Economic Regulation Authority

Electricity Generation and Retail Corporation regulatory scheme

2025 effectiveness review

Discussion Paper

15 September 2025

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Invitation to make submissions

Submissions are due by 4:00pm WST, Monday, 13 October 2025

The ERA invites comment on this paper and encourages all interested parties to provide comment on the matters discussed in this paper and any other issues or concerns not already raised in this paper.

We would prefer to receive your comments via our online submission form https://www.erawa.com.au/consultation.

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Please note that submissions provided electronically do not need to be provided separately in hard copy.

All submissions will be made available on our website unless arrangements are made in advance between the author and the ERA. This is because it is preferable that all submissions be publicly available to facilitate an informed and transparent consultative process. Parties wishing to submit confidential information are requested to contact us at info@erawa.com.au.

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Executive summary

The Economic Regulation Authority is conducting its seventh review of the effectiveness of the Electricity Generation and Retail Corporation (EGRC) regulatory scheme. The ERA conducts this review every two years and provides its report with any findings and recommendations to the Minister for Energy. This discussion paper outlines the ERA's initial findings, and seeks comment to inform our final report.

The EGRC scheme commenced in 2014 with the merger of the State Government-owned retailer (Synergy) with generator (Verve Energy). It aims to curtail Synergy's potential exercise of market power in the Wholesale Electricity Market (WEM), to promote a level playing field for wholesale suppliers of electricity, for the ultimate benefit of consumers.

The main element of the EGRC scheme is to require Synergy to advertise standardised wholesale electricity contracts – called standard products – for sale and purchase.

Market participants may use standard products to hedge against price variation in the electricity spot market and as a means of price discovery when negotiating wholesale electricity contracts and when making operational decisions.[1] The regulated maximum difference, or buy-sell spread, between Synergy's buy and sell prices for standard products places pricing discipline on Synergy taking advantage of its dominant position in the short-term to medium-term contract market. If the spread is set at the maximum – currently 15 per cent – and Synergy increases its sell price, it must also increase its buy price. An increased buy price will place Synergy at risk of being obligated by competitors to buy energy at high prices.

In this 2025 review, the ERA evaluated the effectiveness of the pricing of standard products, including the method to set the buy-sell spread, as well as the suitability of the terms and specifications of the standard products contracts. This review also considered the prevailing circumstances of the South West Interconnected System (SWIS), which included the introduction of a new WEM in October 2023, the State Government's pathway for decarbonisation, and Synergy's changing generation asset mix.

Key findings

Standard products and the WEM

The new WEM since October 2023 has been characterised by high and volatile prices. This volatility has started to decrease with the introduction of grid-scale batteries as well as changes to the Electricity System and Market (ESM) Rules that occurred on 20 November 2024. However, it is not clear whether the market will further stabilise, given the projected supply shortfalls recently published in the WEM Electricity Statement of Opportunities.[2]

This price volatility further reinforces the need for risk mitigation options for market participants, as some rely on access to contracts to hedge their risk and remain viable in the market. Synergy is the main supplier of risk management products in the WEM, through the provision of bilateral customised and standard products. The high level of market concentration in the WEM, derived by the Herfindahl-Hirschman Index (HHI), means that

[1] The spot market refers to the balancing market before 1 October 2023 and the real-time market for energy after 1 October 2023.

[2] Australian Energy Market Operator, 2025, *2025 WEM Electricity Statement Of Opportunities*, (online).

participants' options other than from Synergy appear limited as Synergy's standard product price data is the only publicly available data source.

Synergy sets its standard product prices based on its forecast of forward energy market prices. Such forecasting has proven difficult given the recent price volatility. Significant forecast error can result in market participants' entering into contracts that may be inefficient. It could also lead to under-compensation and over-compensation of risk for transacting parties, including Synergy.

Additionally, Synergy's circumstances are changing as it closes its coal-fired generators and adds more Battery Energy Storage Systems (BESS) and renewable capacity to its fleet. If Synergy's overall load obligations become greater than the amount of electricity it will have available, Synergy's position would change from being a net supplier to a net consumer of electricity in the WEM. To meet any shortfalls in this scenario, Synergy would likely be required to make purchases of electricity, which could be through bilateral contracts, the short-term energy market (STEM) or real time market. If Synergy becomes short on energy, this can affect Synergy's incentives to trade standard products, as it will not want to sell electricity, except at high prices, whilst also wanting to purchase electricity at the lowest price possible.

However, if Synergy reduces its standard product's buy price, Synergy must reduce its sell price consistent with the requirement to price within the buy-sell spread. In this scenario, counterparties are more incentivised to buy electricity from Synergy, rather than sell to Synergy if they perceive the buy price to be lower than what will occur in the RTM, which can create another market distortion.

The scheme was implemented in 2014 when Synergy was a net supplier of energy. Even if Synergy's net position changes to a net buyer, it will still continue to be the largest generating market participant and retailer in the WEM. Therefore, regardless of Synergy's net energy position, it will continue to have the ability and opportunity to exercise market power, which the EGRC scheme is designed to mitigate against.

The ERA welcomes stakeholder feedback on the design and operation of the scheme, particularly on how the scheme can address Synergy's potential to exercise market power on either the buy or sell side and remain agnostic to Synergy's net position, particularly if Synergy's net position is expected to fluctuate over coming years.

Buy-sell spread

Since 2015, the ERA has specified an "appropriate" maximum buy-sell spread to be one standard deviation of energy market price variability around Synergy's price forecast. This was intended to allow Synergy a "reasonable" chance of profiting on a standard product and recovering its risk premium, while providing market participants with access to reasonably priced standard products. Applying this method to determine an appropriate spread, given the current price volatility, could indicate a range in spreads between 12 per cent and 35 per cent.

A spread of 35 per cent is substantially higher than the current buy sell spread of 15 per cent, and substantially higher than generally expected in competitive standardised contract markets. It would also be inconsistent with the working of a competitive, liquid market, and would undermine the aim of constraining Synergy's pricing to ensure that it is efficient.

Conversely, a lower spread of 12 per cent may limit Synergy's ability to absorb trading risks, potentially affecting its financial stability if market conditions remain or grow more volatile. Reducing the spread may not strike the balance in being wide enough, but no greater, to allow Synergy a margin to cover possible trading risks.

The buy-sell spread may have been a deterrent to Synergy when it was a net seller of energy.[3] Monitoring and mitigating the potential exercise of market power by net energy suppliers often focuses on generation capacity, market share, and pricing influence. However, using the same approach to assess an entity that is now becoming a net buyer may not accurately evaluate its current market behaviour, particularly in the context of market power.

An option could be separating the combined forecasting and hedging service provided by the standard product regime, where Synergy periodically publishes its expert expectations for future spot prices, without any risk premiums. This can be tracked and assessed against realised prices with a requirement for explanation of significant deviations. Further, there could be consideration to liberalise the standard products regime beyond Synergy towards a financially independent forwards market, but this may not be achievable given the small and illiquid Western Australian electricity market.

The ERA welcomes stakeholder feedback on the appropriate spread, including whether the current spread is serving the scheme's objective and if there are effective measures other than the buy-sell spread to impose pricing discipline on Synergy.

Terms and specifications

The ERA has also considered how the operation of other elements of the standard products regime mitigate risk of Synergy taking advantage of its market position. Standard products with different specifications – including volumes, contract terms, definition of peak periods and flexible commencement dates – may provide private entities more opportunity to participate in the WEM.

Synergy is required to offer quarterly and annual, peak and flat standard products for sale to third parties (a sell product) and purchase from third parties (a buy product). It must make 0.5 megawatt hours (MWh) available per trading interval. There is a 5 megawatt (MW) volume limit, per week, on buy and sell products. Synergy can offer more than 5 MW per week if it wants to, but this occurs rarely.

The ERA's analysis indicates that the specifications of the standard products are generally aligned with the most sought after and enquired about customised products. The standard products offered by Synergy appear to appropriately reflect the requirements of counterparties to Synergy. Where three-month (not necessarily quarterly) products are required at volumes not available through the standard products website, counterparties are able to access them as customised products.

However, the market is transitioning to renewable generation sources and battery storage, and electricity demand is increasing, leading to higher morning and afternoon peaks. The ERA is interested in stakeholder views on whether alternative types of products, such as "super peak" contracts, would assist market participants' risk mitigation in the WEM. The ERA is also interested in stakeholder views of whether the timing of a 'peak' standard product should align with the peak demand periods observed in the WEM.

Amendments to improve clarity and interpretation of the legislative instruments

The ERA has identified several amendments to improve the clarity and interpretation of the EGRC scheme. These include:

[3] Net supplier of energy refers to an entity that generates more electricity from its facilities than it sells through its retail contracts.

- Correcting a drafting error to implement the State Government's intention to prohibit Material Portfolios from purchasing sell-side standard products from Synergy, in line with the ERA's recommendation from our 2023 review.

- Updating references from the Independent Market Operator to the Australian Energy Market Operator and any other similar outdated references.

- Publishing consolidated legislative instruments that include all amendments, instead of referring to the original instruments and various separate amending instruments that can be confusing and difficult to find.

Call for submissions

Since 2023, the frequency of high and volatile energy market prices has increased in the WEM, driven by a much higher proportion of intermittent generation, waning coal supplies, high global gas prices, and commencement of the new market design. In this environment, Synergy had difficulty in consistently and reliably forecasting realised electricity prices for single-quarter standard products. However, since the rule changes that commenced on 20 November 2024, the WEM has begun to show signs of stabilisation. Greater long-term stability in the market and prices will likely help Synergy improve its forecasts of future market prices. However, the data available since 20 November 2024 is not sufficient to identify any long-term trends. There will be more data available for the ERA's next review, due in 2027.

The ERA is seeking submissions on its assessment of the EGRC scheme in this discussion paper by **13 October 2025**. A summary of questions and matters for feedback is overleaf.

After considering these submissions, the ERA will present a report to the Minister for Energy with its recommendations by 31 December 2025. The ERA will then publish its report after the Minister has tabled the report in both Houses of Parliament by mid-2026.

Summary of questions for stakeholders

Questions

1. What role do standard products have in your hedging portfolio or strategy?
2. Does the market need standard products? Please provide reasons for your response.
3. Has the importance of standard products for your business changed since commencement of the new WEM in October 2023 and if so, how?
4. Have recent price outcomes affected your inclination to access standard products?
5. How important are standard product prices in determining customer pricing in your business?
6. What would the impact, financial or otherwise, on your business have been, if any, in the absence of the standard products offered by Synergy?
7. What considerations impact your decision on whether to trade in standard products (e.g. price, terms, conditions)?
8. Do you consider the current buy-sell spread should change? Please provide reasons for your response.
9. How can the scheme address Synergy's potential to exercise market power on either the buy or sell side and remain agnostic to Synergy's net position?
10. Does the WEM need separate hedging and forecasting services? If so, how do you envision such mechanisms may operate? Please provide reasons for your response.
11. What considerations impact your decision on whether to trade in standard products (e.g. price, terms, conditions)?
12. What features do you consider warranted in a standard product regime?
13. Should the definition of 'peak period' be aligned with the actual peak periods in the WEM?
14. Should force majeure provisions be altered? If so, why and how?

1. Introduction

This chapter provides an overview of the EGRC regulatory scheme, the ERA's role in reviewing the scheme, the scope of this review and a summary of the questions for stakeholder feedback.

1.1 Overview of the scheme

The EGRC began trading as Synergy on 1 January 2014. The EGRC was created from the merger of the two State-owned electricity corporations, Verve Energy and Synergy, which were the largest generator and retailer respectively in the WEM.

The State Government recognised Synergy's dominance in the WEM through its generation capacity and contractual arrangements with third parties. Synergy is a major provider of wholesale electricity contracts to smaller generation and retail competitors in the WEM. A potential exercise of market power by Synergy in the wholesale contracts market could decrease the profit margin of third parties, particularly independent retailers, to unsustainable levels.

The State Government introduced the scheme to restrict Synergy's potential to exercise market power. However, the scheme did not have a defined objective. In 2014, the ERA considered the Explanatory Memorandum and Second Reading Speech for the *Electricity Corporations Amendment Bill 2013* and identified the scheme's primary objective as being to:

> Mitigate the increased potential for market power that arises due to the merger, to ensure a level playing field for competitors and new entrants in order to facilitate competition.

This was supported by the Public Utilities Office (now Energy Policy WA or EPWA) in 2019.[4]

The scheme has been amended over the years and now consists of the:

- *Electricity Corporations (Electricity Generation and Retail Corporation) Regulations 2013* (the EGRC regulations).
- *Electricity (Standard Products) Wholesale Arrangements 2014* (the wholesale arrangements).

