

Why the jolt in power prices?

Market forces at home and abroad, and the fact that wholesale prices were artificially lower due to overcapacity, are at play

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For *The Straits Times*

Singapore's power market has been affected by multiple stresses over recent weeks. These include a global energy crunch, which sent global fuel prices spiralling upwards, and disruption to the piped natural gas supply.

Most consumers are on regulated tariffs or continue to be on retail contracts, and have not been affected. However, some have been hit by volatility in the Singapore Wholesale Electricity Market (SWEM).

Two main groups of consumers who had benefited from very low retail and wholesale prices in the last two years were affected. The first were those whose electricity retailer had exited the market owing to the price volatility amid a global energy crisis, and had to switch from a low-priced retail plan to either the regulated tariff or another retailer at higher prices.

The second were those who buy electricity directly from the SWEM, where wholesale prices doubled from October to last month.

As part of a recent suite of regulatory efforts, the Energy Market Authority this week announced it would introduce a Temporary Electricity Contracting Support Scheme (TRECS) for large consumers. This will offer access to one-month-ahead fixed-price plan contracts, achieving greater price certainty.

It is important to understand why Singapore's electricity prices fluctuate with the global energy situation, and how various options offer different pricing and risk levels, so consumers can choose what best suits them.

IMPACT OF RECENT STRESSES

Singapore is resource-poor and has limited renewable energy resources, given its land constraints. The country relies on imported natural gas, the cleanest-burning fossil fuel, for 95 per cent of its electricity generation.

While Singapore is shifting towards more solar deployment and electricity imports, natural gas is very important and will remain so for some years. For this reason, the nation's power system will continue to be exposed to global energy market forces.

To generate electricity, generation companies (gencos) need fuel input. Gencos buy natural gas through a combination of long-term direct supply contracts and spot market purchases. The recent global energy crunch was due to a combination of increased demand from economic activities, countries switching to natural gas as a cleaner fuel as part of their climate action and production outages.

This drove up prices of liquefied natural gas in Asia from an average of US\$6.60/mmbtu (metric million British thermal unit, a measure of heat content used to calculate the quantity of natural gas in energy terms) during the period from 2017 to last year, to a record US\$56/mmbtu in October.

While prices have stabilised at about US\$34.60/mmbtu early this month, prices remain elevated. Meanwhile, there are several disruptions with Singapore's piped natural gas supply owing to upstream production issues in the West Natuna gas field and a decrease in gas pressure from South Sumatra.

These have reduced the supply of lower-priced piped natural gas available to the gencos, while increasing the risk of plant "trips" – circuit-breakers disconnecting – when gencos have to switch to diesel as an alternative fuel.

The volatile market conditions make the business of power generation riskier. Gencos may be less willing to contract and pay spot gas prices to produce more electricity beyond their contracted positions owing to the higher risks that they may not get remunerated adequately through the SWEM. They expect to be paid higher prices for generating electricity. These could have led to the spikes in the wholesale market price in recent weeks.

This situation is not unique to Singapore. Across Europe, electricity prices are also facing the same volatility; prices are in cases nearly five times higher than in recent years.

Will high prices remain going into the next year? The market conditions and risks that triggered the recent high prices remain. Natural gas markets have been affected by high demand from China and Europe for the winter season, causing upward price pressure. The global energy transition away from coal to less-polluting natural gas may also

put continued pressure on natural gas prices beyond the winter season.

If fuel input costs remain high, what is the impact on consumers and will they still have access to stable and fair prices?

Like all other businesses, gencos need to recover costs to operate sustainably and this means that electricity prices need to cover the long-run marginal cost of production. Should fuel input prices continue to rise along with the various global factors, electricity prices will also need to increase.

However, there are various options that consumers can choose based on their appetite to accept risk for the opportunity to access lower prices.

OPTIONS FOR CONSUMERS

First, the regulated tariff is set based on the long-run marginal costs of generating units and is adjusted quarterly based on reasonable expectations of future production costs, taking into consideration the long-term fuel price benchmarks. As a result, the regulated tariff faces fewer fluctuations than the wholesale electricity price. It sets a "benchmark" of sorts against which we can compare other pricing options.

Second, consumers are able to enter into retail contracts with electricity retailers.

