National Electricity Market of Singapore

Market Surveillance & Compliance Panel Market Watch

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Second Quarter (April to June 2025)

Market Assessment Unit

Executive Summary

Energy prices in the National Electricity Market of Singapore ("NEMS") recorded a quarter-on-quarter ("QoQ") increase in Q2 2025, following a decline in the previous quarter. This rise was most likely driven by a tighter supply cushion and a greater proportion of higher-priced energy offers, despite lower underlying fuel costs. In line with the tighter supply cushion, Q2 2025 was characterised by higher and slightly more volatile Uniform Singapore Energy Price ("USEP") levels. This led to an increased frequency in Demand Response ("DR") activations and Temporary Price Cap ("TPC") applications this quarter, at 96 and 48 periods, respectively.

Ancillary service prices generally rose in tandem with energy prices on a QoQ basis.

For primary reserve, on a QoQ basis, a 6.52% drop in offer quantity occurred alongside a 4.53% reduction in requirement. This was in line with the quarterly average price clearing higher at $4.58/MWh in Q2 2025 compared to $1.79/MWh in Q1 2025, as primary reserve offers shifted to relatively more expensive price bands.

On a year-on-year ("YoY") basis, a similar trend was observed with a reduction of 0.52% in offer quantity along with a 0.40% lower requirement, pushing prices to clear higher in Q2 2025 compared to $4.17/MWh in Q2 2024. Notably, there was one period of primary reserve shortfall this quarter, amidst higher outages and a tight supply cushion. This was the first occurrence of a primary reserve shortfall since December 2022.

The contingency reserve price surged to $17.36/MWh in Q2 2025, reflecting a 255.09% QoQ increase and 48.55% YoY decrease. This occurred amidst a slightly higher contingency reserve requirement, which rose by 0.74% QoQ and 0.12% YoY. Contingency reserve shortfalls were recorded in 11 periods during Q2 2025, compared to three periods in Q1 2025 and 28 periods in Q2 2024. The higher frequency of shortfalls in Q2 2025 compared to the previous quarter was mainly attributed to a 1.97% reduction in the contingency reserve offer availability. Notably, the energy supply cushion dipped below 6.0% during the periods, leading to overall tighter supply conditions.

In contrast, the regulation requirement declined 1.63% QoQ and 4.73% YoY to an average of 108 MW in Q2 2025. Amidst the lower requirement, the regulation price rose 63.18% QoQ to $19.36/MWh, while falling 50.13% YoY. Regulation shortfall occurred in four periods during Q2 2025 when the supply cushion dipped as low as 2.0%. This was compared to zero occurrences of shortfall in Q1 2025 and 10 occurrences in Q2 2024.

Table 1: Energy and Ancillary Services Prices by Quarter

Quarter	Q2 2024	Q1 2025	Q2 2025
Energy ($/MWh)			
USEP	237.50	105.84	137.67
WEP	237.41	106.01	137.84
Ancillary Services ($/MWh)			
Primary Reserve	4.17	1.79	4.58
Contingency Reserve	33.73	4.89	17.36
Regulation	38.82	11.86	19.36

Prices in Q2 2025

In Q2 2025, the vesting contract price increased 2.17% to $197.09/MWh on a QoQ basis, despite the fuel oil price declining by 8.00% to US$434.13/MT (Chart 1). This suggested the influence of other non-fuel components to the vesting contract price.

However, on a YoY comparison, the vesting contract price fell by 6.00%, consistent with a 14.08% decrease in fuel oil price, signifying fuel price as a key driver.

While the Wholesale Electricity Price ("WEP") continued to clear below the vesting contract price (Chart 2), the difference between the two prices narrowed significantly to $59.24/MWh in Q2 2025, compared with $86.90/MWh in the previous quarter. This marks the fourth consecutive quarter in which the WEP cleared below the vesting contract price. The narrowing gap between the two prices suggests that market outcomes are becoming more aligned with the Energy Market Authority's objectives under the current five-year vesting regime, which was implemented on 1 July 2023 to curb market power and enhance price stability.

The relationship between the WEP and the metered energy quantity strengthened slightly during the quarter (Chart 3). The correlation rose to 0.31 in Q2 2025, compared to 0.27 in Q1 2025. There were 23 out of 91 days in Q2 2025 when the correlation exceeded 0.5, an increase from 16 days in the previous quarter. The stronger correlation in Q2 2025 was largely contributed by the higher positive correlation in April, when there were 14 out of 30 days in April for which r was greater than 0.5.

On a YoY comparison, the correlation in Q2 2025 was weaker, as Q2 2024 recorded a higher correlation of 0.58, with 60 out of 91 days greater than 0.5.

The distribution of the WEP by hours shifted toward higher price ranges during the quarter (Chart 4). The frequency of WEP above $200/MWh recorded 12.68% in Q2 2025, an increase from 1.46% in Q1 2025 and a drop from 27.52% in Q2 2024. The distribution of WEP continued to peak in the range between $100/MWh and $150/MWh for all quarters with the frequency reaching 44.3% in Q2 2025, compared to 52.01% in Q1 2025 and 41.28% in Q2 2024. The distribution of the WEP weighted by metered energy quantity trended in a similar manner on a QoQ and YoY basis (Chart 5).