These instruments require the EGRC to segregate its business into several business units – a Retail Business Unit (RBU), a Wholesale Business Unit (WBU), a Generation Business Unit (GBU) and a unit comprising shared services operations.[5]

The scheme comprises three main elements, with requirements that the EGRC must follow, outlined in Table 1.

[4] Public Utilities Office, 2019, *Electricity Generation and Retail Corporation regulatory scheme – Response to 2016 report to the Minister for Energy on the effectiveness of the Scheme*, p. vi, (online).

[5] Synergy's shared services include corporate planning and strategy, organisational development, accounting, financial and legal matters, human resources, information technology support, regulatory and compliance matters, communications, billing, record keeping, and any other services undertaken in connection with two or more business units not specific to retail, generation or wholesale business operations.

Table 1: Overview of EGRC scheme elements and requirements

Elements	Requirements
Ringfencing of retail restricted information	Synergy must ensure that information known by the WBU relating to a retail competitor that might reasonably be expected to materially adversely affect the commercial interests of the retail competitor (retail restricted information), is not disclosed to RBU staff. WBU staff who have access to retail restricted information must occupy work areas separate to those occupied by RBU staff.
Non-discrimination obligation	Synergy cannot discriminate between the RBU and its competitors when offering a wholesale supply of electricity.
Standard products	Synergy must: • Offer "standard products": standardised financial instruments for purchase ("buy-side products") or sale ("sell-side products") of small parcels of wholesale energy at advertised prices. • Price standard products within the set buy-sell margin. • **Not** trade in standard products with an approved counterparty if: – The transaction is for the supply of one or more standard products to the EGRC; and – Any of the approved counterparty's facilities belong to a Material Portfolio.

1.2 The ERA's role in reviewing the scheme

The EGRC regulations require the ERA to:

- Review the effectiveness of the scheme every two years.[6]
- Audit Synergy's compliance with Part 3 Division 1 (wholesaling obligations) and wholesale arrangements each financial year.[7] This function was previously undertaken by the Auditor General and was transferred to the ERA in August 2024 when the EGRC regulations were amended by the Minister for Energy. The ERA's first audit is currently being conducted in parallel to this effectiveness review.

1.2.1 Past ERA reviews

The ERA last reviewed the scheme in 2023.[8] The 2023 review reaffirmed the continued need for the scheme but recommended several improvements, outlined in Table 2.

6 *Electricity Corporations (Electricity Generation and Retail Corporation) Regulations 2013* (WA), r. 48, (online).

7 Ibid, r. 29, (online).

8 Economic Regulation Authority, 6 December 2023, *Electricity Generation and Retail Corporation regulatory scheme: 2023 effectiveness review – Report to the Minister*, (online).

Table 2: Overview of the ERA's 2023 review recommendations for changes to the EGRC scheme

Pre-2024 scheme element	Recommended change
Disclosure mechanism • Non-discrimination • Transfer pricing	• Removal of the foundation transfer pricing mechanism that applied to Synergy's non-contestable customers and its customers at the time of the merger. • Removal of the *Segregation and Transfer Pricing Guidelines 2020.* The arrangements provided for the additional transfer pricing mechanisms, which applied to new load (after the merger) customers. • Removal of the requirement that Synergy not offer wholesale supplies of electricity to the RBU on terms and conditions more favourable than it would offer competitors, previously contained in regulation 22.
Ringfencing	• Removal of the requirement to ringfence generation restricted information, with Synergy no longer required to restrict information sharing between the wholesale and generation business units.
Standard products	• Addition of a new clause 2.2(f) to restrict the requirement for Synergy to sell standard products to counterparties determined by the ERA as being Material Portfolio entities under section 2.16C of the Electricity System and Market (ESM) Rules.[9]

Source: ERA

The Minister for Energy accepted the ERA's recommendations and implemented them in August 2024.[10] However, the change to the wholesale arrangements was not drafted in line with the ERA's recommendation. Instead of prohibiting Synergy from offering sell-side standard products to entities that have access to sufficient generation assets, the amended regulations require that Synergy cannot enter into a buy-side standard product transaction with a Material Portfolio entity. This is discussed further in section 6.1.

We did not consider Synergy's standard products and wholesale arrangements in detail in our 2023 review as we had already completed a detailed review of the standard products and wholesale arrangements in 2021.[11] In our 2023 discussion paper, we noted that we would consider the buy-sell spread in this 2025 review.[12]

In the 2021 review, we recommended reducing the spread between buy and sell prices of standard products to 15 per cent from July 2022 and to 10 per cent from July 2023.[13] The Minister for Energy reduced the buy-sell spread from 20 per cent to 15 per cent on 1 July 2022. The spread has not changed since then.

9 The Wholesale Electricity Market Rules were renamed to the Electricity System and Market (ESM) Rules in July 2025.

10 *Electricity (Standard Products) Wholesale Arrangements Amendment Instrument 2024 (WA)*, 9 August 2024 (online).

11 Economic Regulation Authority, 16 December 2021, *Electricity Generation and Retail Corporation regulatory scheme: 2020 effectiveness review. Report to the Minister for Energy*, (online).

12 Economic Regulation Authority, 15 September 2023, *Electricity Generation and Retail Corporation regulatory scheme: 2023 effectiveness review, Discussion paper*, p. 17 (online).

13 Economic Regulation Authority, 16 December 2021, *Electricity Generation and Retail Corporation regulatory scheme: 2020 effectiveness review. Report to the Minister for Energy*, p. 27 (online).

1.2.2 2025 review approach and scope

This review focuses on Synergy's standard products and wholesale arrangements from 1 January 2021 to 31 December 2024. Specifically, the ERA has reviewed the:

1. Suitability of Synergy's pricing of standard products.
2. Suitability and effectiveness of the buy-sell spread.
3. Suitability and effectiveness of standard product specifications (including its terms and conditions such as force majeure provisions).

In our review, we must consider the prevailing circumstances that exist in the operation of the SWIS.[14] Since the ERA's 2021 review, the electricity sector has undergone significant transformation, as it transitions from a reliance on fossil-fuelled generation to renewables and grid-scale batteries. A new market design for the WEM also commenced on 1 October 2023.

These circumstances and their implications for the operation of the scheme, and our assessment of its effectiveness, are explored in the sections below. We have established how Synergy's approach to pricing of standard products may have changed since 2021, and we have reviewed the standard products buy-sell spread and their terms, conditions and specifications, considering feedback from market participants and the changed market dynamics.

1.2.2.1 Matters outside the scope

We have not reviewed the recent changes to the scheme's non-discrimination and ringfencing obligations made in August 2024, as it is too early to accurately assess the effectiveness of those changes.

Further, this review does not cover the ERA's audit of Synergy's compliance with the wholesale arrangements and wholesaling obligations under the EGRC regulations. The ERA's audit is a separate function to its scheme effectiveness review and is being conducted concurrently to this review.

1.3 Overview of the WEM and standard products

Since 1 October 2023, the WEM comprises a short-term energy market (STEM), real-time markets for energy and essential system services, and a reserve capacity mechanism.[15] Market participants can also enter into contractual agreements with each other to buy and sell energy and capacity credits through off-market mechanisms (bilateral contracts).

In the spot market, generators trade electricity with retailers in real time for each five-minute interval.[16] The prices in the spot market can fluctuate.

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[14] *Electricity Corporations (Electricity Generation and Retail Corporation) Regulations 2013 (WA),* r. 48(2)(a), (online).

[15] In the WEM, the spot market was known as the balancing market until 1 October 2023. Since commencement of the new WEM on 1 October 2023, the spot market is known as the real-time market.

[16] On 1 October 2023, the balancing market was renamed to the real-time market for energy. In this paper, a reference to the spot market means either the balancing or real-time market for energy.

To have more certainty over costs and revenues, retailers and generators can use bilateral contracts and short-term energy contracts.[17, 18] Short-term energy contracts allow market participants to lock in a price for the electricity they supply or purchase the day before the spot market clears. Bilateral wholesale contracts are longer-term and allow market participants to fix the price days and even years in advance. Standard products are bilateral contracts that Synergy must offer. The majority of energy in the WEM is for self-consumption or bilaterally traded.

The wholesale arrangements specify the products Synergy is required to offer and the minimum quantities that must be made available. Synergy is required to offer both flat and peak standard products on a quarterly and annual basis for sale (sell-side) and purchase (buy-side) of electricity. Across all product types and durations, Synergy is required to offer a minimum 150 MW for sale and 100 MW for purchase.

Standard products must be offered in units of 1 MW (0.5 MWh per trading interval) and Synergy must offer to buy and sell 5 MW per week. These terms have not changed since the scheme's introduction and reflect the 2014 circumstances when Synergy had excess capacity and could offer the requisite number of sell-side standard products. In 2021, we considered specifications, terms and conditions of standard products but decided not to make any recommendations on these as we were unsure whether the assumptions underlying these recommendations would apply in the new WEM.[19]

Market participants notify the Australian Energy Market Operator (AEMO) of quantities they have agreed to trade bilaterally at pre-agreed prices. When settling trades in the spot market, AEMO deducts the quantity of electricity that is traded bilaterally or through the STEM from the amount to be settled at the cleared spot price; bilaterally contracted volumes are settled directly between parties. As such, though a standard product transaction does not bind parties to physically supply electricity, it can change the market exposure of Synergy and its counterparties.

By trading a standard product, Synergy foregoes the opportunity to receive (for sell-side standard products) or pay (for buy-side standard products) the spot price for the volume of energy covered by the standard product agreement.

1.3.1 Purpose of standard products

Standard products are the primary market power mitigation tool in the scheme. The overarching goals of the standard products, described by the Merger Implementation Group (MIG) on 7 March 2014, were as follows:

1) The primary aim of the standard products regime is to maintain private sector activity by imposing discipline on Synergy's wholesale pricing.

[17] Bilateral contracts are agreements formed between any two parties for the sale of electricity by one party to the other. Standard products are a form of bilateral contracts. AEMO does not operate any secondary market for bilateral contracts. See: Australian Energy Market Operator, September 2023, *Wholesale Electricity Market Design Summary*, p. 100, (online).

[18] Short-term energy contracts are traded through the short-term energy market (STEM). The STEM is a financially binding, energy-only, day-ahead market which provides a centrally controlled opportunity for market participants to trade around their bilateral contract positions, supplementing and complementing the off-market bilateral contracts regime. See: Australian Energy Market Operator, September 2023, *Wholesale Electricity Market Design Summary*, p. 100, (online).

[19] Economic Regulation Authority, 16 December 2021, *Electricity Generation and Retail Corporation regulatory scheme: 2020 effectiveness review, Report to the Minister for Energy*, p, 90, (online).

2) By acting as a price discovery mechanism, it is expected that the regime will provide transparency and predictability for market participants.

3) It is intended that the regime will mitigate industry concerns by:

   - Providing a competitive benchmark price for the wholesale supply of electricity on a non-discriminatory basis.
   - Providing simple products that reduce barriers to entry for retailers and allow market participants to rebalance their portfolios.[20]

Standard products support the scheme's objective by providing market participants with a forward energy pricing curve representing Synergy's current expectation of future energy market prices, and assuring access to hedge products, which is important for market participants that lack access to generation capacity.

The standard products regime was not intended to operate as a market in itself but to complement the wholesale contracts market.[21] While market participants can trade in standard products, speculators cannot.

Some other jurisdictions (such as Ireland and Tasmania) also require a major generator in the grid to supply financial risk management contracts. However, these instruments are very different to standard products and do not have the same dual purpose of providing hedging opportunities as well as visibility of the expected forward price curve.

The ERA considers that an effective standard products regime must fulfil the following criteria without overburdening Synergy relative to other large generator-retailers in the WEM. It would:

- Include product specifications, such as terms and temporal coverage (for example, coverage for peak and entire-day periods), that generally suit most market participants' risk management requirements.
- Ensure that products are accessible to those entities that need them to hedge their risk exposure against variable spot prices.
- Ensure product prices are relatively cost reflective. For the spread to act as a price discovery mechanism, it must reflect the forward price that would prevail if the market was competitive.

As part of the August 2024 changes, the Minister for Energy amended the scheme to make standard products more accessible for smaller market participants by restricting Material Portfolios from transacting in these products. However, the changes implemented did not achieve the ERA's intended outcome. This is further discussed in section 6.1 of this paper.

1.4 Information relied upon for this review

To undertake this review, the ERA has considered:

[20] Economic Regulation Authority,15 September 2023, Electricity Generation and Retail Corporation regulatory scheme: 2023 effectiveness review, *Discussion Paper*, p. 17, (online).

[21] Public Utilities Office, 1 June 2019, *Electricity Generation and Retail Corporation Regulatory Scheme – Response to 2016 Report to the Minister for Energy on the effectiveness of the Scheme, Directions Report*, p. 8 (online).

