

## **The Malaysian Gas Industry and its key role in a Sustainable Future Energy**

The world is facing an energy crisis where demand for energy commodities exceeds supply causing volatility in short term pricing. Global spot prices for natural gas have reached the highest level this year.

At the time of this article, the impact of the energy crisis on Malaysia has not been too alarming. Dato Sri Mustapa Mohamed, Minister in the Prime Minister's Department (Economy), assured Dewan Rakyat on 5th October 2021 that Malaysia has successfully managed its energy security despite the price increase in energy commodities namely coal and LNG. He stressed that the government through Economic Planning Unit (EPU) and agencies such as PETRONAS have undertaken measures including liberalising our gas market to further strengthen energy security for the nation. This has enabled Malaysia to supplement gas supply with available global LNG cargoes to ensure energy security when deemed fit, although Malaysia has its own indigenous natural gas resources.

For several decades, Malaysia has benefited greatly from its indigenous natural gas in terms of socio-economic progress. The four-fuel diversification policy in 1981 placed the indigenous natural gas as a core fuel for Malaysia alongside oil, hydro and imported coal. Driven by this policy, an extensive natural gas pipelines network was established to transport and distribute natural gas throughout Peninsular Malaysia. The backbone of the network is the high-pressure transmission pipeline called the Peninsular Gas Utilisation (PGU) enabled the expansion of energy access to cater for the growing demand centres during the era of industrialisation. Increased accessibility to natural gas has promoted fuel substitution to cleaner gas, increased energy security, accelerated industrialisation and diversification of the Malaysian economy.

The Malaysian economy grew in tandem with the increase in gas consumption in Malaysia. Natural gas played a pivotal role as an energy provider to power generation, spurring the growth of gas-fired power plants in the 1990s, thereby expanding energy access that further developed the economy. Today the Malaysian gas industry brings more than RM135 billion annually and employs over 80,000 in the wider economy.

To future-proof the Malaysian gas industry, the gas market was reformed to introduce competition that will benefit the consumer and ensure long term security of supply. The gas market liberalisation that commenced in 2014 saw the following enablers implemented;

1. Subsidies were removed at gradual steps and the price of gas was brought to market parity
2. The Gas Supply Act was amended in 2016 to enable third parties to access the gas supply infrastructure and ship gas to consumers.
3. Regasification Terminals were constructed to enable imports of LNG to complement the supply of indigenous gas.

Today, gas to the power sector is currently being sold based on the market price and the price of the remaining regulated tariff to the industry will no longer be determined by the government from 1 January 2022 onwards. It's important to price gas at the market to ensure the sustainability and vibrant of the gas

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market. Failing that may risk the progress of market liberalisation or even worse the energy security for the country. Market pricing will incentivise future upstream investments as well as the opportunity for expansion to the downstream business.

Opening the market to third parties also encourages innovation on the supply side as the market grew more competitive. Today, in areas not served by pipelines, gas is delivered via trucks in the form of compressed natural gas (CNG) or liquefied natural gas (LNG). Natural gas can now be supplied to any consumer including those with no pipeline connection.

As the cleanest burning fuel, natural gas has been the preferred fuel due to its reliability and flexibility. This is more evident in power generation where the characteristics of a gas turbine power plant also include very high efficiency. The efficiency in energy conversion gets even higher in cogeneration applications where the plant generates both electricity and heat for consumers.

Natural gas once dominated the share of power generation at 52% in 2008. The availability of natural gas supply to demand centres on the west coast of the Peninsular enabled fast track deployment of gas-fired power plants to cater for the growing need for electricity to power rapid industrialisation. However, a slew of coal-fired power plants constructed at the turn of the century on the pretext of improving energy security tipped the balance. In 2020, the share of coal in the electricity energy mix for Peninsular exceeded 70%, leaving gas a paltry 28%. In October 2020, IDEAS published a policy paper pointing out the unsustainable practice of relying too heavily on coal. Besides being a fully imported source of fuel, a coal-fired power plant emits more than twice the amount of carbon dioxide emitted by a gas-fired power plant. IDEAS further called to use gas to turbocharge the growth of renewables,

The Power Development Plan for Peninsular Malaysia 2021-2039 released by the Energy Commission of Malaysia recognised the role of natural gas in carbon emission reduction for the power sector. The combined growth of renewables and natural gas can reduce carbon emissions in the power sector by 60% by 2033. In the same plan, consumption of natural gas in the power sector is expected to grow from 643 mmscfd in 2021 to 1,656 mmscfd in 2039. During the same period, the installed capacity of the coal-fired power plant will be reduced by 22%. 2021 also witnessed a slew of commitments from both the finance community and power generation players to no longer be involved in new coal-fired power plant projects. Maybank joined CIMB Bank to stop financing new coal projects and Tenaga Nasional Berhad will eliminate coal-fired power plants from their portfolio by 2050. The Malaysian government also committed to no longer building new coal plants as the nation transition towards carbon neutral as early as 2050.

With a gradual reduction in coal capacity, the role of natural gas in power generation is becoming increasingly vital. Power plants fuelled by natural gas are the perfect partner to support and complement the intermittency of variable renewable energy (VRE). A webinar organised by MGA recently discussed in great length the complementing roles of gas and renewables (the recording of that webinar is available on MGA's YouTube channel).

Some recommend drastic reduction of fossil fuel including natural gas if we were to meet the target to limit global temperature rise to 1.5 deg Celcius by 2050. The most prominent being the net-zero scenario by the International Energy Agency (IEA) which stated that the current gas fields are already sufficient to supply

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demand until 2050. Nevertheless, the energy crisis also exposed flaws in rushing the transition towards rapid deployment of VRE without being properly prepared. Emerging countries with their indigenous natural gas need this fuel to expand their energy access and drive economic development. With calls for rapid acceleration towards net zero, there are still 759 million people who lack access to electricity and 2.6 billion lacks access to clean cooking. The webinar recently organised by MGA also stressed the important role that natural gas will be playing in a pragmatic and just energy transition towards net-zero emission by 2050.

In the context of Malaysia, policymakers and industry players need to collaboratively deliberate and discuss how, as one nation, we can transition towards clean and sustainable energy, whilst at the same time addressing the challenges of energy trilemma; namely energy security, energy equity and environment.

Malaysian Gas Association is providing a discourse platform for both policymakers and energy players to congregate and explore mutually beneficial solutions. Themed “Role of Gas in the Pathway Towards Carbon Neutral Malaysia by 2050, the upcoming Malaysian Gas Symposium (MyGAS 2021) to be held virtually from 22-25 November 2021 will be discussing the challenges faced by the gas industry globally and the opportunities that will be presented in fulfilling its role as core fuel and enabler in the energy transition for Malaysia.

Malaysia.

#### **About MGA:**

Founded in 1986, Malaysian Gas Association (MGA) is the nation’s lead advocate for the natural gas industry. Over three decades, MGA has played a prominent role in promoting engagement, discourse and dialogue with key stakeholders to develop a vibrant and sustainable gas industry fuelling Malaysia's socio-economic growth. With more than 130 corporate members, MGA champions natural gas as a clean and efficient source of energy to drive demand and increase industry participation.

Website: [www.malaysiagas.com](http://www.malaysiagas.com)

Twitter: [@MGA\\_Official1](https://twitter.com/MGA_Official1)

#### **For media enquiries, please contact:**

Nabilah Zulkefli

Email: [nabilah@malaysiagas.com](mailto:nabilah@malaysiagas.com)

Mobile: +60 12 349 9596