rights and interests and building an ocean power as a part of the 'Great Efforts to Promote Ecological Civilization Construction', stated in the 'Repot to the 18th People's Congress of Communist Party of China' during the 8th Collective Study of the Political Bureau of Central Committee of Communist Party of China held in 2013. President Xi Jinping further pointed out that: building an ocean power is significant for promoting sustainable and healthy economic development, maintaining national sovereignty and security, and developing interests, among others; and in September and October of the same year, Premier Li Keqiang promoted 'the Belt and Road Initiative', during his state visit in Asia and Europe. In addition, a key point for the government is how to effectively and economically guarantee the security of sea lanes.

China actively engages in prompting confidence building and cooperation in the South China Sea area on both regional and international levels. So far, some achievements, such as the

ReCAAP, the Malacca Straits Coordinated Patrol, the Regional Maritime Security Initiative, have been working well.

In addition, China encourages littoral states around the South China Sea to deepen economic cooperation by taking the opportunity of China's 'One Belt, One Road' strategic initiative and to share common responsibilities of tackling non-traditional security challenges, which could effectively eliminate the roots of piracy and other crimes at sea. Besides, it also encourages more international organisations and institutions, such as the International Maritime Organization, to play a positive and effective role in upgrading confidence building and capacity building of littoral states as well as promoting the maritime navigation orders under the UNCLOS, the Declaration on the Conduct of Parties in the South China Sea, and the Code of Conduct in the South China Sea to guarantee the safety of sea lanes.

References

Allianz (2014), Panama Canal: Shipping Safety and Future Risks. Munich: Allianz Global Corporate & Specialty SE.

Associated Press (AP) (2005), 'Malaysia Says It Has Not Found Link Between Terrorists and Regional Piracy', 5 June.

Asia Research Centre (ARC) (2007), 'The Privatisation of Maritime Security – Maritime Security in Southeast Asia: Between a Rock and a Hard Place?' *Working Paper* No. 141. Perth: Asia Research Centre.

Baird Maritime (2014), 'Piracy Resurgent in SE Asia', 23 July.

Balthasar, D. (2014), Somalia's Federal Agenda: From Fragility to Fragmentation? Paris: European Union Institute for Security Studies. http://www.iss.europa.eu/uploads/media/Brief_17_Somalia.pdf (accessed 20 March 2016).

Basiron, M.N. and T.K. Hooi (2007), 'The Environmental Impact of Increased Vessel Traffic in the Straits of Malacca and Singapore', *MIMA Bulletin*, 14(1), pp. 15–16.

BBC (2002), 'Yemen says Tanker Blast was Terrorism', 16 October.

BBC (2015), 'Somalia Warns of Return to Piracy', 31 August.

BMP4 (2011), *Best Management Practices for Protection against Somalia-Based Piracy* (Version 4 – August 2011). London: Witherby Publishing Group Ltd.

BP (2015), *BP Statistical Review of World Energy 2015*. London: BP.

Business Insider (2015), 'Ship Collision Delays Traffic in Suez Canal: Sources', 18 April.

Cai, W., S. Borlace, M. Lengainge, P. van Rensh, M. Collins, G, Vecchi, and F-F. Jin (2014), 'Increasing Frequency of Extreme El Niño Events due to Greenhouse Warming', *Nature Climate Change*, pp. 111–116.

Central Intelligence Agency (CIA) (2014), *The World Factbook*. Fairfax: Central Intelligence Agency.