- Confidential information provided by Synergy and AEMO. This information informed the ERA's analysis of Synergy's standard product trades, net energy position as well as market concentration and competition analysis.

- Voluntary informal feedback provided by market participants. In March 2025, the ERA Secretariat undertook an informal survey of market participants to better understand how they use standard products. Given the small size of the WEM and the confidential feedback provided, the ERA has presented the feedback in this paper without attribution to individual market participants.

- Publicly available information on the WEM.

The ERA is seeking market participants' feedback on the findings of this review, their potential implications, and possible ways forward. The ERA's findings and questions are provided in each chapter.

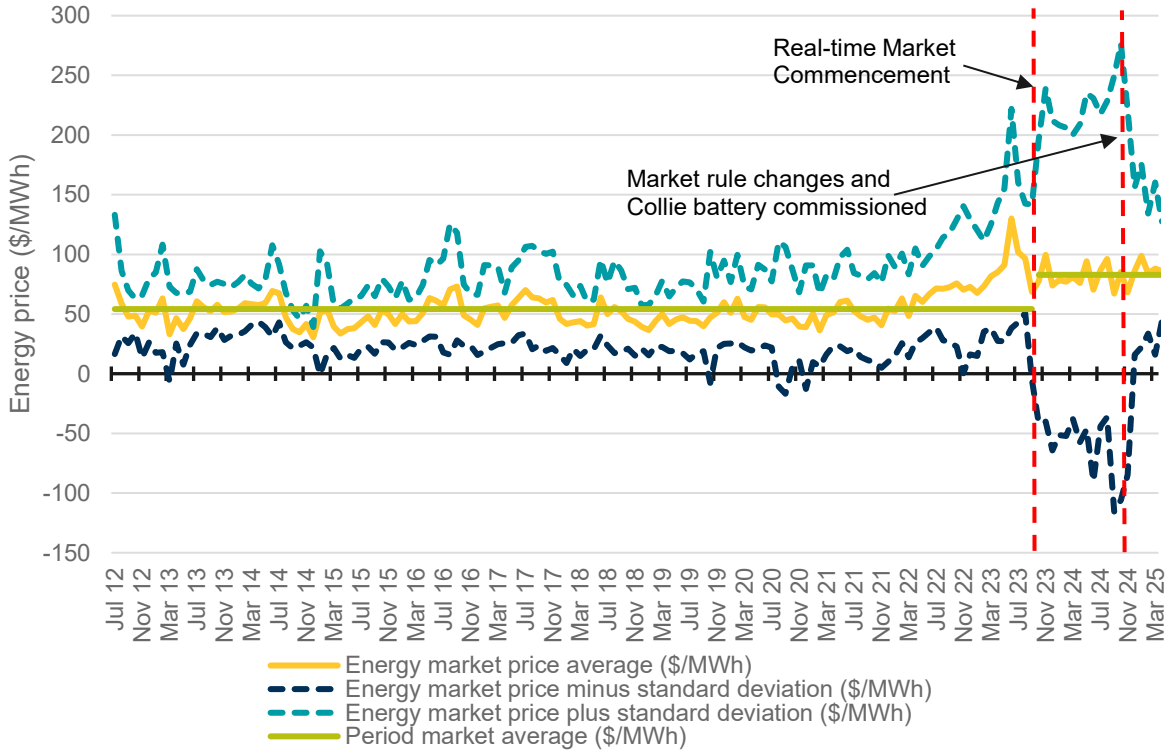
2. Prevailing circumstances

As part of its review of the effectiveness of the EGRC scheme, the ERA must consider the prevailing circumstances of the SWIS. This chapter summarises the effects of the significant transformation of the electricity sector from a reliance on fossil-fuelled generation to renewable generation and battery storage facilities, including its influence on Synergy's changing position from a dominant supplier to a possible net electricity buyer.

2.1 Changes in the WEM

The average WEM energy price has experienced greater volatility from 2023, than during the period from 2012 to 2023. Monthly average energy market prices in the WEM for the period July 2012 to end of April 2025 are presented in Figure 1.

Figure 1: Monthly average energy market prices July 2012 to April 2025



Source: ERA's analysis of AEMO's data. Data extracted 11 June 2025.

The Balancing Market, implemented in 2012, was characterised by long-term stability in prices. Balancing market electricity prices were largely independent of ancillary service markets and network constraints and were derived from short run marginal cost pricing. Generation was mostly dispatchable, able to be controlled by adjusting generator output and turning generators on and off in real-time.

However, in 2022/23, prior to new WEM commencement, there was a much higher proportion of intermittent generation, reliant on the sun and the wind (including residential solar and grid-scale renewables), in the generation mix. This was making it increasingly difficult and costly to manage short-term variation between supply and demand in the market. When coupled with waning coal supplies and high global gas prices, the frequency of high and variable energy market prices increased in the WEM.

A new WEM design was implemented on 1 October 2023, with a real-time market (RTM) comprising an energy market and five frequency co-optimised essential system service (FCESS) markets.[22] The new WEM design is:

- Co-optimised, with the costs for the different market services resolved together to produce an optimal low-cost solution for meeting demand. Tightness in supply and high prices in FCESS markets can influence RTM outcomes.

- Security constrained, such that the identified solution must balance system security and reliability with producing power at the lowest possible cost.

In comparison to the balancing market, peak prices and volatility in the RTM have been higher than previously recorded in the WEM. When the RTM commenced, the lower gas fuel price cap was removed, and the higher liquid fuel price cap was retained. This change from two price maximum price caps to one allowed for a greater range in prices (up to the highest price cap) than could occur previously.

High market prices also resulted from market participants failing to move capacity from being "available" when the schedule indicated it would be dispatched to "in-service", creating a real-time shortfall in supply.[23]

On 20 November 2024, new ESM Rules were implemented requiring that market participants offer supply quantities at no more than their efficient variable cost.[24] The rules also required market participants with capacity credits to move their energy capacity to in-service if a shortfall is projected inside their notice period in energy, contingency raise, or regulation raise.[25]

At around the same time as the amendments to the market rules, the Neoen Collie big battery started operating and was accredited to provide FCESS. This battery has contributed to reduced volatility, particularly in FCESS markets, providing increased supply to markets prone to shortfalls (such as contingency raise) and improving reliability and stability.

While average RTM prices remain high, together the changes to the market rules and the introduction of big batteries appear to be lowering the volatility in RTM prices. Since 30 December 2024, further changes have affected the SWIS, such as the replacement of the WEM objectives with the State Electricity Objective. However, these changes are outside of the review period.

In summary, while Synergy was not able to consistently and reliably forecast realised electricity prices for single-quarter standard products between 2022 to 2024, greater long-term stability in the market and prices will likely help Synergy improve its forecasts of future market prices. In the period between 2017 and 2021, Synergy was able to predict spot market prices with reasonable accuracy.

[22] The FCESS markets are related to the previously called Ancillary Services markets and services from in the pre-1 October 2023 WEM.

[23] The WEM Dispatch Engine (WEMDE) will not schedule capacity marked as 'available', it will only schedule capacity marked as 'in-service'.

[24] These new market rules were developed as part of the 2024 review of costs for FCESS.

[25] *Electricity System and Market Rules* (WA), 4 June 2025, Rule 7.4.2C, (online).

2.2 Competition analysis

The ERA used the Herfindahl-Hirschman Index (HHI) to assess market concentration. The HHI is the sum of the squares of market share. The higher the HHI values, the higher the concentration in the market. A market with a HHI of less than 1000 is competitive. A market with a HHI of 1,000 to 1,800 is moderately concentrated, and a HHI of 1,800 or more indicates a highly concentrated market.

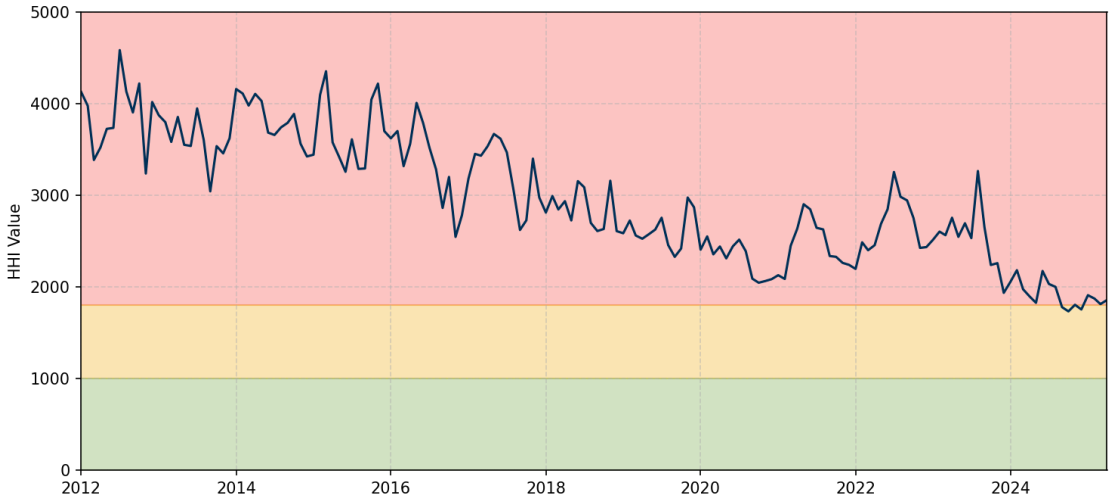
Figures 2 and 3 show concentration in the wholesale and contestable retail markets.

The retail market is divided into two separate markets: a retail monopoly “franchise” market and a “contestable” market open to retail competition. The franchise market consists of residential consumers and small businesses, with an annual consumption of 50MWh or less per year. The contestable market serves commercial and industrial consumers with an annual consumption exceeding 50MWh per year.

The WEM remains highly concentrated; however, the level of concentration has been trending downwards (Figure 2 and Figure 3). Concentration in the contestable retail market has also been falling since 2012. The contestable retail market is now moderately concentrated.

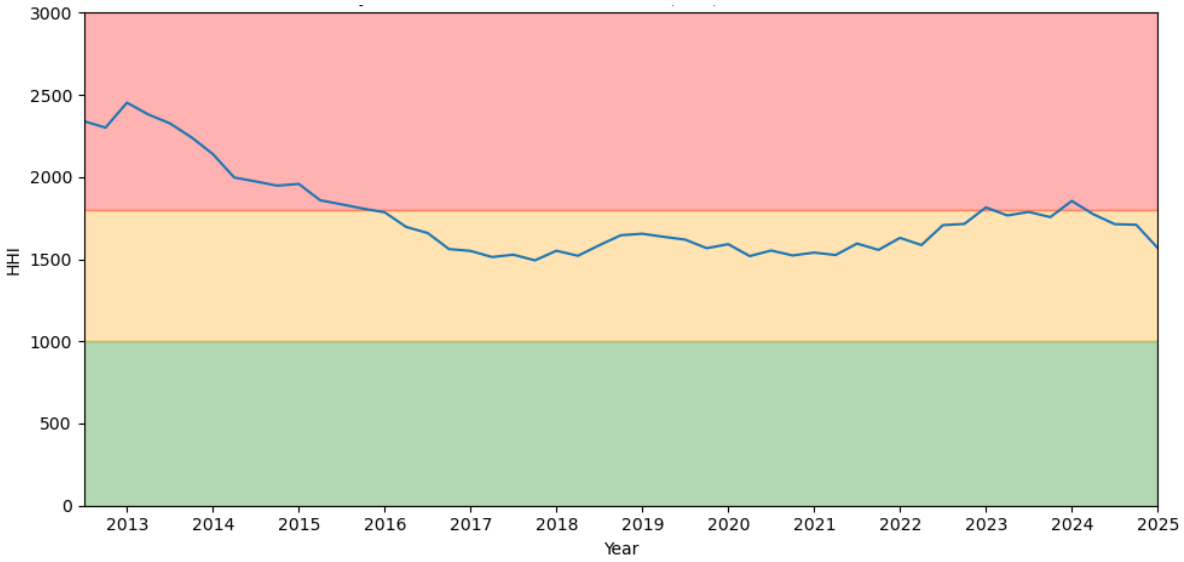
This reaffirms that as the largest generator in the WEM, Synergy continues to have the ability to potentially exercise market power, which the EGRC scheme is designed to mitigate.

Figure 2: Herfindahl-Hirschman Index – Wholesale market



Source: ERA’s analysis of AEMO data.

Figure 3: Herfindahl-Hirschman Index – Contestable retail market



Source: ERA's analysis of AEMO data.

2.3 Synergy's changing circumstances

When the scheme commenced in 2014, Synergy was long on energy (*i.e.* it had more supply than it needed to meet the demand from its customers). In recent years, several changes have occurred with significant implications for Synergy's generation fleet and its overall balance between being a supplier and a buyer in the WEM (Table 3).

