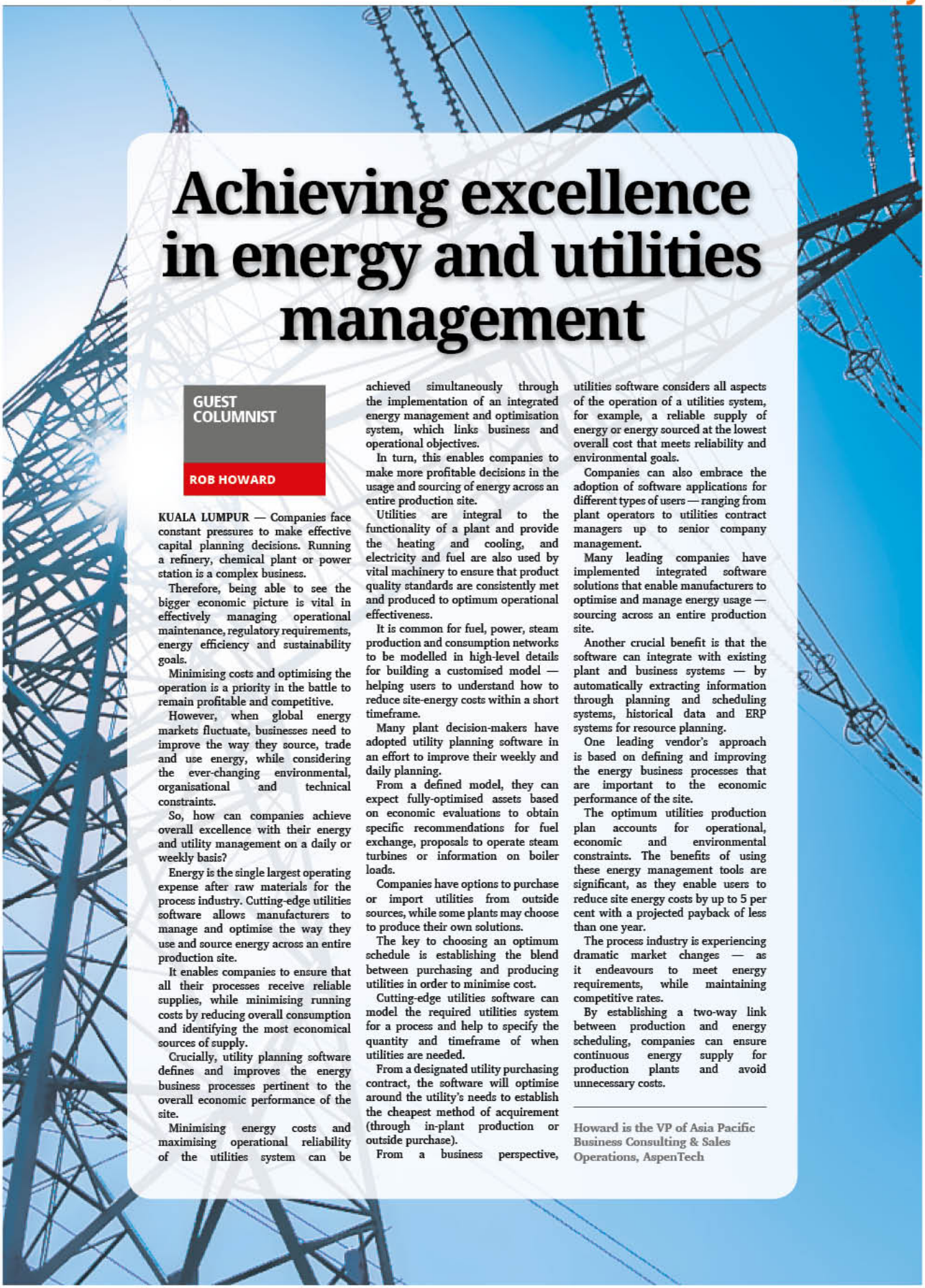

Achieving excellence in energy and utilities management

GUEST COLUMNIST

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KUALA LUMPUR — Companies face constant pressures to make effective capital planning decisions. Running a refinery, chemical plant or power station is a complex business.

Therefore, being able to see the bigger economic picture is vital in effectively managing operational maintenance, regulatory requirements, energy efficiency and sustainability goals.

Minimising costs and optimising the operation is a priority in the battle to remain profitable and competitive.

However, when global energy markets fluctuate, businesses need to improve the way they source, trade and use energy, while considering the ever-changing environmental, organisational and technical constraints.

So, how can companies achieve overall excellence with their energy and utility management on a daily or weekly basis?

Energy is the single largest operating expense after raw materials for the process industry. Cutting-edge utilities software allows manufacturers to manage and optimise the way they use and source energy across an entire production site.

It enables companies to ensure that all their processes receive reliable supplies, while minimising running costs by reducing overall consumption and identifying the most economical sources of supply.

Crucially, utility planning software defines and improves the energy business processes pertinent to the overall economic performance of the site.

Minimising energy costs and maximising operational reliability of the utilities system can be achieved simultaneously through the implementation of an integrated energy management and optimisation system, which links business and operational objectives.

In turn, this enables companies to make more profitable decisions in the usage and sourcing of energy across an entire production site.

Utilities are integral to the functionality of a plant and provide the heating and cooling, and electricity and fuel are also used by vital machinery to ensure that product quality standards are consistently met and produced to optimum operational effectiveness.

It is common for fuel, power, steam production and consumption networks to be modelled in high-level details for building a customised model — helping users to understand how to reduce site-energy costs within a short timeframe.

Many plant decision-makers have adopted utility planning software in an effort to improve their weekly and daily planning.

From a defined model, they can expect fully-optimised assets based on economic evaluations to obtain specific recommendations for fuel exchange, proposals to operate steam turbines or information on boiler loads.

Companies have options to purchase or import utilities from outside sources, while some plants may choose to produce their own solutions.

The key to choosing an optimum schedule is establishing the blend between purchasing and producing utilities in order to minimise cost.

Cutting-edge utilities software can model the required utilities system for a process and help to specify the quantity and timeframe of when utilities are needed.

From a designated utility purchasing contract, the software will optimise around the utility's needs to establish the cheapest method of acquirement (through in-plant production or outside purchase).

From a business perspective, utilities software considers all aspects of the operation of a utilities system, for example, a reliable supply of energy or energy sourced at the lowest overall cost that meets reliability and environmental goals.

Companies can also embrace the adoption of software applications for different types of users — ranging from plant operators to utilities contract managers up to senior company management.

Many leading companies have implemented integrated software solutions that enable manufacturers to optimise and manage energy usage — sourcing across an entire production site.

Another crucial benefit is that the software can integrate with existing plant and business systems — by automatically extracting information through planning and scheduling systems, historical data and ERP systems for resource planning.

One leading vendor's approach is based on defining and improving the energy business processes that are important to the economic performance of the site.

The optimum utilities production plan accounts for operational, economic and environmental constraints. The benefits of using these energy management tools are significant, as they enable users to reduce site energy costs by up to 5 per cent with a projected payback of less than one year.

The process industry is experiencing dramatic market changes — as it endeavours to meet energy requirements, while maintaining competitive rates.

By establishing a two-way link between production and energy scheduling, companies can ensure continuous energy supply for production plants and avoid unnecessary costs.

Howard is the VP of Asia Pacific Business Consulting & Sales Operations, AspenTech