Chart 1. WEP Versus Fuel Oil Price

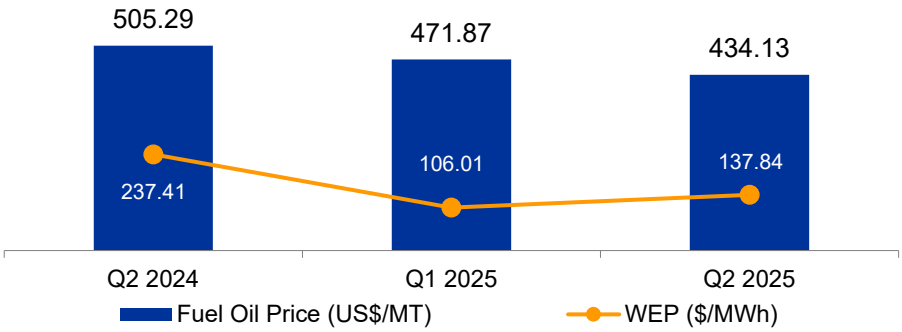


Chart 2. Vesting Contract Price Versus WEP by Quarter

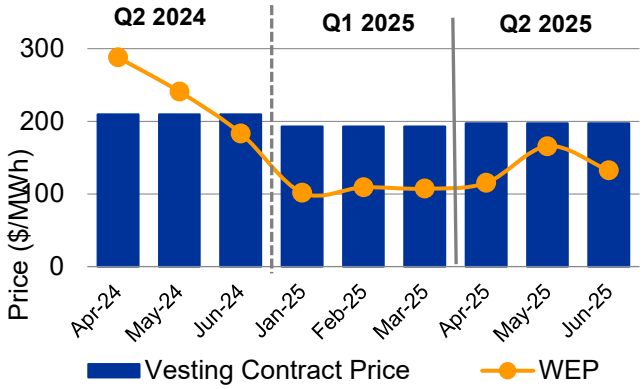


Chart 3. Correlation Between WEP and Metered Energy Quantity

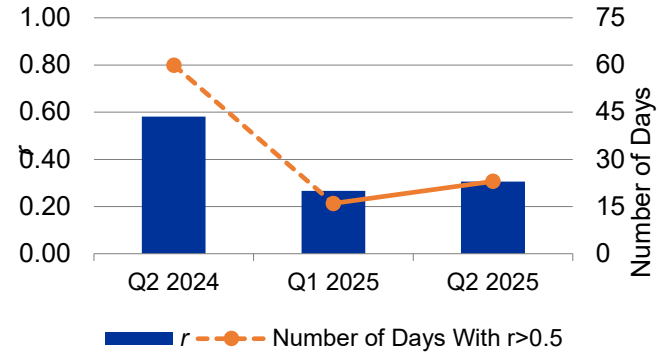


Chart 4: Distribution of WEP over Time

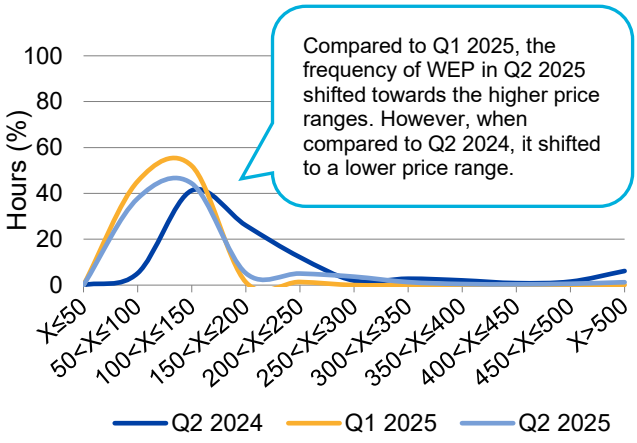
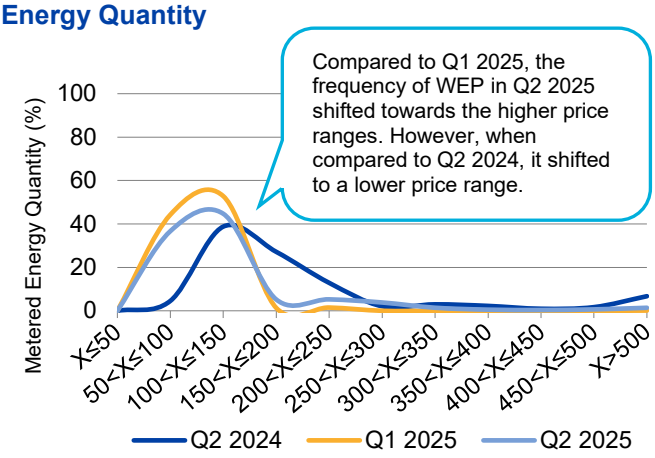


Chart 5: Distribution of WEP over Total Metered Energy Quantity



Demand in Q2 2025

On a QoQ basis, the average forecast demand and actual demand this quarter strengthened in tandem with the rise in average temperature (Chart 6). Compared to Q1 2025, the average temperature increased by 1.14°C, leading to a 5.62% rise in average forecast demand to 6,661MW and a 5.96% growth in average actual demand to 6,780MW. Peak forecast demand and peak actual demand rose by 5.88% and 6.25%, reaching 7,775MW and 8,051MW, respectively (Chart 7).

On a YoY comparison, Q2 2025 experienced a slight decrease in average temperature of 0.05°C. Despite this marginal decline, the forecast and actual demand strengthened by 0.95% and 2.72%, respectively. Peak forecast and actual demand also increased, by 0.89% and 3.47%, respectively.

For the forecast demand and solar generation profiles, the highest average forecast demand in Q2 2024 occurred in Period 41 at 7,102MW (Chart 8). However, the peak shifted to Period 40 in both Q1 2025 and Q2 2025, where it reached 6,901MW and 7,283MW, respectively. Similarly, the highest average solar generation forecast moved progressively earlier, from Period 28 in Q2 2024 (at 475MW), to Period 27 in Q1 2025 (at 580MW), and Period 26 in Q2 2025 (at 658MW). This shift in the solar generation profile reflects the growing contribution of solar generation during daytime hours.