Table 3: Changes affecting Synergy in recent years

Date	Item
14 June 2022	State Government announced retirement of Synergy's coal-fired generators.[26]
June 2022	State Government does not 'expect' for Synergy's bilateral contract with Bluewaters Power Station to be renewed.[27] Contract expires in 2025.
October 2022	Muja C unit 5 decommissioned.
September 2023	First Battery Energy Storage System (BESS) in the SWIS, Synergy's Kwinana BESS1 or KBESS1 (100MW), commenced operation.
March 2025	Synergy's Kwinana BESS2 or KBESS2 (225MW), commenced operation.

More recently, on 1 April 2025, Synergy's Muja C, unit 6, coal-fired generator was retired. The last of Synergy's coal fired power stations are due for retirement, with the Collie plant due to be retired in late 2027, and the remaining Muja units 7 and 8 scheduled to be decommissioned in late 2029.

[26] Western Australian State Government Media Statements, 14 June 2022, *State-owned coal power stations to be retired by 2030,* (online).

[27] The West Australian, 21 June 2022, *Bluewaters Power Station: Synergy won't renew contract with Collie coal plant* (online).

Synergy will also add two grid-scale battery storage facilities to its fleet in Collie (combined Synergy Collie BESS or CBESS will be 500 MW[28]). In 2026/27, CBESS will receive 351 MW capacity credits to the Synergy fleet.

2.3.1 Synergy's net energy position

The ERA is examining the implications of a change in Synergy's net energy position from having excess generation to possibly needing to buy electricity from the WEM to supply its load obligations. The ERA's assessment is based on the retirement of the capacity credits assigned to these coal facilities which decreases Synergy's energy generation capability below Synergy's forecast load obligations, changing Synergy's net energy position.

For example, Synergy has confirmed that it has committed to 410 MW of new wind generation. However, due to the way that the reserve capacity mechanism assesses renewable facilities for capacity, this is equivalent to around only 143.5 MW of generation. The retirement of Muja 8, which is around 212 MW of capacity, would require around 605 MW of wind energy to replace Muja 8's capacity.[29]

Batteries, although adding capacity, are not like renewable or fossil-fuelled generators, as they can only store and shift electricity from one period to another. Batteries cannot 'create' electricity like other generators do, by either relying on wind/solar as a generation source or using fuel like coal or gas. A battery's 'fuel' is the electricity it takes from the grid or from a connected generation source (for instance, a solar farm attached to a battery).

Given that insufficient generation capacity is forecast within Synergy's portfolio over the next few years to offset its retiring generation assets, Synergy's expected energy position could move from being a net supplier of electricity to being a net buyer of electricity. This means that Synergy may need to purchase energy produced by other generators to meet its current and potential future demand for electricity, if it is assumed that its wholesale and retail contestable market sales do not reduce over time.

If Synergy moves to buy more electricity from the market, it will be incentivised to lower wholesale electricity prices to minimise its costs. If it were to exercise market power to raise wholesale electricity prices, it would cost Synergy more to buy electricity, which is not in its interests. This can change how the EGRC scheme is to operate if this situation eventuates.

[28] Synergy, 'Collie Battery Energy Storage System', (online) [accessed on 9 September 2025].

[29] Based on the relevant level method, the average capacity factor of a wind generating facility is around 0.35 MW to 1 MW of firm capacity.

3. Synergy's pricing of standard products

Synergy's expectation of the spot market price underpins its pricing of standard products because it determines the opportunity cost of selling or buying each unit of energy covered by the standard product contract.

Synergy determines its standard product prices up to two years in advance when future spot prices are uncertain. In bilateral contracts (such as standard products), a margin (the risk premium) is added to the forecasted spot prices to compensate for uncertainty and price volatility.

Buy prices must be set lower than sell prices. The difference between the sell price and the buy price is constrained by the prescribed maximum buy-sell spread. The buy-sell spread is discussed separately in chapter 4

In this chapter, the ERA considers how Synergy converts its forecasted spot price into prices of the standard products and to what extent its standard product pricing compares to a competitive market.

3.1 Synergy's pricing methodology

The standard product sell price for a particular contract horizon is set equal to Synergy's price forecast plus margins for price volatility and market uncertainty.[30] The price forecast is a forward energy price curve which represents Synergy's expectation of future energy market prices. Two types of margins are included into standard product pricing. The size of the margins depends on several factors such as demand risk, plant risk, opportunity cost, fuel risk and regulatory risk. Synergy has advised it predominantly uses the same forward pricing curve for both customised products and standard products.

Synergy's practice has been to set buy prices by subtracting the maximum buy-sell spread from the corresponding sell prices. For example:

- In October 2021, price of a flat quarterly product for quarter 1 (Q1) 2022 was $39.79 to buy and $49.73 to sell – a difference of 20 per cent (at the time the spread was 20 per cent).
- In October 2022, price of a flat quarterly product for Q1 2023 was $65.75 to buy and $77.35 to sell – a difference of 15 per cent (the spread was reduced to 15 per cent on 1 July 2022).
- In October 2023, price of a flat quarterly product for Q1 2024 was $82.96 to buy and $97.59 to sell – a difference of 15 per cent.
- In September 2024, price for a flat quarterly product for Q1 2025 was $103.21 to buy and $121.42 to sell – a difference of 15 per cent.

To balance the risk, it would be reasonable to assume that Synergy sets buy and sell prices symmetrically around the expected average spot price up to the maximum buy-sell spread.

[30] Electricity price volatility is more adversely impactful on the business risk of electricity retailers than generators. See section 4.2.1.

Placing the buy and sell prices symmetrically around Synergy's expectations of future market prices would require a margin of +/- 7.5 per cent.[31]

The ERA calculated Synergy's average margins before and after 1 July 2022 when the maximum buy-sell spread of 15 per cent came into effect.[32] The ERA's analysis shows that standard product prices have not been set symmetrically around Synergy's expectations of future market prices. Specifically, since July 2022 the expected average market price tended to be closer to Synergy's buy price.

Different margins on buy and sell side transactions may reflect Synergy's view on risk depending on whether it is selling or buying electricity. Pricing bias towards buying of electricity suggests Synergy views its risk from selling electricity as requiring higher margins. This may be because its energy surplus is diminishing.

If Synergy expects capacity shortages and a net deficit position, then :

- Synergy has little incentive to exercise market power to drive up wholesale prices as such actions will disadvantage Synergy.
- Providing sell-side standard products may become riskier for Synergy as its reliance on the spot price increases.

In its 2021 review, the ERA observed that:

> A standard product provider will set its margins to accommodate its differing likelihood of future average spot prices being higher or lower than its expected average spot price. For example, if the provider perceives future average spot prices are more likely to be higher than its expected average spot price (than being lower), it might include a larger risk premium in its sell price.[33]

From Q1 2022 to Q3 2023, Synergy's standard product prices were below realised market prices. Currently, standard product sell prices appear to be well above energy market prices. Comparison between Synergy's standard product pricing and market prices is provided in section 3.2 of this paper.

Pricing bias towards buy-side standard products however did not result in the higher number of buy transactions. Since Q4 2023, none of seven executed transactions were for buy-side standard products. This may be due to market conditions (such as tightening of electricity supply) or uncompetitive pricing as explained in section 3.2 below.

3.2 Synergy's pricing compared to spot market

As the market for standard products is illiquid, the ERA sought to understand how Synergy's pricing compares to a competitive market. To do so, the ERA compared Synergy's pricing of standard products to those observed in the spot market. The analysis shows that for the period

[31] Based on the buy-sell spread of 15 per cent that is in effect since July 2022, a zero per cent margin would mean the *sell* price is equal to the forecast price, whereas a 15 per cent margin would mean the *buy* price is equal to the forecast price.

[32] The ERA calculated the average for two periods: October 2021 to June 2022 and July 2022 to September 2024.

[33] Economic Regulation Authority, 31 August 2021, *Electricity Generation and Retail Corporation regulatory scheme: 2020 effectiveness review – Discussion paper*, p. 18 (online).

2022 to 2024, Synergy's single-quarter standard product quoted prices did not consistently and reliably forecast realised electricity prices.

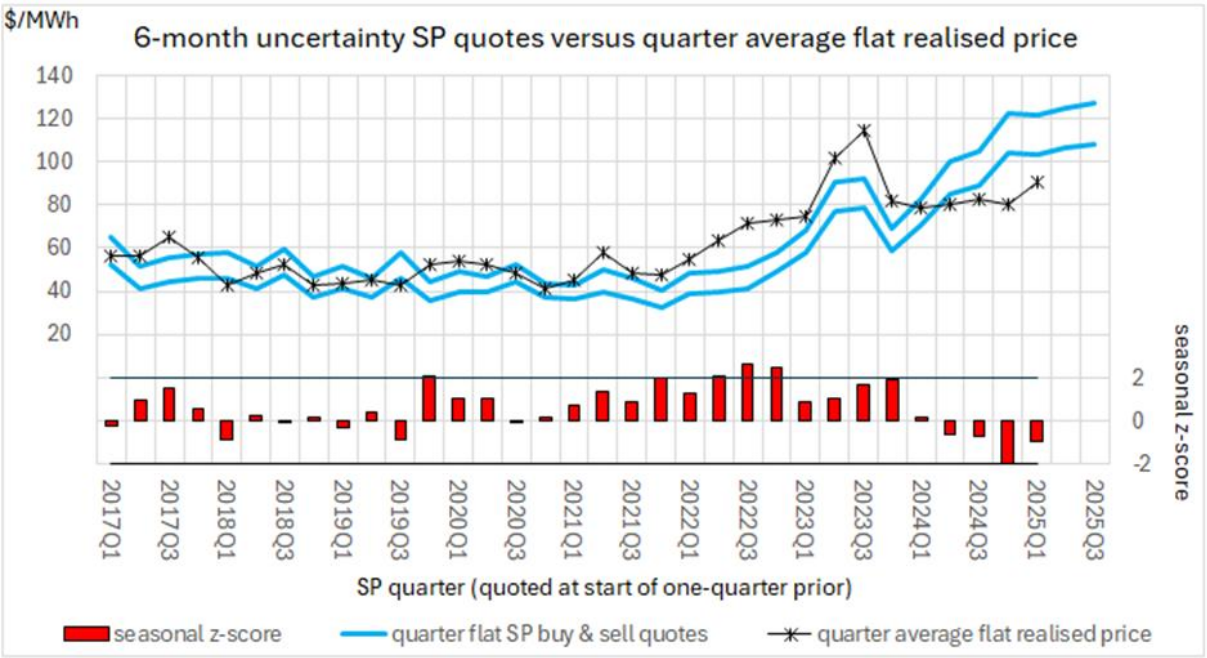
For a sell-side standard product, Synergy sustains a nominal loss if the realised spot price is above standard product price. This is because Synergy sells the contracted volume of electricity at a price that is below the market price. For a buy-side transaction, the situation is reversed. Synergy makes a profit if it buys electricity under a standard contract at a price below the realised market price.

From 2017 to 2021, standard product prices proved to be reasonable expectations for realised prices as electricity prices were relatively stable. In 2021, we commented that "between 2014 and 2020, just under 90 per cent of standard products traded and matured yielded a nominal profit for Synergy."[34]

From 2022 through to Q3 2023, electricity prices rose strongly with Synergy's standard product quotes (produced prior to the realised prices) being persistently below realised prices resulting in nominal losses from approximately 90 per cent of trades. The new WEM design commenced from 1 October 2023 (Q4 2023).

A reversal of electricity prices in Q4 2023 (compared to the 2023 peaks) led to an improvement in the alignment between standard product quoted prices and realised prices. However, the one-quarter prior (that is, with six-month uncertainty) standard product quotes notably over-shot realised prices for Q3 2024 onwards. This is shown in Figure 4 and Figure 5 below.

