

COMMENT

Use less gas and more coal as fuel

BACKUP MEASURE: To conserve energy, we must improve efficient use of electricity

IN June last year, the International Energy Agency (IEA) released a special report titled, "Are we entering a golden age of gas?"

This report, which applies assumptions that are favourable to natural gas supply and demand, calculated global natural gas consumption to increase 1.8 trillion cubic metres by 2035, or 50 per cent of 2010 consumption.

Underpinning this growth is the expansion in unconventional gas supply, that is, shale gas and coal bed methane, which would make up 40 per cent of the increase. The main loser under this scenario is coal, as natural gas exceeds its share in the global fuel mix to reach 25 per cent of all fuels consumed (from 21 per cent).

This effect is seen in North America, where the boom in shale gas production has turned the

United States into a country self-sufficient in natural gas. Natural gas prices plunged to below US\$2 (RM6) per million British thermal unit in April — that was less than one-seventh the price for liquefied natural gas (LNG) in Asia. Projects to import LNG into the US have

been replaced by projects to export it and American utilities are switching to burning gas instead of coal.

However, the consequent drop in North American coal prices has encouraged miners there to export to Europe, where utilities are switching from gas to coal because European gas prices, which are linked to oil price, remain high.

Low shipping rates also mean that North American coal is depressing prices in Asia.

The North American shale gas boom could be replicated in Russia, the Middle East, Africa and China, producing a long-term outlook that is of generally abundant and cheap supply not only of natural gas but also of coal.

Given that outlook, and noting that the IEA estimates total recoverable gas resources to amount to 250 years of current

consumption and global coal reserves to 150 years of current production, economics demand that Malaysian utilities maintain their reliance on those two fuels.

However, Malaysia's proved reserves of natural gas amount to less than 40 years of current produc-



The Mukah coal plant in Balingian, Sarawak. Newer, efficient plants produce lower carbon emissions.

tion (although reserves can be expanded with more exploration and better technology).

Malaysia should, therefore, aim to conserve this valuable resource and maximise the benefits it gains from it. This entails a minimisation of its use as fuel, for which it is being sold at below-market prices, and channelling it downstream for value-added products, such as fertilisers, specialty chemicals and polymers.

Switching from natural gas to coal in electricity production presents a few challenges, although they can be addressed.

FIRST, Malaysia imports almost all of its coal. However, the security of its import can be maximised by importing from several different sources, supplemented by an ad-

equate emergency stockpile;

SECOND, importing coal imposes a cost to the trade balance and carries a currency fluctuation risk. But if burning coal releases natural gas for bigger foreign exchange-earning purposes, then the cost and risk can be offset; and,

THIRD, low coal prices impact upon the economics of renewable energy technologies. Even so, given an expected capacity addition requirement of 1,000 megawatts per year, there will still be room for renewable energy to grow and achieve the national target of 3,400MW installed capacity by 2030.

This leaves the problem of coal's carbon dioxide (CO₂) emissions. Newer and more efficient plants produce lower emissions but CO₂ capture and sequestration and

clean coal technologies may not be economic except in a few instances. This necessitates backup measures.

FIRST, there is a lot of room for Malaysia to improve its electricity-use efficiency and so dampen the demand growth for coal; and,

SECOND, Malaysia can expand its capacity to absorb CO₂ by preserving and replanting rainforests, peatland forests and mangroves. It may be less ideal than avoiding CO₂ emissions, but it may be more achievable.

Moreover, it adds imperative to preserving the valuable ecosystem which is a treasure trove of information upon which a green, knowledge-based economy can be built, but upon which Malaysia has yet to learn to fully capitalise.



Shahnaz Sharifuddin is an analyst with the Technology, Innovation, Environment and Sustainability programme at ISIS