Chart 6. Average Forecast and Actual Demand Versus Average Temperature

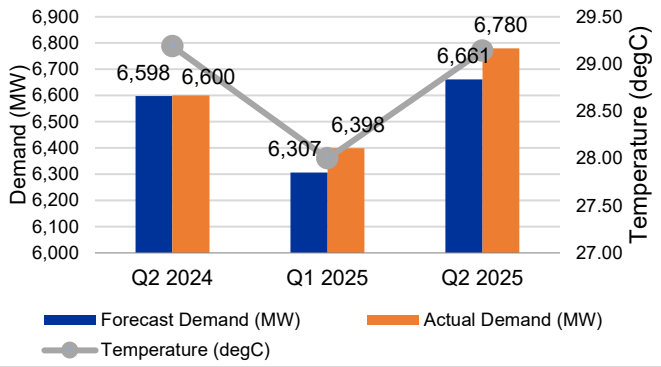


Chart 7. Peak Forecast and Actual Demand

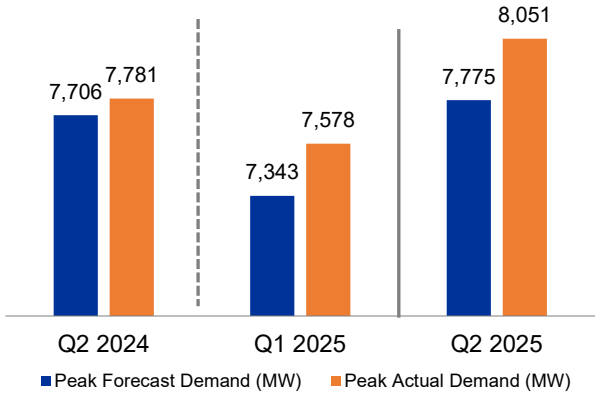


Chart 8. Average Forecast Demand and Average Solar Generation Forecast Periodic Profiles

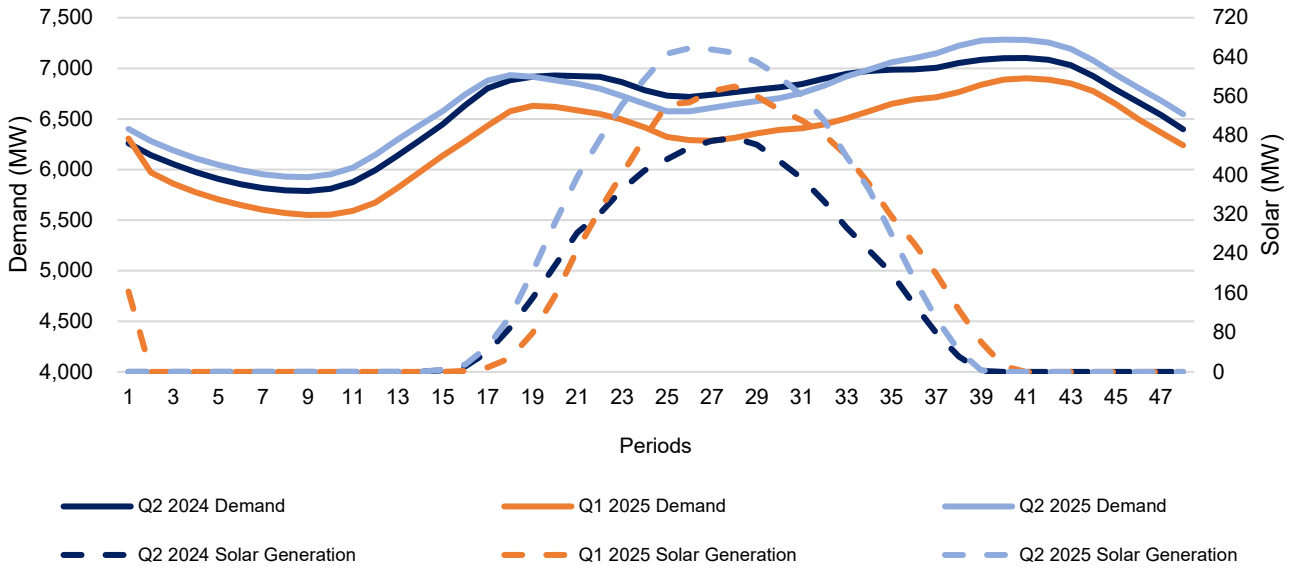


Chart 9 illustrates the variations in the load forecast used in the Pre-dispatch Schedule (PDS) and Short-term Schedule (STS) against the Real-time Schedule (RTS), as supplied by the Power System Operator. As the STS is updated more frequently and closer to the real-time dispatch period, it typically exhibits smaller load variations from the real-time dispatch schedule than the PDS.

The average load variation between the RTS and the STS increased marginally by 0.04 percentage point in Q2 2025 compared to Q1 2025. At the monthly level, the load forecasted for STS was on average higher than the RTS during April and May, but lower for June, with the variation between the RTS and the STS ranging from -0.07% to 0.12%.

The average load variation between the RTS and the PDS rose marginally from 0.48% in Q1 2025 to 0.49% in Q2 2025. At the monthly level, the load forecasted for PDS was on average lower than RTS for all the months in both quarters. This resulted in the load forecasted for RTS exceeding the PDS by a range of 0.14% to 0.71% in Q1 2025, and slightly wider in Q2 2025 ranging from 0.04% to 0.77%.

For most of the months in all quarters, the load forecasted for STS and PDS are lower than the RTS. The variations between the RTS and the STS continued to be smaller in comparison to the variations between the RTS and the PDS. This is consistent with the expectation that there is a more accurate load forecasting nearer to real-time, as the STS is generated more frequently and closer to the RTS.

Chart 10 shows the variation between the load forecast in the RTS and the metered energy quantity, in absolute terms. In Q2 2025, the quarterly variation increased to 1.02%, up from 0.63% in Q1 2025 and 0.40% in Q2 2024. However, on a monthly basis, Q2 2025 experienced smaller fluctuations on QoQ and YoY comparison. The monthly variations in Q2 2025 ranged between 0.94% and 1.11%, compared to a wider spread of 0.02% to 1.21% in Q1 2025 and of 0.29% to 0.47% in Q2 2024.