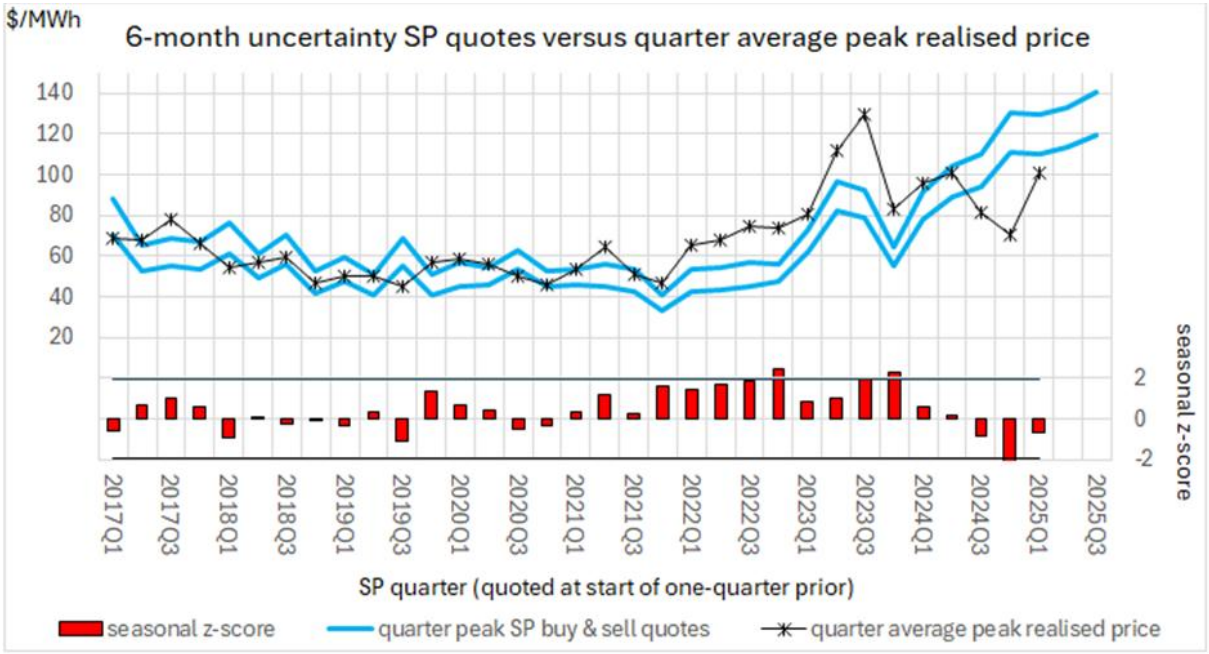
Figure 4: Standard product quotes versus average flat realised price in the spot market



Source: ERA analysis of Synergy data

[34] Economic Regulation Authority, 16 December 2021, *Electricity Generation and Retail Corporation regulatory scheme: 2020 effectiveness review, Report to the Minister for Energy*, p. 12 (online).

Figure 5: Standard product quotes versus average peak realised price in the spot market



Source: ERA analysis of Synergy data

There were 49 single-quarter peak and flat electricity price sell contracts traded for contract periods Q1 2020 to Q1 2025. Only four of these contracts were for a sell price that was higher than the subsequent realised quarterly average price (calculated from the reference trading price). That is:

- Forty-five of 49 (92 per cent) of these single quarter sell contracts entailed a loss for Synergy.
- For the 49 contracts, the average loss was $14.71/MWh.

In addition to the single quarter sell trades there were two Q3 2020 and one Q2 2020 flat electricity price buy trades transacted in December 2019. These three trades produced an average gain for Synergy of $2.93/MWh.

There were 46 calendar and financial year standard product peak and flat electricity price sell contracts traded for contract periods 2020 to 2024. Only seven of these contracts were for a sell price that was higher than the subsequent realised yearly average price. That is:

- Thirty-nine of 46 (85 per cent) of these one-year contracts entailed a loss on the trade for Synergy.
- For the 46 contracts, the average loss was $13.90/MWh.

Across all 98 standard product contract transactions for contract periods available since 2020, the average loss was $13.80/MWh. This represents a relative loss of 17 per cent with respect to an assumed $80/MWh electricity price.

Market participant responses to the voluntary survey indicate that although standard products remain important in the new WEM, the increase in the standard product prices since Q4 2023 undermines purpose of standard products as a potential hedge and as a future price indicator.

3.3 The ERA's findings

In the environment of high and volatile prices of the new WEM, Synergy has not been able to consistently and accurately forecast the forward energy market prices upon which standard product prices are set. Significant forecast error can result in market participants' entering into contracts that may be inefficient. It could also lead to under-compensation and over-compensation of risk for transacting parties, including Synergy.

For example, where Synergy sets its sell price in advance at a level that is below the eventual realised market price, it is exposed and stands to make a loss in trading if a transaction occurs, while its counterparty will profit. If it sets its sell price in advance at a price higher than the realised market price and a transaction occurs, it will profit, and the counterparty will make a loss.

There was a period from Q1 2022 through to Q3 2023 where Synergy's standard product prices were below realised market prices. Multiple quarterly and calendar year transactions between Synergy and third parties were entered into in this period, leading to subsidisation of counterparties and losses for Synergy.

Standard product sell prices currently appear well above energy market prices. This could be that Synergy believes prices will go up or it could be due to the margin included for risk. If Synergy inadvertently sets its prices too high, contracting (risk mitigation) may become inaccessible for third parties. If transactions do occur, Synergy may accrue rents. Counterparties will be exposed to higher prices, which will flow through to consumers.

Questions

1. What role do standard products have in your hedging portfolio or strategy?
2. Does the market need standard products? Please provide reasons for your response.
3. Has the importance of standard products for your business changed since commencement of the new WEM in October 2023 and if so, how?
4. Have recent price outcomes affected your inclination to access standard products?
5. How important are standard product prices in determining customer pricing in your business?
6. What would the impact, financial or otherwise, on your business have been, if any, in the absence of the standard products offered by Synergy?
7. What considerations impact your decision on whether to trade in standard products (e.g. price, terms, conditions)?

4. Buy-sell spread

Synergy's standard product sell prices must always be higher than Synergy's buy prices up to the current maximum of 15 per cent, referred to as the maximum buy-sell spread.[35] The maximum buy-sell spread is intended to impose discipline on standard product pricing by constraining Synergy's ability to charge unreasonably high sell prices. The buy-sell spread, and the non-discrimination requirement, are the only constraints on Synergy's pricing under the EGRC scheme and are therefore important mitigants of any potential exercise of market power.

Through the spread, the buy price anchors the sell price – if Synergy raises its standard product sell price, it must also raise its buy price to ensure that its prices do not exceed the maximum spread. For example, if the spread is 15 per cent and Synergy sets its standard product sell price at $200/MWh, then it must set its standard product buy price no lower than $170/MWh.[36] Between 1 January 2021 and 31 December 2024, the spread varied between 20 per cent and 15 per cent – the buy-sell spread was 20 per cent until 1 July 2022 when it was reduced to 15 per cent.

If the spread is too narrow, Synergy may be forced to trade unprofitably by either selling or buying energy at uncompetitive prices. If the spread is too wide, standard product prices may not be competitive, defeating the purpose of the standard products regime to act as a simple alternative to customised products.

4.1 Specifications of the buy-sell spread

The buy-sell spread for standard products forward price quotes has been historically determined by allowing an upper limit for the bid-ask spread equal to one standard deviation of electricity price variability around Synergy's price forecast (see Appendix 1 and Appendix 2 for details). The principle was set in the ERA's 2015 review of the scheme to allow Synergy a reasonable 69 per cent chance that Synergy would profit on a standard product transaction.

The current maximum buy-sell spread was set to 15 per cent in July 2022 (regardless of standard product forward horizon or seasonality). The value was set based on data from 2014 to 2020 when the spot market price remained relatively stable, and Synergy was improving accuracy of its forward forecasts. Using the same method to determine the spread, and with consideration of increased electricity price volatility in recent years plus price forecast uncertainty that varies with the forward season and increases with forecast horizon, results in a maximum spread between 12 per cent to 35 per cent (see Table 4 of Appendix 2).

A spread of 35 per cent is substantially higher than the current buy-sell spread of 15 per cent, and substantially higher than expected in competitive standardised contract markets.[37] It would also be inconsistent with the working of a competitive, liquid market, and would undermine the aim of constraining Synergy's pricing to ensure that it is efficient.

Conversely, a lower spread of 12 per cent may limit Synergy's ability to absorb trading risks, potentially affecting its financial stability if market conditions remain, or grow more, volatile.

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35 *Electricity (Standard Products) Wholesale Arrangement 2014*, clause 5.2(e) (online).

36 The effect is if Synergy were to overprice its standard products by having a very high sell price, it would also have a high buy price which would be attractive to other generators who could sell their energy to Synergy at these high prices. This places pricing discipline on Synergy as it will force Synergy to take on more energy through sell-side standard products that would increase Synergy's exposure to the spot market.

37 Bid-ask spreads for ASX listed NSW and Victoria "Base Quarter" electricity futures contracts are generally below 1%. See ASX Energy, 'Australian Electricity Futures', (online) [accessed on 8 September 2025].

Reducing the spread may not strike the balance in being wide enough, but no greater, to allow Synergy a margin to cover possible trading risks.

Synergy is Western Australia's dominant electricity generator, and the sole dealer of forward contracts with publicly quoted buy and sell prices. Currently, Synergy is a net energy supplier, so it has an implicit motivation to set high prices for its standard product sell contracts. The imposition of a fixed (and low) buy-sell spread disciplines against exploitative sell prices, since an exploitatively high sell price enjoins a high buy price that would be unattractive to Synergy. An increase in the policy specification for the buy-sell spread would undesirably enable higher sell prices in comparison to buy prices. With the planned imminent closure of its remaining coal-fired generators, Synergy's generation and demand mix is expected change, which may alter its incentive alignment with high standard product sell prices.[38]

4.2 Standard products buy and sell imbalance

The standard products regime includes obligations that undermine Synergy's ability to manage the regime according to typical dealer market principles.

Dealer market principles

In dealer markets, dealers (or market makers) set buy and sell prices for the underlying product. Dealers aim to buy low and sell high (relative to the "fair" market price) to earn the buy-sell spread regardless of whether the market price is historically or fundamentally high or low. Dealers aim to match buy and sell volumes so that, on average over time, they are not exposed to rising or falling market prices. Traders that transact with a dealer suffer the price disadvantage of the buy-sell spread but get the benefit of liquidity (that is, transaction availability and immediacy).

For a dealer to have sustainable operations, in addition to balanced buy and sell transactions, the buy-sell spread multiplied by the balanced volume of buys and sells, on average over time, will need to cover the dealer's business costs. The willingness of traders to transact at the buy and sell prices, plus competition from other dealers, will also influence a dealer's equilibrium buy-sell spread.[39]

For Synergy to function effectively as a dealer of forward electricity contracts, it needs to attract matching volumes of buy and sell transactions for standard products.[40] In principle, the buy-sell spread in combination with balanced buy and sell transactions should be sufficient to cover the business costs associated with the standard products regime.

[38] Note that standard products are cash settled without actual delivery of electricity generation.

[39] In a liquid market, the market price is driven towards its efficient (or fair) level by active buying and selling by informed market participants (Biais, Glosten and Spatt, 2005). The equilibrium buy-sell spread for dealers in a liquid market will comprise a transaction cost component to compensate for the explicit costs of being in business as a dealer, plus an adverse selection cost component to compensate for the opportunity costs that arise for dealers when they trade with better informed traders (Glosten and Milgrom, 1985). Higher liquidity (i.e. more frequent and higher volume buying and selling) provides dealers with more frequent and larger profits from the buy-sell spread which thereby supports a lower buy-sell spread via a lower transaction cost component. The adverse selection cost component depends on the level of information asymmetry between dealers and other traders regarding price fundamentals.

[40] A desirable balance could be achieved across the aggregate of standard and customised product transactions; however, this section will only refer to standard products.

- Presently Synergy's standard product transactions are almost exclusively sell transactions for which Synergy stands to profit from the *speculative* prospect that the future realised electricity price will be lower than the contract sell price.[41]

- To become a balanced dealer, Synergy would need to raise standard product buy prices to attract buy transactions (to balance the sell transactions).

- It may also be necessary to raise sell prices to dissuade sell transactions until buy and sell volumes are balanced (on average over time).

- The equilibrium buy-sell spread would then be a natural consequence of seeking to cover business costs.

However, it is possible that the market is too small and the imbalance of demand for buy and sell contracts is too great to support a fully balanced and self-sufficient dealer operation. Dissuading sell transactions would also be contrary to the purpose of the standard product regime.

4.2.1 Imbalanced hedging motivations

Hedging can be used by businesses to reduce the uncertainty of future net operating revenues and/or costs, which flows on to reduced profit risk. Standard product sell contracts are attractive to electricity retailers seeking to hedge future electricity cost uncertainty. Conversely, standard product buy contracts *should* be attractive to generators seeking to hedge future electricity revenue uncertainty.

Electricity retailers are highly constrained with respect to adjusting their retail selling prices in response to adverse changes in wholesale prices; but electricity generators have some flexibility to adjust their wholesale selling prices in response to adverse changes in input costs (such as the gas price).[42] Therefore, there is a natural imbalance in hedging demand for standard product buy and sell contracts.