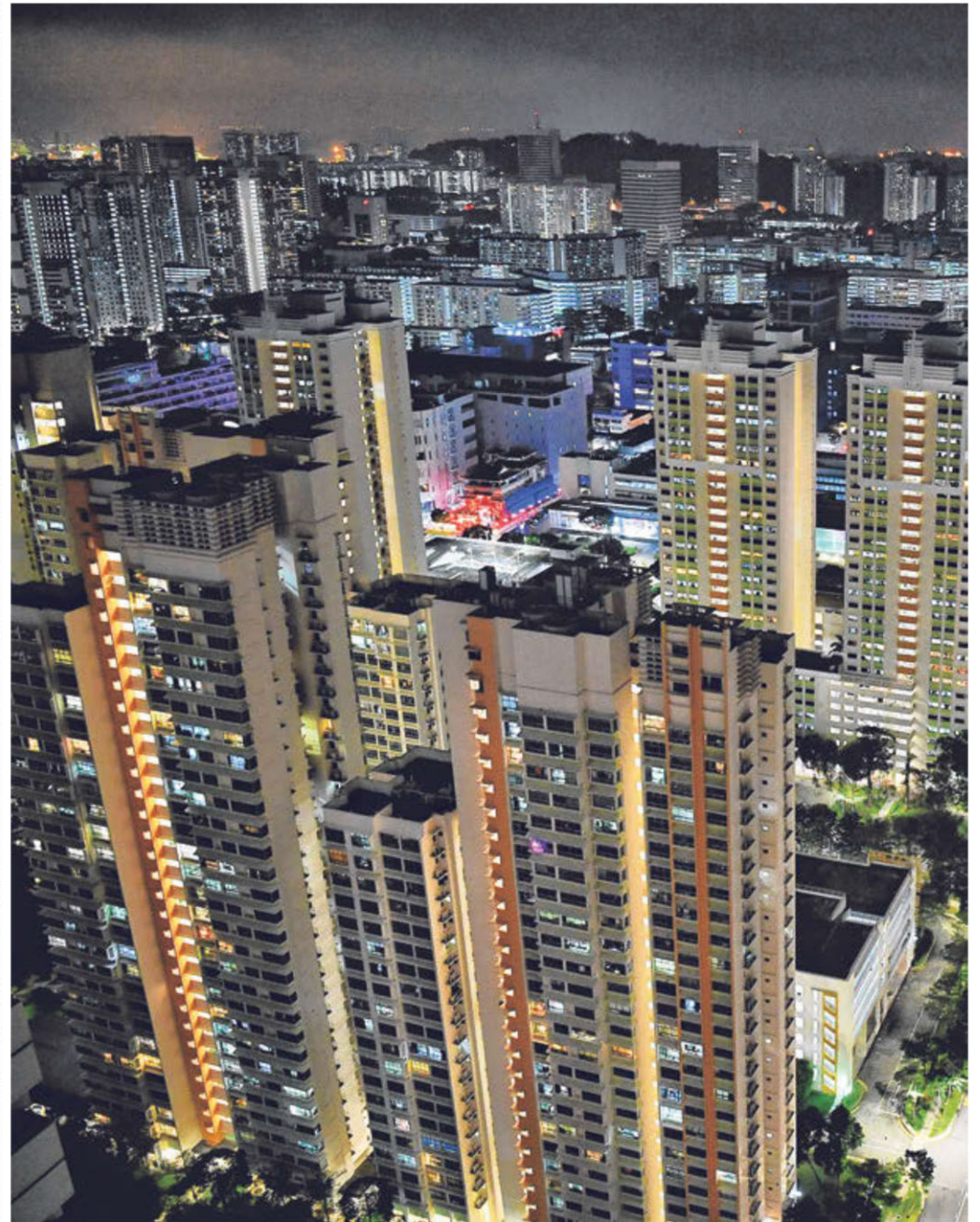
To attract consumers, retailers often offer prices below the regulated tariff, including both fixed-price plans and "discount-off-tariffs".

To serve their consumers, retailers aim to secure a combination of future purchase agreements and real-time purchases from the SWEM.

Over the past few years, retailers have been able to purchase electricity from the SWEM at very depressed prices owing to overcapacity in generation and oversupply of gas.

The gencos had entered into gas contracts with take-or-pay provisions with importers, which prompted them to produce more electricity and consume more gas to avoid having to pay penalties to the importers. Intense competition among gencos to sell electricity led to prices falling below the full cost of producing electricity. Gencos were making a loss, while consumers benefited from underpriced electricity.

Even without the recent stresses in the energy market, the overcapacity would have been alleviated and prices would have risen and normalised over the next few years. Electricity retailers would have had to raise their prices.



While Singapore is shifting towards more solar deployment and electricity imports, natural gas is still key. For this reason, its power system will continue to be exposed to global energy market forces, says the writer. ST PHOTO: CHONG JUN LIANG

However, the recent global energy shocks and volatility in the SWEM have created conditions which caused some retailers who were not hedged adequately to become commercially unviable, triggering market exits. Two retailers, iSwitch and Ohm Energy, quit Singapore's open electricity market. The *Straits Times* reported in October, and experts said that of the 10 remaining retailers, at least two others are set for the exit.

So while consumers can benefit from low prices over a short period, in the long run prices have to reflect the cost of production for a sustainable power system.

Finally, both households and large-scale consumers can purchase electricity directly from the SWEM, at the wholesale price. This offers access to prices that vary widely, depending on real-time power dispatch conditions. This can result in very high prices being faced in some periods and very low prices in others.

Consumers who are able to vary their electricity consumption in response to sudden price changes, and to identify and time their consumption around

low-price periods, should find this option the most attractive. However, many may lack the resources and flexibility to do this.

Still, some consumers had been attracted to switch to the SWEM owing to the very low prices seen in the last few years and overall consumers might still have gained from switching to the SWEM despite the current high wholesale prices.

Take a single consumer who can choose either the regulated tariff or the wholesale price. If we compare the cost under each option based on real (half-hourly) electricity consumption from Jan 1 last year to Oct 31 this year, the wholesale price is cheaper 97 per cent of the time, with total costs around 89 per cent of the regulated tariff – an 11 per cent discount.

If October 2021 is excluded from these calculations, arguably better reflecting "normal" times, the discount is significantly higher at about 37 per cent.

Consumers who are better able to manage risks would have benefited from buying directly from the SWEM.

The introduction of TRECS does

not alter the market features. Yet, in reaction to the multiple stresses facing Singapore's power market, it will give large electricity consumers access to a wider range of options to cope with the cost uncertainty.

Stable prices may not mean cheaper prices but will provide large consumers different options for mitigating the impact of price spikes amid Singapore's exposure to the vagaries of global energy markets.

Recent events expose certain fragilities within Singapore's power market that permit temporary but significant price distortions. Besides more active review and communication on energy market conditions, we must ensure that electricity is priced to incentivise the right behaviours while providing consumers access to pricing options that suit their needs and risk appetites.

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