Chart 9. Monthly Average Variation in Load Forecast

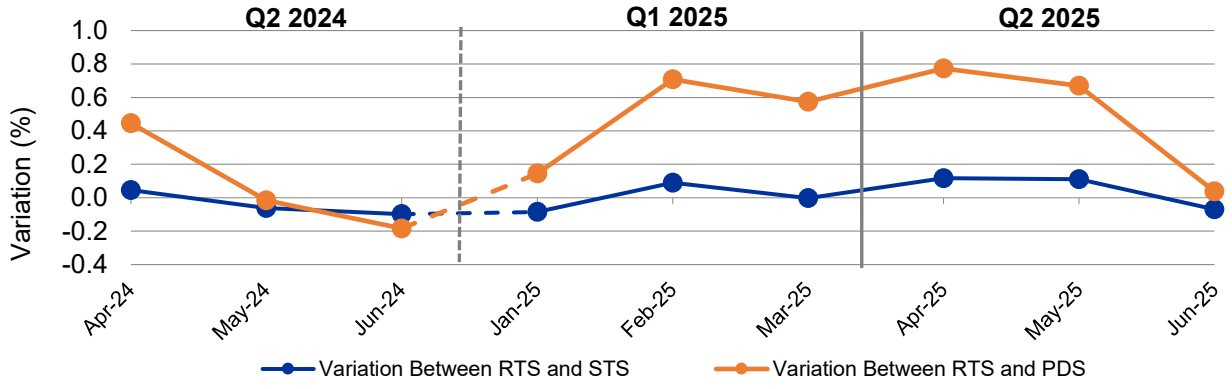
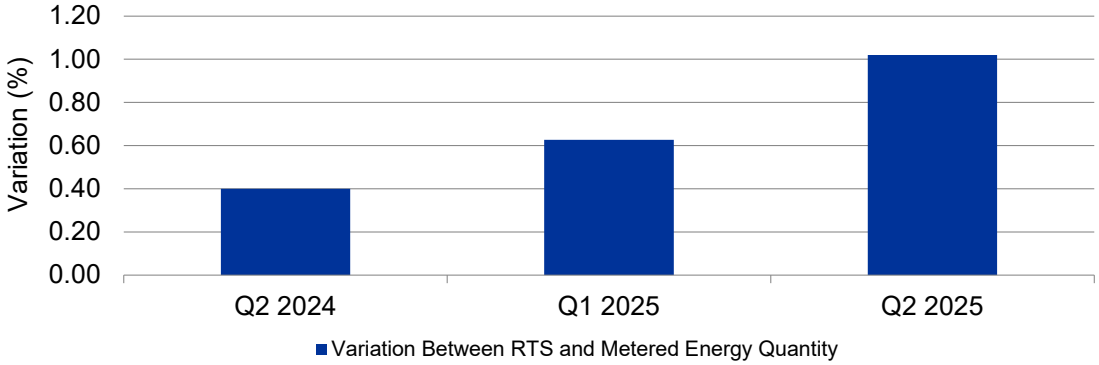


Chart 10. Quarterly Average Variation[1] Between Real-Time Dispatch Schedule and Metered Energy Quantity



[1] The metered energy quantity reflects the actual demand, while the load forecast in the RTS reflects the system demand including the station and auxiliary loads. This difference in methodology creates a variation between the RTS and the metered energy quantity, with the former being higher than the latter for the same trading period.

Supply and Supply Cushion in Q2 2025

In Q2 2025, total supply rose 3.47% despite higher outage levels (Table 2). The growth in supply was partly driven by the entry of a new Open-Cycle Gas Turbine ("OCGT") facility from G9, adding 100MW of generation capacity to the NEMS this quarter.

In comparison to the previous quarter, there was an increase in the proportion of energy offers priced at and above $500/MWh, which grew by 0.55 percentage point to 5.97% in Q2 2025 (Chart 11). On the other hand, the proportion of energy offers priced below $200/MWh increased slightly by 0.43 percentage points to 90.53% in Q2 2025, consistent with the 8.00% reduction in fuel oil price.

The supply cushion weakened by 1.75 percentage points to 14.37% in Q2 2025, as the 5.62% as rise in demand outpaced the supply growth. The tighter supply conditions, along with the relatively more expensive energy offers, pushed the USEP up 30.07% to a quarterly average of $137.67/MWh (Chart 12). At the periodic level, the USEP exceeded $1,000/MWh for eight periods in Q2 2025, of which four periods reached above $4,000/MWh. In contrast, only a single period in Q1 2025 saw the USEP crossing $1,000/MWh.

The slightly more volatile USEP in Q2 2025 was reflected in the increased frequency of TPC applications and DR activations, particularly in May and June when higher outages and tight supply conditions were observed. The number of TPC applications rose from zero periods in Q1 2025 to 48 periods in Q2 2025, while DR activations jumped from one period in Q1 2025 to 96 periods this quarter (Chart 13). The spread between the average counterfactual USEP ("CUSEP")[2] and the USEP (or reference USEP ("RUSEP")[3] for the periods when TPC was applied), widened from $10.45/MWh in Q1 2025 to $25.21/MWh in Q2 2025. This indicated that with each MW of consumption, consumers benefitted from the estimated higher average cost savings for each MW of consumption.

On a YoY basis, the supply grew by 3.62% in Q2 2025 while demand increased by 0.95%, resulting in a 2.25 percentage point expansion of the supply cushion. Fuel oil price also fell significantly by 14.08%, aligned with the lower concentration of energy offers in price ranges below $200/MWh. In line with the higher supply cushion, the USEP averaged 42.04% lower than the same quarter last year, at $237.50/MWh in Q2 2024. On a periodic level, the number of periods of USEP above $1,000/MWh reduced from 74 periods in Q2 2024 to eight periods in Q2 2025.