Nevertheless, the efficient market response (raising buy and sell prices) would see the standard product buy-sell midpoint price be an upwardly biased estimate of the future expected spot price, as necessary to balance buy and sell transactions.[43]

Currently, the standard product pricing and transaction activity implicitly entails subsidisation of electricity retailers via sell contracts.

4.2.2 Prospects for standard products buy and sell balance

There is no indication that Synergy is setting exploitatively high standard product sell prices, as evidenced by a transaction imbalance skewed almost completely towards sell contracts.[44]

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41 This concept of profit is purely with respect to Synergy's standard product trading without regard for Synergy's other business activities.

42 Household electricity pricing is regulated by the State Government. The WEM aims to allow generators greater flexibility as to how they sell electricity and who they transact with. See: Australian Energy Market Operator, 'About the Wholesale Electricity Market (WEM)', (online) [accessed on 9 September 2025]; Energy Policy WA, 30 June 2025, 'Business and Government Electricity Pricing', (online) [accessed on 9 September 2025].

43 It is common that forward prices entail (efficient) bias with respect to expected future spot prices. "Normal contango" (or often just "contango") describes the condition of forward prices being higher than expected future spot prices, and "normal backwardation" describes the condition of forward prices being lower than expected future spot prices.

44 Given that Synergy has negligible standard product buy transactions, a profit-motivation would see them err to the high side for their quotes. The risk that high buy prices will be exploited to any great extent (at cost to

The implicit subsidisation of electricity retailers utilising sell contracts may be a desirable outcome given that retailers are inherently at greater risk from price volatility than electricity generators, but the value of this subsidisation is uncertain, variable and inequitably only accrues to those retailers that utilise sell contracts.

The ERA's 2021 report observed:

> The ERA has found that the standard product sell price reflects Synergy's forecast spot price plus a margin. In contrast, the buy price is set as low as permitted by the scheme.[45]

Synergy continued to use the same approach.. Market participants obtain an indication of Synergy's expert and informed price forecasts through the standard product quotes, but this is partly obfuscated by the non-transparent premium component. Evidently this pricing mechanism does not result in buy and sell transaction balance.

With the understanding that the expected future spot price for electricity is distinct from the efficient forward price (being the fair market-clearing price for balanced forward contract buy and sell transactions), the currently combined forecasting service and hedging service provided by the standard products regime could ideally be separated.

- Synergy could periodically publish its expert expectations for future spot electricity prices without any "black box" risk premiums. These forecasts could be tracked and assessed against realised prices with a requirement for explanation of significant deviations.

- Consideration could then be given to liberalising the standard product regime towards a financially independent forward market, noting that this may not be possible within the small and illiquid Western Australian electricity market.

4.3 The ERA's findings

Between 2021 to 2024, the spot market price has been affected by significant shocks, such as coal shortages and a tightening gas market. The new WEM also commenced within this period. The impact on the new market is unprecedented in terms of both high and volatile prices. This volatility affected Synergy's ability to accurately forecast forward spot prices resulting in higher forecasting errors experienced in the previous years and requiring a spread of 12 per cent to 35 per cent.

The buy-sell spread might be a deterrent to Synergy if it is a net seller of energy. For net energy suppliers, monitoring and mitigating the potential misuse of market power often focuses on generation capacity, market share, and pricing influence. However, using the same approach to assess an entity that could be a net buyer may not accurately evaluate its current market behaviour, particularly in the context of market power. Persisting with a supplier focused approach may obscure this shift in behaviour and may fail to detect new forms of buyer side market power.

The pricing mechanism does not result in a buy and sell transaction balance. Visibility of Synergy's expectations of future energy prices is partly obfuscated by the non-transparent margin component. Achieving the buy and sell transaction balance will require Synergy to raise its buy and sell product prices. However, raising of buy transaction prices did not result

Synergy) is arguably outbalanced by the profit opportunity from higher sell prices. Historically Synergy seems not to have been undertaking such a strategy (at least not successfully); however, recently, their quotes have overshot realised prices.

[45] Economic Regulation Authority, 16 December 2021, *Electricity Generation and Retail Corporation regulatory scheme: 2020 effectiveness review, Report to the Minister for Energy*, p. 14 (online).

in increased demand for buy side standard products. The WEM may be too small a market to achieve balance of buy and sell transactions.

Effectiveness of the standard products may improve if the currently combined forecasting and hedging services are separated. However, success of separate forecasting and hedging services also depends on other factors such as size of the market. The WEM may be too small for separate forecasting and hedging services.

Questions

8. Do you consider the current buy-sell spread should change? Please provide reasons for your response.
9. How can the scheme address Synergy's potential to exercise market power on either the buy or sell side and remain agnostic to Synergy's net position?
10. Does the WEM need separate hedging and forecasting services? If so, how do you envision such mechanisms may operate? Please provide reasons for your response.

5. Specifications of standard products

The WEM, Synergy, and the energy industry have changed considerably since the scheme's inception in 2014. If Synergy becomes a net energy buyer, its exposure to the spot market prices will increase. Since 2023, more renewable generation and storage facilities have joined the grid, changing Synergy's generation facilities composition.

In its 2021 review, the ERA considered specifications, terms and conditions of standard product but decided not to make any recommendations on these as we were not sure the assumptions underlying these recommendations would hold in the new market.[46] Now that the new WEM has commenced, we have reviewed the appropriateness of the specifications of standard products.

In this chapter, we explore whether the standard product specifications reflect current risk management requirements of market participants.

5.1 Customised products

Customised products are bilateral contracts that are tailored to meet the needs of the counterparty trading with Synergy. Customised products can provide insight to the types of products that counterparties contracting with Synergy require.[47]

To enter a customised product with Synergy, a market participant submits a request for quote (RFQ). Synergy responds to the RFQ with a quote.[48] If counterparties wish to proceed with a trade, Synergy delivers a Confirmation under the Master Bilateral Trading Agreement for execution.[49] We analysed RFQs received and executed by Synergy between 2021 and 2024.

The analysis suggests that standard product term and volume (MWh) are generally consistent with the products requested by market participants as three months was the most preferred length for both received and executed RFQs, and these were often for small volumes of energy. For example:

- 60 per cent of all RFQs received by Synergy were for three-month terms.[50]
- 27 per cent of RFQs have a peak period component with volumes of less than 1 MWh.[51] Out of these, 82 per cent were for a three-month period.
- Out of RFQs with an off-peak component with less than 1 MWh, 43.9 per cent were for a three-month duration.

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46 Economic Regulation Authority, 16 December 2021, *Electricity Generation and Retail Corporation regulatory scheme: 2020 effectiveness review, Report to the Minister for Energy*, p. 90 (online).

47 These transactions are confidential and not publicly available. Synergy has provided details on its customised product transactions in response to the ERA's notice for information as part of this review.

48 The prices are subject to the satisfaction of Synergy's usual credit assessment and internal review and approval.

49 Delivery of the confirmation is subject to the satisfaction of Synergy's trading and credit policies.

50 For the purpose of this analysis, we considered RFQs with lengths 89, 90 and 91 days as 3 months. Other length categories were, 1 month (7.1 per cent), 1 year (11 percent), all other – from less than one day up to 20 years (21.8 per cent).

51 0.5 MWh per 30-minute trading interval. If the RFQ log identified a certain RFQ requesting energy under 'PEAK VOLUME' this analysis considers such RFQs as peak requests. The same RFQs can be for both peak and off peak products.

- For three-month RFQs, the preferred volume was less than 5 MWh.

The ERA considered whether another type of standard product might be needed based on responses to the voluntary survey. The ERA's analysis of RFQs indicates low demand for monthly and off-peak products:

- Less than 10 per cent of RFQs were for periods of one month and less.
- Approximately 26 per cent of RFQs submitted were for an off-peak period.[52]

If a standard product of the desired length and/or volume is not available, market participants can request a customised product from Synergy. Terms requested in RFQs ranged from less than one day up to 10 years. The ERA observes that 97.7 per cent of RFQs for a three-month period were for total volumes above 5 MW per week.

The ERA analysis indicates high demand in the customised product market during 08:00am to 08:30am and 09:30pm to 10:00pm intervals. These requests accounted for 52 per cent of all RFQs. Synergy currently provides standard products for the peak period, defined as 8:00am to 10:00pm on a business day. Feedback from stakeholders suggests that this definition is out of date with the actual peak period observed in the WEM, which generally starts in late afternoon.

5.2 Force majeure

For standard products, a "force majeure event" is:

> An event or circumstance which is beyond the reasonable control of the person and which by the exercise of due diligence the person is not reasonably able to prevent or overcome, other than the person's lack, or inability or unwillingness to reasonably use funds.[53]

The ERA only considered forced outages in its analysis.

The standard product agreement can have a force majeure provision, but the provision must comply with clause 6.5 of the wholesale arrangements which outlines specific requirements related to force majeure events.

A standard product agreement must:

- Require the party affected by the force majeure event to mitigate the effect of the event and use reasonable endeavours to resume its obligations.
- Reduce the buyer's liability to pay corresponding to the supplier's failure because of the force majeure event.

The provisions further allow a supplier to suspend their obligations automatically if a force majeure event results in either:

[52] The figures include the RFQs that cover both peak and off-peak periods.

[53] *Electricity (Standard Products) Wholesale Arrangement 2014* (WA), clause 1.4(a) (online).

- At least 20 per cent fall in total electricity capable of being generated or supplied by the supplier's facilities (partial outage);[54] or

- Power supply is not available from specified Synergy's facilities which include certain third-party plant (full outage).[55]

Force majeure provisions have not been updated since the scheme's inception in 2014. The provisions do not reference the materiality of the outage(s) though an outage of over 180 days can lead to termination of the contract. These periods of outage are when market participants most need a hedge. Since 2014, stakeholders have raised concerns about the breadth of the force majeure provisions applicable to standard products.

As foreshadowed in the 2021 EGRC review, the ERA is reviewing the use of force majeure provisions and their ongoing relevance to the scheme in the new market.[56] To date, Synergy has not used the force majeure provisions to relieve its obligations under any standard product contract. However, the ERA's analysis of Synergy's forced outages data finds that Synergy could trigger a force majeure event 27.3 per cent of the time, but has not done so.

Synergy also uses force majeure provisions in its templated agreement for customised products. While wording of those provisions is similar, they are different in scope.

5.3 The ERA's findings

The ERA's analysis indicates that the specifications of the standard products are generally aligned with the most sought after and enquired about customised products. The standard products offered by Synergy appear to appropriately reflect the requirements of counterparties to Synergy. Where three-month (not necessarily quarterly) products are required at volumes not available through the standard products website, counterparties are able to access them as customised products.

However, the market is transitioning to renewables, and demand is increasing, leading to higher morning and afternoon peaks. The ERA is interested in stakeholder views on whether alternative types of products would assist market participants' risk mitigation in the WEM in the future, and whether the timing of peak standard products aligns with the peak demand periods observed in the WEM.

The ERA is also seeking stakeholder feedback on force majeure provisions to assess their ongoing relevance and effectiveness in the new WEM. While Synergy has never relied on force majeure to suspend its obligations under a standard product contract, the provisions remain unchanged since their introduction in July 2014 and may be wider than currently necessary.

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54 For purposes of assessing partial outages, Synergy's facilities include Worsley Cogeneration facility (decommissioned in March 2017), Kwinana Cogeneration facility (decommissioned in March 2022), Bluewaters BW1 G2, Bluewaters BW2 G1, and NewGen Kwinana.

55 Third party facilities are Worsley Cogeneration facility (decommissioned in March 2017), Kwinana Cogeneration facility (decommissioned in March 2022), Bluewaters BW1 G2, Bluewaters BW2 G1, and NewGen Kwinana. Synergy's facilities include Muja G5 (retired in October 2022), Muja G6 (which is being decommissioned), Muja G7, Muja G8, Collie G1, Cockburn CCG1. See: Australian Energy Market Operator, June 2017, *2017 Electricity Statement of Opportunities for the Wholesale Electricity Market*, p. 20 (online) and Australian Energy Market Operator, June 2022, *2022 Wholesale Electricity Market Electricity Statement of Opportunities*, pp. 16 and 62 (online)

56 Economic Regulation Authority, 16 December 2021, *Electricity Generation and Retail Corporation regulatory scheme: 2020 effectiveness review – Report to the Minister for Energy*, p. 91 (online).

Questions

11. What considerations impact your decision on whether to trade in standard products (e.g. price, terms, conditions)?
12. What features do you consider warranted in a standard product regime?
13. Should the definition of ‘peak period’ be aligned with the actual peak periods in the WEM?
14. Should force majeure provisions be altered? If so, why and how?

6. Amendments to the scheme's drafting

There are several key amendments that could be made to the drafting of the scheme that may add clarity and help with the practical implementation and operation of the scheme's requirements. These are outlined below.

