

Executive Summary and Key Findings

Key Findings

1) Gas complements renewables towards a cleaner energy system. The Association of Southeast Asian Nations (ASEAN) is a growing liquefied natural gas (LNG) and gas market. LNG imports in Southeast Asia grew by 32% in the past decade and are expected to continue growing as gas demand grows. Thus, the view that natural gas can be used as a transition fuel to a cleaner energy system in the region is optimistic.

2) Reducing greenhouse gas (GHG) emissions has become a common goal in the world. ASEAN countries also try to reduce fossil fuel consumption and invest more in renewable energy like solar and wind energy to achieve their GHG emission reduction goals. However, as coal is still the dominant fuel in the ASEAN region and the member economies prefer to utilise the existing infrastructure for stable energy supply, it will take time to phase out these coal-fired power plants. However, despite coal being the dominant fuel in the region, building a new coal-fired power plant has become increasingly difficult in the ASEAN region, even though no policy restricts coal consumption.

3) LNG-related investment is capital intensive and involves many challenges such as investment environment, regulatory framework, LNG market demand, and electricity tariff. It is even more challenging for a country that has no experience in LNG imports like Viet Nam and the Philippines. This report explores the LNG infrastructure development in Indonesia, Myanmar, the Philippines, and Viet Nam – countries that have just started or are about to start importing LNG.

4) Recently, more countries have become committed to tackling climate change by announcing decarbonisation or carbon neutrality targets, including China, the largest carbon emitter, and the US, the second-largest emitter, as well as Japan and the Republic of Korea (henceforth Korea). Following the decarbonisation and carbon neutrality targets declared worldwide, there is also a growing attention towards the decarbonisation and carbon neutrality for LNG.

5) Natural gas is considered to be a relatively clean fuel as its carbon dioxide (CO₂) emissions are half of coal's emissions when combusted in a power plant. However, it is still a fossil fuel. As more investors and customers challenge natural gas, the declining costs for renewable energy such as wind and solar also increase pressure on LNG producers and force them to look for ways to reduce or offset their carbon footprints. As a result, the market of carbon-neutral or decarbonised LNG is emerging. It is noteworthy that the GHG emissions of LNG cargoes include not only CO₂ emissions but also methane emissions. As more LNG buyers and consumers increasingly consider LNG's carbon footprints, decarbonising the LNG sector has become an imperative trend. This is ultimately expected to become an essential factor for investors when committing to invest in new LNG projects and even related infrastructure.

6) Investment in LNG projects greatly depends on demand potential. Natural gas might be 'dirty' for some countries looking to shift away from fossil fuels. However, it is still a cleaner alternative fuel to coal and oil in ASEAN countries as it provides stable power generation and

serves as a complementary fuel with renewables. The focus for ASEAN countries should be on how to help implement CCUS (carbon capture, utilisation, and storage) technologies and establish a reasonable and affordable pricing mechanism. So, energy transition could be facilitated and the region would not be left behind the global transition pathway.

7) It is important to identify (i) how LNG-consuming markets should be developed in the most promising region for worldwide economic growth, (ii) how LNG supply sources could be more flexible and competitive to be accepted in the ASEAN LNG market, and (iii) how technical and regulatory standards should be coordinated between individual economies so that future LNG cargoes could move freely between the markets in response to dynamic developments in those markets.

Summary of Policy Recommendations

The study, 'A Flexible LNG Market and Promotion of Investment', recommends that relevant stakeholders undertake the following initiatives to support a growing LNG market in Asia. Two items (#3 and #4) were also presented on 12 October 2020 at the 9th Annual LNG Producer–Consumer Conference held online.

1) Policy support needed to sustain infrastructure development

Governments should investigate the LNG infrastructure gap and place the right policy to promote the investment that will increase gas use demand. Leaving investment decisions in major infrastructure to market forces has been proven difficult because LNG-related infrastructure projects are capital intensive. Governments' concrete actions are required for developing infrastructure, such as LNG receiving terminals, regasification plants, storage tanks, gas networks, and pipelines or virtual pipelines.

2) Create more gas demand with innovative solutions to facilitate further investment: TPA, ssLNG, ISO tanks, LNG-to-powership, and VPS

A key element for a flexible LNG market is sufficient trade volumes. Third-party access (TPA) in some cases could allow more gas imports and, thus, a more competitive gas market. Small-scale LNG (ssLNG), LNG-to-powership, and virtual pipeline systems (VPSs) also provide innovative solutions to reach more users in remote areas unreachable by pipelines. Small-scale LNG offers smaller capacity and lower initial investments as opposed to traditional receiving terminal and regasification facilities. ISO (International Organization for Standardization) tank containers provide quick access to LNG for end users in locations far from main pipelines that require smaller volumes. The virtual pipeline system (VPS) refers to delivering LNG with trucks to off-grid users. These innovative solutions would encourage new players to join the natural gas business and promote a more flexible LNG market to gain access to competitive LNG supply for stable economic development. Ultimately, these will enhance energy security and send signals to the financial market accordingly.

3) Producers and consumers should make the best efforts to reduce the carbon footprint of LNG in the supply chain and at the consuming end, and eventually to zero.

Governments of LNG-consuming and -producing economies should make carbon footprint information visible and contribute to a sustainable society. Governments should help LNG consumers and producers reduce GHG by encouraging them to improve production, transportation, and power generation efficiency. Governments should also support research and development activities of industrial players to promote the carbon-neutral use of LNG, such as carbon-neutral hydrogen and ammonia eventually.

4) Pursue an LNG pricing mechanism that provides comfortable price levels for both consumers and producers

Comfortable prices should be affordable for LNG consumers worldwide, especially in emerging markets, while they should be profitable enough for producers. Producers should reduce the supply cost as much as possible, and consumers should appreciate the value of LNG from environmental contribution. Extreme gaps between spot and term-contract prices, extreme low or high levels of spot LNG prices, and extreme volatility are not sustainable. Governments of LNG-consuming and -producing countries should support pricing mechanisms that provide transparent and timely information of LNG markets in collaboration with key market players.

5) Pursue flexible terms and conditions in LNG contracts through constant monitoring of market activities and close communication with competition authorities

The increasing number of LNG suppliers and supply volumes, the emergence of portfolio players in the LNG business, and the growing pressure from LNG-purchasing companies have contributed to the relaxation of destination restrictions in recent years. Yet, more efforts are still needed to encourage the competition authority of importing countries to include relaxation of destination clauses to their agenda and pursue more transparency and harmonisation of trade information to achieve a more flexible LNG market.