The frequency of TPC application and DR activations dropped on a YoY comparison, from 432 periods of TPC application and 214 DR activations in Q2 2024 to 48 periods of TPC application and 96 DR activations in Q2 2025. The USEP reduction from DR, also declined from $90.94/MWh in Q2 2024 to $25.21/MWh in Q2 2025.

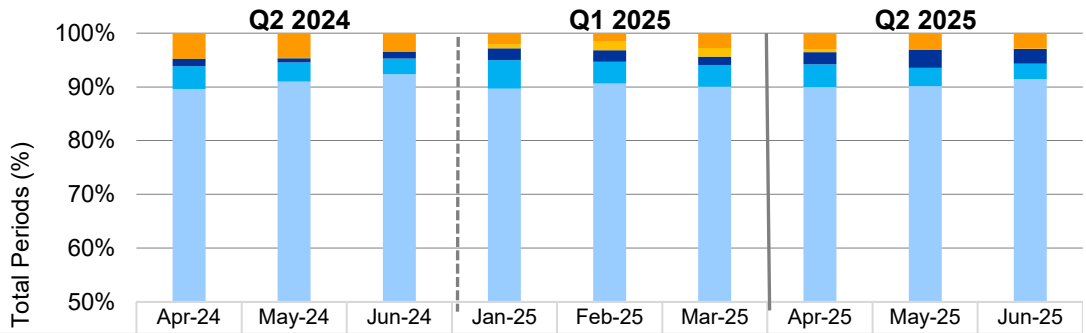
Table 2. Total Outage, Quarterly Average Supply and Supply Cushion

Quarter	Q2 2024	Q1 2025	Q2 2025
Outage (MW)			
Average Planned Outage	1,442.40	898.27	1,098.88
Average Forced Outage	18.78	7.18	61.08
Supply (MW)			
Average Supply	7,503	7,513	7,774
Supply Cushion (%)	12.12	16.12	14.37

[2] The counterfactual USEP ("CUSEP") is calculated by the market clearing engine ("MCE") with the assumption that there are no dispatchable energy bids.

[3] The Reference USEP ("RUSEP") is the uncapped counterfactual USEP when the Temporary Price Cap ("TPC") is in effect.

Chart 11. Trend Of Energy Offer Price Proportion



	Apr-24	May-24	Jun-24	Jan-25	Feb-25	Mar-25	Apr-25	May-25	Jun-25
≥ $3,000/MWh	4.70	4.63	3.43	2.07	1.59	2.73	3.00	3.03	2.88
≥ $1,000/MWh and < $3,000/MWh	0.03	0.02	0.00	0.76	1.57	1.62	0.53	0.02	0.04
≥ $500/MWh and < $1,000/MWh	1.42	0.81	1.27	2.20	2.16	1.56	2.27	3.40	2.75
≥ $200/MWh and < $500/MWh	4.25	3.52	2.97	5.32	4.07	4.06	4.20	3.40	2.88
< $200/MWh	89.61	91.02	92.33	89.65	90.62	90.02	90.00	90.15	91.44

Chart 12. USEP and Supply Cushion

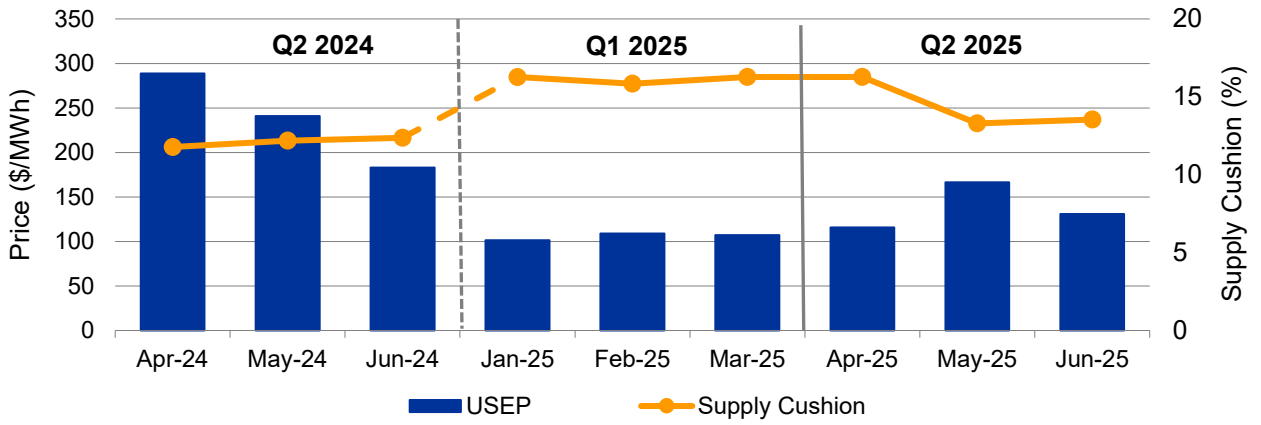
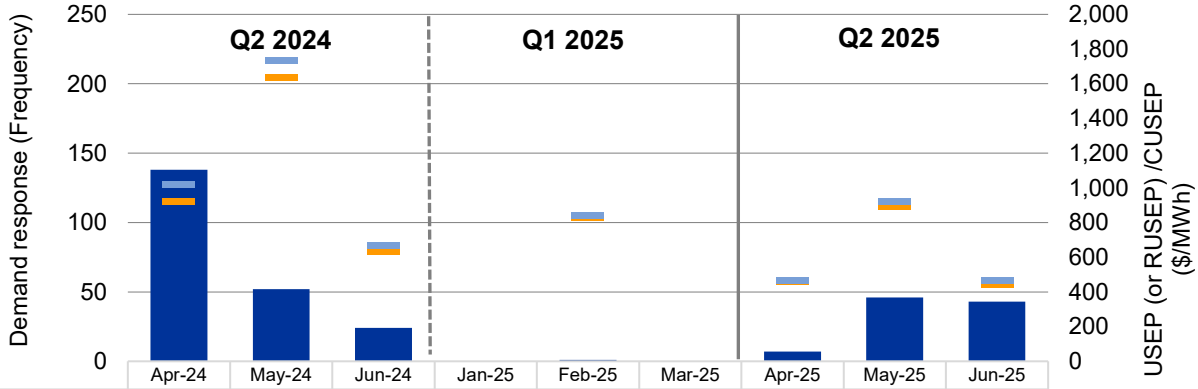