6.1 Prohibition of Material Portfolio access to sell-side standard products

In its 2023 review, the ERA recommended that Synergy must not be required to enter into sell-side standard products with counterparties that have access to sufficient generation assets to meet their own risk mitigation needs.[57] This would ensure that standard products would be accessible to entities that need to hedge their risk exposure against variable RTM prices.

On 9 August 2024, the Minister for Energy amended the wholesale arrangements through the *Electricity (Standard Products) Wholesale Arrangements Amendment Instrument 2014*.[58]

However, the amended clause 2.2(f) was drafted to restrict Synergy from entering into a 'buy-side' standard product transaction with a Material Portfolio entity.[59] As a result, the current drafting does not meet the intention of the ERA's recommendations in the 2023 review and is ineffective in restricting entities with sufficient generation assets to meet their own needs from purchasing sell-side standard products from Synergy.

The ERA recommends the drafting in the EGRC Regulations be amended to give effect to the ERA's recommendation from the 2023 scheme review.

6.2 Other clarifying amendments

The ERA considers that if the above amendments are to be made to the *Electricity (Standard Products) Wholesale Arrangements 2014*, this will present an opportunity to provide further clarity through other minor amendments. For example, clause 6.4(b) of the Arrangements still refers to the "Independent Market Operator", which was abolished in 2018 and replaced with the Australian Energy Market Operator. Therefore, the ERA proposes clause 6.4(b) in *Electricity (Standard Products) Wholesale Arrangements 2014* be amended to refer to the Australian Energy Market Operator.

Further, it may be beneficial for the public to have access to the scheme's consolidated legislative instruments. Currently, the original instrument for the wholesale arrangements, published in 2014, is available, which has been updated periodically through amending instruments. A combined version that includes all amendments would improve readability and clarity.

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57 Standard products through which Synergy sells energy forward at a set price (referred to as 'sell-side' products), are particularly useful for market participants without access to sufficient generation to hedge their load obligations.

58 *Electricity (Standard Products) Wholesale Arrangements Amendment Instrument 2014* (WA), (online).

59 Material Portfolio entities are entities that have been identified by the ERA as having 10 or more per cent of total maximum sent out capacity for all its facilities within a portfolio.

Appendix 1 Historical standard product quoted and realised prices

Single-quarter Standard Products

Figure 6 and Figure 7 present histories of Synergy's Standard Products (SP) buy and sell quotes for peak and flat one-quarter electricity prices entailing six-month (i.e. three-months plus one-quarter) quote-horizon uncertainty (Figure 6) and 12-month (i.e. nine-months plus one-quarter) quote-horizon uncertainty (Figure 7), together with the realised quarterly average peak and flat prices (calculated from the reference trading price); also indicated are the seasonal z-scores for the difference between the realised average price for the quarter and the mid-point of the SP buy and sell quotes.[60]

- Figure 6 and Figure 7 show that from 2017 to 2021 electricity prices were relatively stable, and the SP quotes proved to be reasonable expectations for realised prices without persistent comparative over or under pricing. Then for 2022 through to Q3 2023 electricity prices rose strongly so that the (prior) SP quotes were persistently below realised prices.

- A reversal of electricity prices in Q4 2023 (compared to the 2023 peaks) led to an improvement in the alignment between SP quotes and realised prices. However, the one-quarter prior (i.e. six-month uncertainty) SP quotes notably over-shot realised prices for Q3 2024 onwards (see Figure 6).

- Figure 6 and Figure 7 indicate multiple instances of significant seasonal z-scores from Q4 2021 onwards.[61] In consideration of a 95% confidence interval for SP quote forecasting accuracy: for the Figure 6 time series, an upper limit expectation is one or two separate single or pairs of significant seasonal z-scores;[62] and for the Figure 7 time series an upper limit expectation is no more than a single set of four contiguous significant seasonal z-scores.[63] The implication is that, for 2022 to 2024, the single-quarter SP quotes did not consistently and reliably forecast electricity prices.

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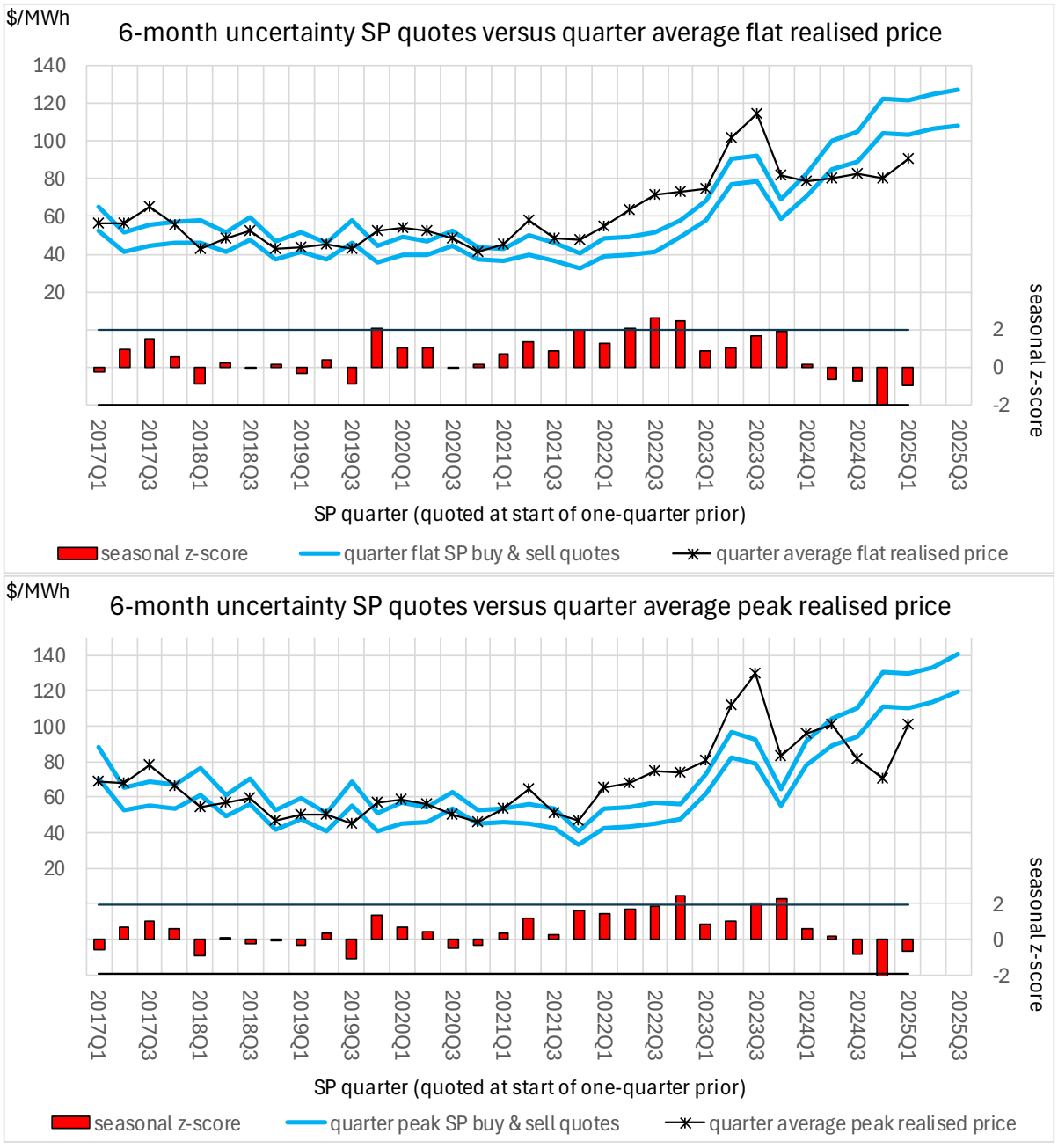
60 The "significance" of the difference between SP quotes and realised prices is assessed with seasonal z-scores, $z_t^h = [(p_t - \bar{p}_t^h)/\bar{p}_t^h]/\sigma_Q^h$, where, for quarterly time period t: the numerator, $(p_t - \bar{p}_t^h)/\bar{p}_t^h$, is the relative difference between the quarter's realised average electricity price (p_t) and the mid-point of the one-quarter SP buy and sell quotes ($\bar{p}_t^h$) previously quoted with horizon h (in quarters); and electricity price uncertainty, σ_Q^h, is the standard deviation of the sample time series of $(p_t - p_{t-h})/p_{t-h}$ (i.e. the h-quarter relative change in p_t) pertaining to the same quarter Q each year. Estimates for σ_Q^h generally increase with the price change horizon (h), and exhibit seasonal variation associated with each separate quarter (Q) of a year. Hence, the calculation of z_t^h incorporates the seasonality of price uncertainty. The 95% confidence interval for the seasonal z-score (z_t^h) is +/-1.96. A seasonal z-score outside of the range +/-1.96 can be considered a significant SP quote forecast error.

61 For the six-month SP quote-horizons presented in Figure 6, significant SP quote forecast errors by quarter will tend to occur in pairs because a large realised price deviation in a quarter can only be incorporated into the six-month horizon SP quotes beyond the next quarter. Similarly for the 12-month SP quote-horizons presented in Figure 7, significant SP quote forecast errors by quarter will tend to occur in fours because a large realised price deviation in a quarter can only be incorporated into the 12-month horizon SP quotes beyond the next three quarters.

62 Based on a Binomial (16,0.05) probability function for 16 non-overlapping 6-month time periods.

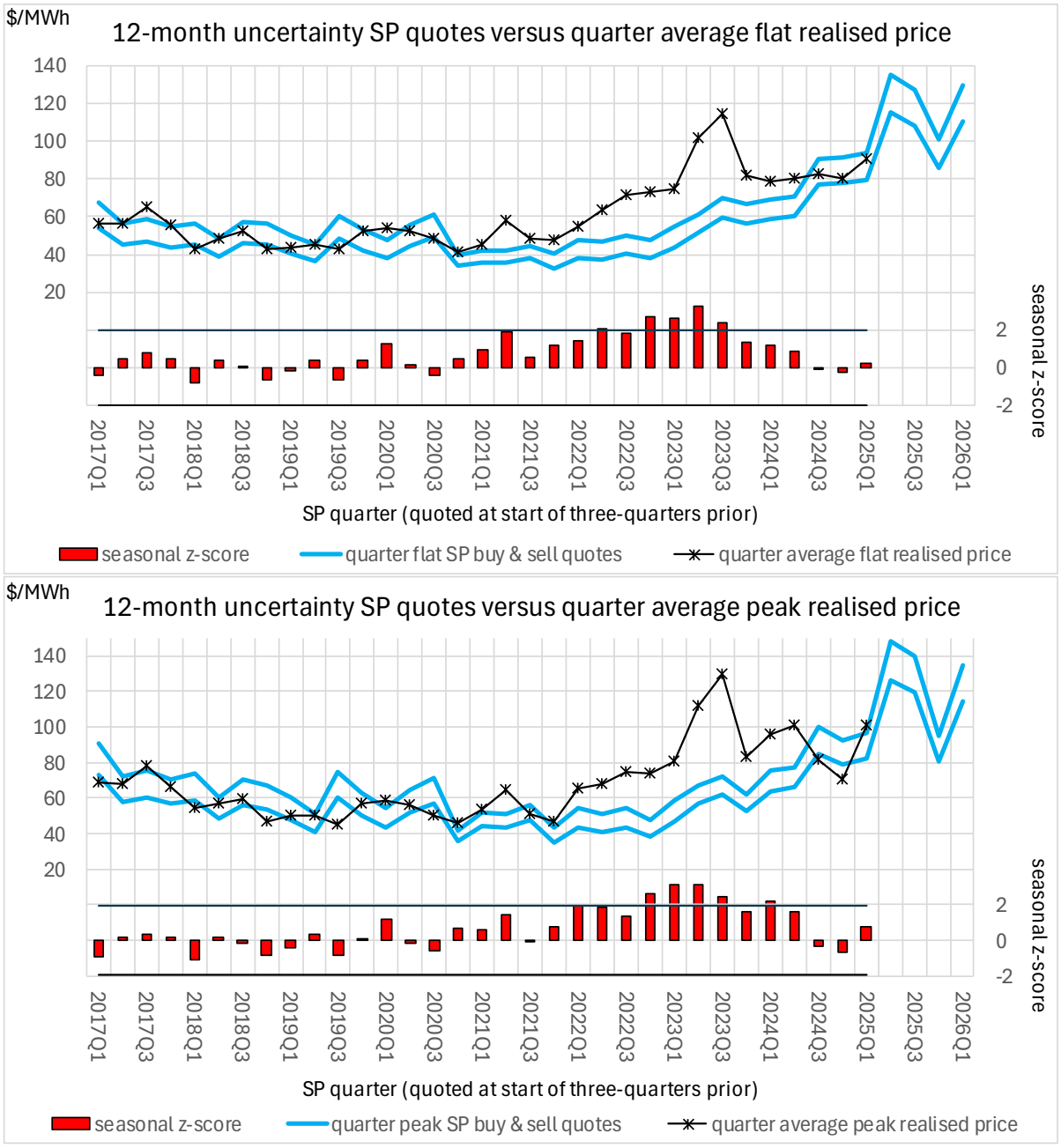
63 Based on a Binomial (8,0.05) probability function for eight non-overlapping 12-month time periods.