Chart 13. Demand Response Activations[4]



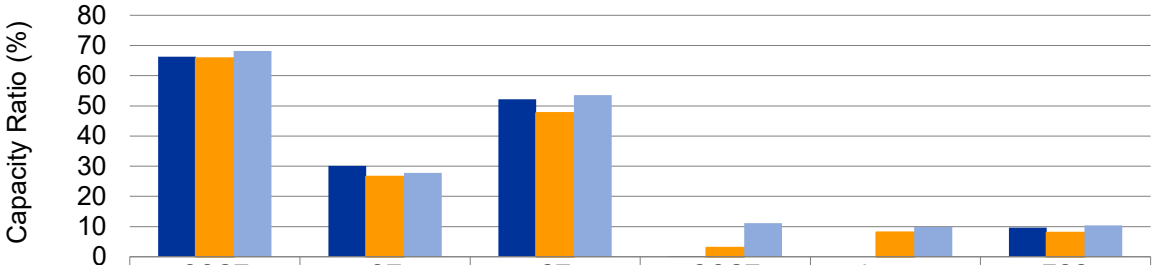
	Apr-24	May-24	Jun-24	Jan-25	Feb-25	Mar-25	Apr-25	May-25	Jun-25
DR Frequency	138	52	24		1		7	46	43
USEP (or RUSEP) ($/MWh)	923.45	1,635.54	629.60		828.81		457.80	890.38	439.83
CUSEP ($/MWh)	1,021.83	1,731.87	666.08		839.26		463.39	919.03	464.55

[4] The frequency of Demand Response ("DR") activations and the associated average USEP (or RUSEP) and CUSEP during those periods with DR activations.

Compared to Q1 2025, the capacity ratios for Combined-Cycle Gas Turbine ("CCGT"), Other Turbines ("OT"), Steam Turbine ("ST"), OCGT, Electricity Imports ("Import") and Energy Storage System ("ESS") generation types increased across the board in Q2 2025 (Chart 14). Among all generation types, OCGT recorded the largest increase in the capacity ratio. This was driven by its scheduled generation rising by a greater extent than the growth in its maximum generation capacity. The increase in the scheduled generation was in line with the higher demand this quarter.

On a YoY basis, the capacity ratios in Q2 2025 increased for most generation types when compared to Q2 2024, with the exception of a slight dip in the capacity ratio for OT.

Chart 14. Capacity Ratio by Generation Type[5]

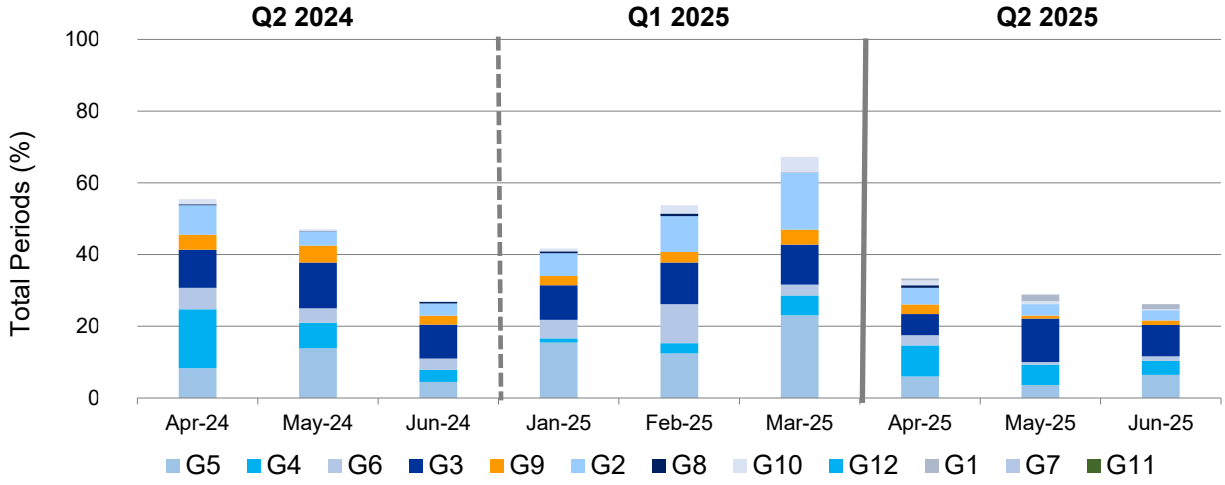


	CCGT	OT	ST	OCGT	Import	ESS
Q2 2024	66.30	30.07	52.19	0.26	0.00	9.68
Q1 2025	65.75	26.52	47.65	3.01	8.07	7.91
Q2 2025	68.18	27.84	53.55	11.13	9.82	10.42

Chart 15 shows the monthly breakdown of price-setting generation companies. Compared to Q1 2025, G3 overtook G5 as the most frequent price setter, accounting for 30.48% of all periods with a price setter in Q2 2025. G3 set the price for 25.36% of all periods with price setter in the same quarter last year.

The top three generation companies identified as price setters in Q2 2025 were G3, G4 and G5, accounting for a combined 69.36% of periods with a price setter. This marked a shift from the previous quarter where the top three generation companies were G2, G3 and G5, contributing a slightly higher share of 71.32%. In Q2 2024, the top three generation identified as price setters is the same as Q2 2025, where G3, G4 and G5 accounted for 66.70% of such periods.

Chart 15. Trend of Price Setting Generation Companies



[5] The capacity ratio of a generation facility measures its scheduled generation output relative to its maximum generation capacity. The generation types are: Combined-Cycle Gas Turbine ("CCGT"), Other Turbines ("OT"), Steam Turbine ("ST"), Open-Cycle Gas Turbine ("OCGT"), Electricity Imports ("Import"), and Energy Storage System ("ESS").

Market Concentration in Q2 2025

Based on metered energy quantity (Chart 16), G2 replaced G6 to join G4 and G5 as the generation companies with the largest market share in Q2 2025. These three leading generation companies accounted for 49.57% of the metered energy quantity in Q2 2025, which is decline of 0.89 and 2.18 percentage points in a QoQ and YoY basis, respectively.

Based on maximum generation capacity (Chart 17), the identities of the three generation companies with the largest market share remained unchanged across all three quarters. These three generation companies made up 49.46% of the total generation capacity in the market in Q2 2025, down 0.43 percentage point from the previous quarter, and 5.98 percentage points compared to a year ago. On QoQ comparison, the market share of most generation companies were slightly diluted, with the exception of G9, which gained market share due to the registration of a new 100MW facility in April 2025.

On a YoY basis, expansion of market share was observed for G9, G12, and G11. This growth was driven by capacity additions, including two OCGT facilities totalling 682MW registered under G12 in February 2025, two Import facilities totalling 250MW under G11, and the aforementioned OCGT facility registered under G9.

In QoQ and YoY comparisons based on generation types (Chart 18), the CCGT facilities continued to dominate the market share based on metered energy quantity, a reflection of CCGT as the most efficient generation technology in the NEMS. On a QoQ basis, the slight reduction in the CCGT market share was offset by growth in the share of OCGT and Import, which recorded higher metered energy quantity. On the other hand, OCGT was the only generation type to expand its market share based on maximum generation capacity in Q2 2025 as its growth is attributed to the registration of a new OCGT facility (Chart 19).

Chart 20 shows the frequency of pivotal suppliers per trading period for each month. On a QoQ comparison, the total number of periods with four or more pivotal suppliers rose from 1,131 in Q1 2025 to 1,665 in Q2 2025. Similarly, periods with seven or more pivotal suppliers increased sharply from just one period to 49 periods in Q2 2025. This aligned with the tighter supply cushion this quarter as the number of periods with supply cushion below 15% grew from 1,834 in Q1 2025 to 2,445 in Q2 2025.

On YoY comparison, the number of periods with four or more pivotal suppliers declined from 2,712 in Q2 2024 to 1,665 in Q2 2025. Likewise, periods with seven or more pivotal suppliers fell from 132 periods in Q2 2024 to 49 periods in Q2 2025. This was in line with a lower supply cushion was noted in Q2 2024 as compared to Q2 2025. Notably, the periods of supply cushion below 15% decreased from 3,227 periods in Q2 2024 to 2,445 periods in Q2 2025.

Chart 16. Market Share of Generation Companies Based on Metered Energy Quantity[6]

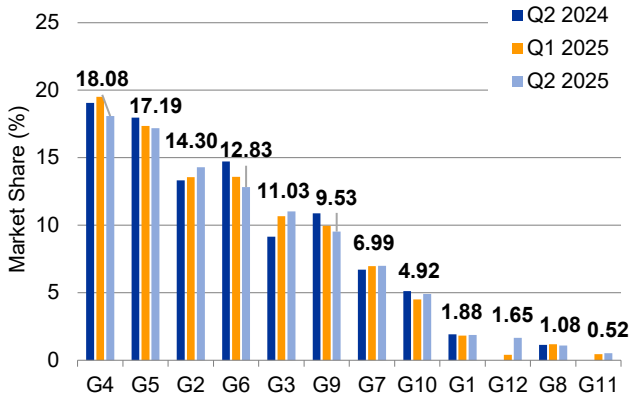


Chart 17. Market Share of Generation Companies Based on Maximum Generation Capacity[7]

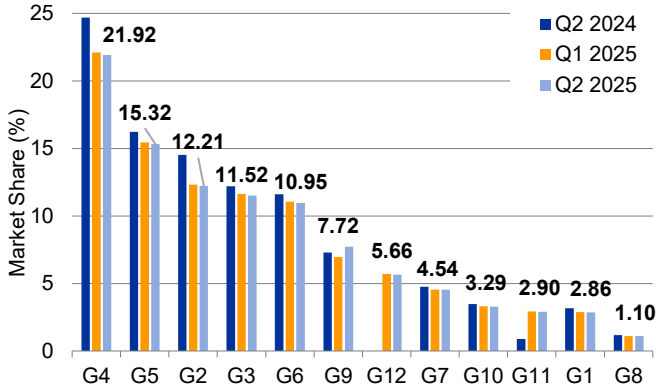
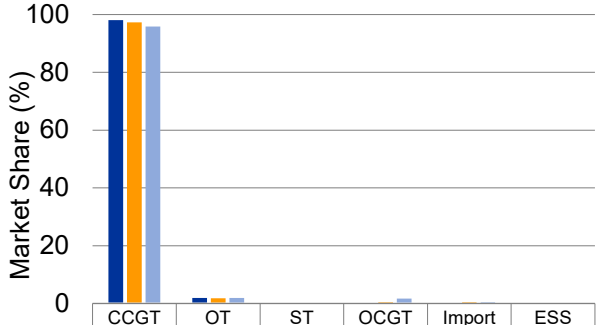
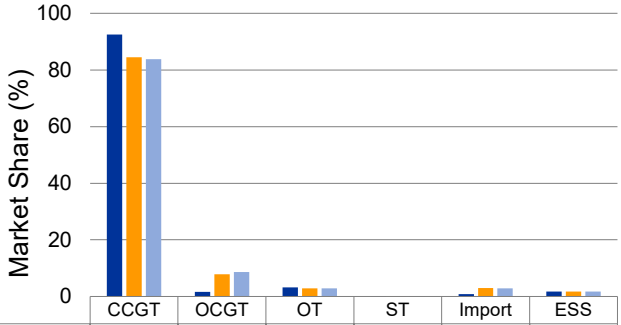


Chart 18. Market Share by Generation Types Based on Metered Energy Quantity[8]



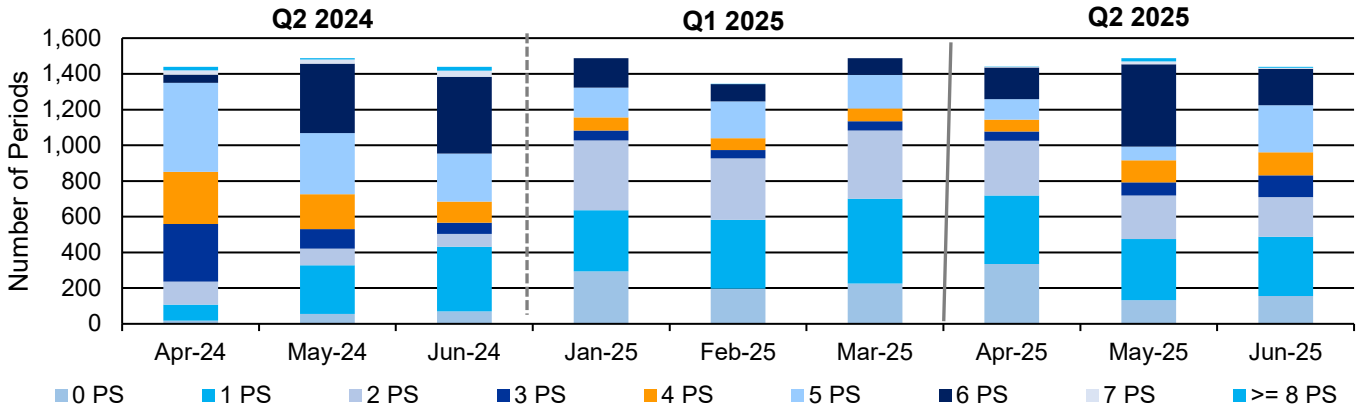
	CCGT	OT	ST	OCGT	Import	ESS
Q2 2024	98.03	1.92	0.05	0.01	0.00	0.00
Q1 2025	97.26	1.82	0.04	0.43	0.46	0.00
Q2 2025	95.85	1.88	0.01	1.74	0.52	0.00

Chart 19. Market Share by Generation Types Based on Maximum Generation Capacity[9]



	CCGT	OCGT	OT	ST	Import	ESS
Q2 2024	92.46	1.58	3.17	0.12	0.88	1.79
Q1 2025	84.48	7.88	2.89	0.12	2.93	1.70
Q2 2025	83.79	8.64	2.86	0.12	2.90	1.68

Chart 20. Frequency of Generation Companies as Pivotal Suppliers (PS) Per Period



[6] Excludes intermittent generation facilities and Market Participants with net negative quarterly metered energy quantity.
[7] Excludes intermittent generation facilities and Market Participants with less than 10 MW maximum generation capacity. The actual capacities of the ESS facilities are used for the computation.
[8] Excludes intermittent generation facilities and technology type with net negative quarterly metered energy quantity.
[9] Excludes intermittent generation facilities and Market Participants with less than 10 MW maximum generation capacity. The actual capacities of the ESS facilities are used for the computation.

National Electricity Market of Singapore

Compliance Statistics for Q2 2025

Potential Breaches of the Market Rules

Determinations*

Enforcement

164 cases in total	**141 determinations in total**	**3 determinations in total**
1 non-gate closure	**3** cases determined to be in breach	**2** financial penalties
163 gate closure	**6** cases determined to take no further action	**1** non-compliance letter
	132 cases determined not to be in breach	**0** suspension order
		0 termination order
		0 other MSCP order
		$14,400 of financial penalty imposed
		$6,600 of costs awarded

*This section includes determinations of cases referred to the MSCP in previous quarters.

The MSCP issued three rule breach determinations this quarter:

i. 1 case from ExxonMobil Asia Pacific Pte. Ltd. regarding its failure to comply with gate closure rules on 13 December 2024 (Financial penalty of $5,000, and costs of $2,200)

ii. 5 cases from ExxonMobil Asia Pacific Pte. Ltd. regarding its failure to comply with gate closure rules and submit offer variations to reflect generating capability on 27 January 2025 (Financial penalty of $9,400, and costs of $2,200)

iii. 1 case from TP Utilities Pte. Ltd. regarding its failure to comply with gate closure rules on 17 February 2025 (Letter of non-compliance, and costs of $2,200)

MSCP Market Watch

The MSCP Market Watch is a quarterly report prepared by the Market Assessment Unit ("MAU") of EMC and submitted to the MSCP. The report summarises the MAU's day-to-day monitoring, evaluation activities and analyses, and compares the market performance for the current quarter with the quarter a year ago and the previous quarter.

All prices and percentages in this report are rounded off to two decimal places.

The User Guide to MSCP Market Watch provides a glossary of the terms used in the MSCP Market Watch among other information to facilitate readers' understanding.

Market Surveillance and Compliance Panel

The MSCP is established by the EMC Board in accordance with section 2.6 of Chapter 3 of the Singapore Electricity Market Rules.

The MSCP, with the assistance of the MAU, monitors and investigates the conduct of market participants, the market support services licensee, EMC and the Power System Operator and the structure and performance of the wholesale electricity markets.

The MSCP comprises the following members:

- Professor Walter Woon, Chairman
- Philip Chua
- Professor Euston Quah
- Dr Stanley Lai
- Yeo Yek Seng

Disclaimer

If you have any specific query or feedback for the improvement of this publication, you may write to mau@emcsg.com.