Figure 6: Single-quarter standard products – six months uncertainty



Source: ERA analysis of Synergy data

Figure 7: Single-quarter standard products – 12 months uncertainty



Source: ERA analysis of Synergy data

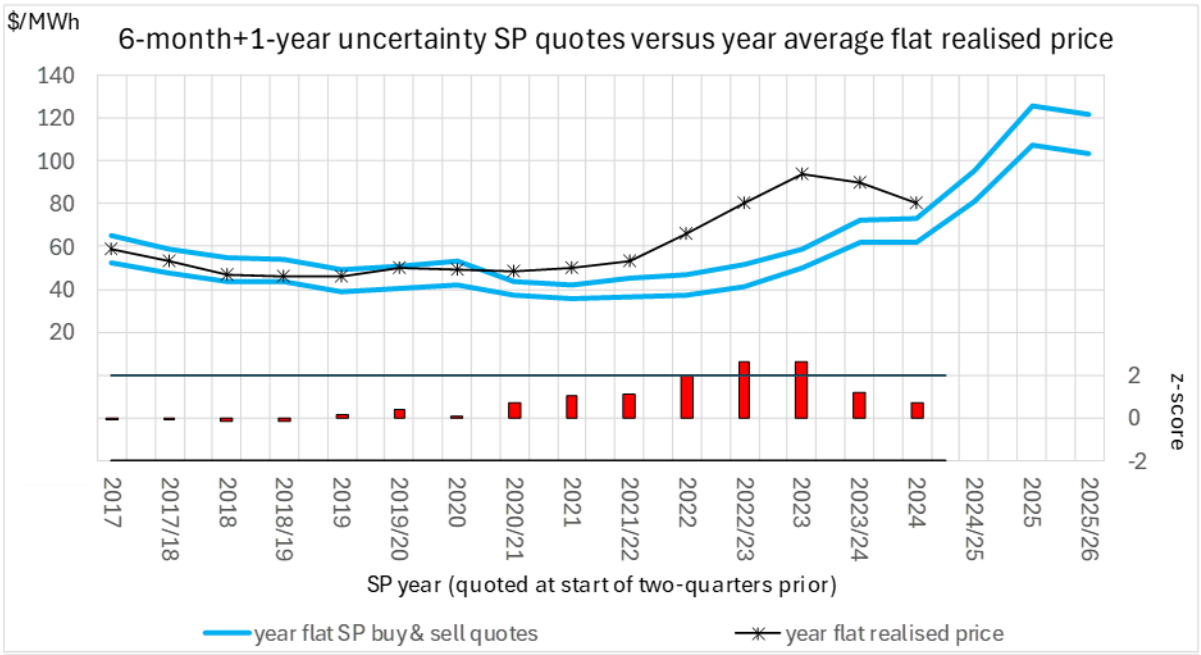
One-year Standard Products

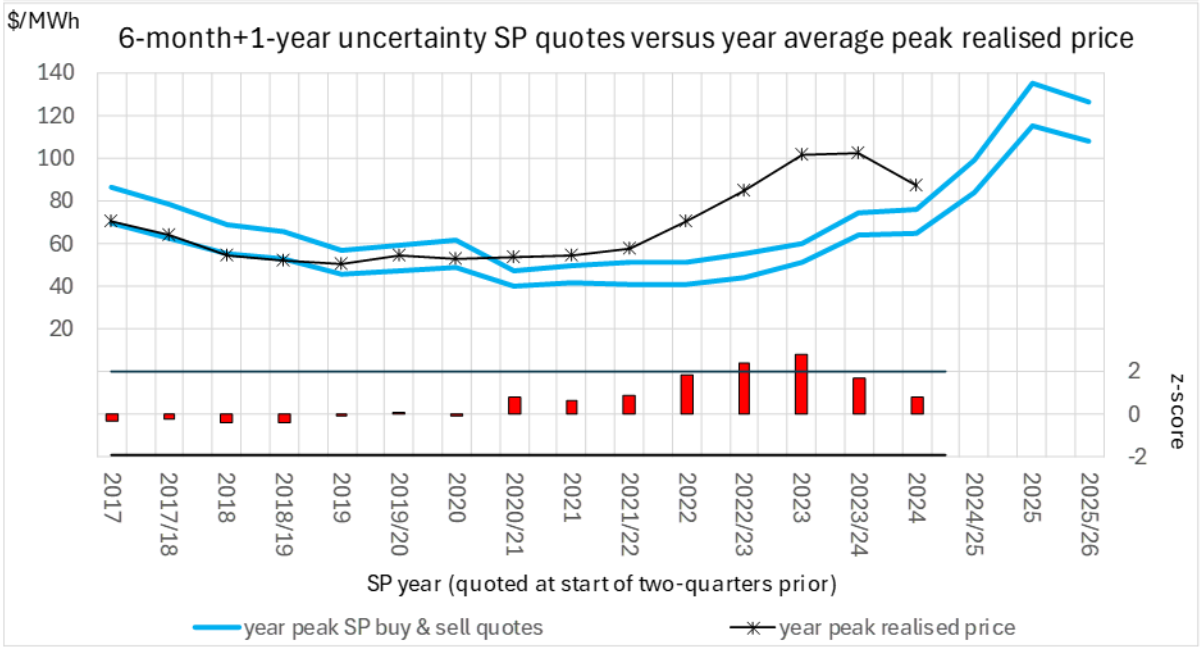
Figure 8 below presents histories of Synergy's SP buy and sell quotes for peak and flat one-year (calendar year and financial year) electricity prices entailing six-months plus one-year quote-horizon uncertainty, together with the realised yearly average peak and flat prices. Similar to the Figure 6 and Figure 7 evidence for single-quarter SPs, Figure 8 shows that one-year SP quotes for 2022 to 2023/24 were substantially below the realised one-year average prices.

Also indicated in Figure 8 are the z-scores for the difference between the realised average electricity price for the year and the mid-point of the SP buy and sell quotes, of which the 2022/23 and 2023 z-scores are identified as significant.

For the Figure 8 time series a reasonable expectation would be no more than a single set of two or three contiguous significant z-scores. The implication is that, with consideration of the entire time series and the inevitability of occasional significant forecasting errors, the significant one-year SP quote forecast errors during 2022 to 2024 are not necessarily unreasonable.

Figure 8: One-year standard products

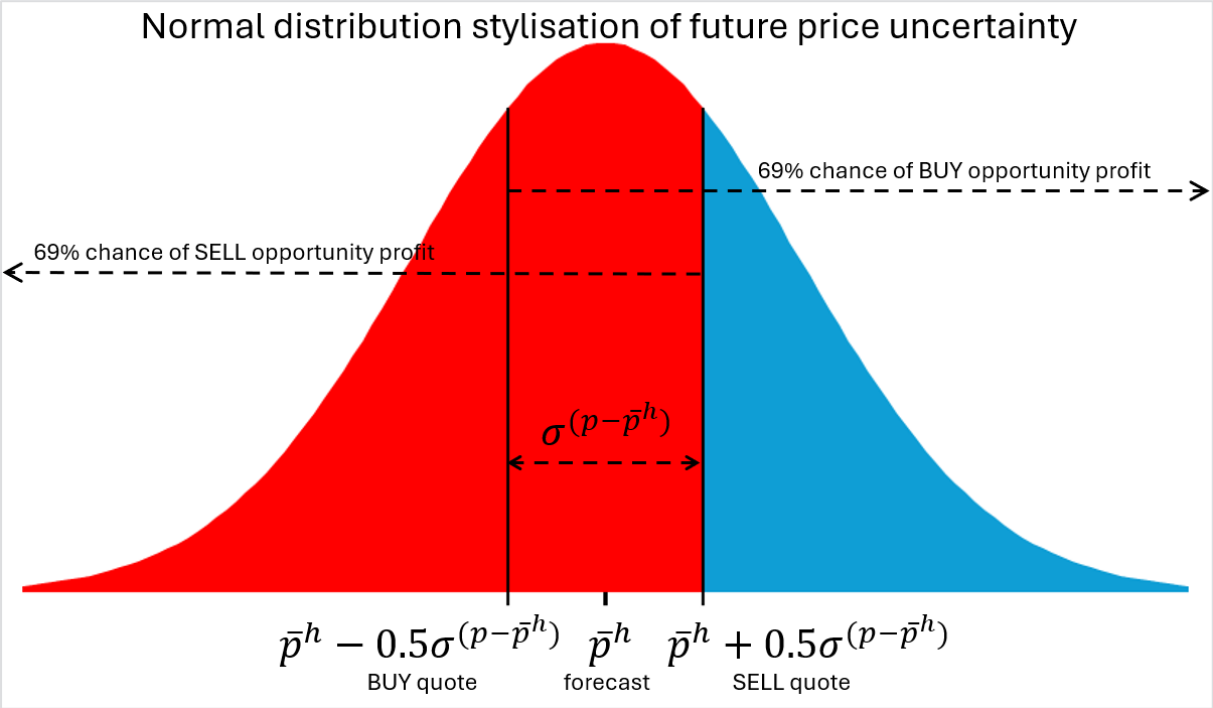




Appendix 2 Historical method used for calculating the buy-sell spread

Since the 2015 review, an appropriate maximum buy-sell spread has been specified by the ERA to be one standard deviation of price variability around Synergy's price forecast. This is depicted in Figure 9 where $\bar{p}^h$ is the electricity price forecast for horizon h (in quarters), and $\sigma^{(p-\bar{p}^h)}$ is the standard deviation of the difference between realised and forecast price (i.e. forecast error). Assuming a normal distribution for the future realised electricity price with mean, $\bar{p}^h$, and standard deviation, $\sigma^{(p-\bar{p}^h)}$, a n SP sell price $0.5\sigma^{(p-\bar{p}^h)}$ higher than $\bar{p}^h$ has a 69% chance of being higher than the realised price, and an SP buy price $0.5\sigma^{(p-\bar{p}^h)}$ lower than $\bar{p}^h$ has a 69% chance of being lower than the realised price.[64]

Figure 9: Normal distribution stylisation of future price uncertainty



Source: ERA analysis

Table 4 presents Q1 2017 to Q1 2025 time series details for SP *relative* forecast error, $(p - \bar{p}^h)/\bar{p}^h$, for quarterly average electricity prices for two-quarter and four-quarter forecast horizons (h), for the same quarter (Q) each year, for flat and peak prices. Both the mean and standard deviation of SP relative forecast errors entail wide variation dependent on the price forecast horizon and the quarter of the year. Consistent with what is shown by Figure 6 and Figure 7, realised quarterly average electricity prices have been, on average, considerably higher than the SP forecasts.

Specifying the SP buy-sell spread relative to the sell price, and imposing a limit equal to one standard deviation of price forecast error, the formulation for the maximum buy-sell spread is given by:

[64] That is, inputting z-score $\left[\left(\bar{p}^h + 0.5\sigma^{(p-\bar{p}^h)}\right) - \bar{p}^h\right]/\sigma^{(p-\bar{p}^h)} = 0.5$ into the standard normal cumulative distribution function gives 0.6915.

$$max\left(\frac{p_{SELL}-p_{BUY}}{p_{SELL}}\right)=\frac{\left(\bar{p}^h+0.5\sigma^{(p-\bar{p}^h)}\right)-\left(\bar{p}^h-0.5\sigma^{(p-\bar{p}^h)}\right)}{\bar{p}^h+0.5\sigma^{(p-\bar{p}^h)}}=\frac{\sigma^{(p-\bar{p}^h)}}{\bar{p}^h+0.5\sigma^{(p-\bar{p}^h)}}.$$

This can be reformulated in terms of the standard deviation of relative forecast error, $\sigma^{(p-\bar{p}^h)/\bar{p}^h}=\sigma^{(p-\bar{p}^h)}/\bar{p}^h$:

$$max\left(\frac{p_{SELL}-p_{BUY}}{p_{SELL}}\right)=\frac{\bar{p}^h\sigma^{(p-\bar{p}^h)/\bar{p}^h}}{\bar{p}^h+0.5\bar{p}^h\sigma^{(p-\bar{p}^h)/\bar{p}^h}}=\frac{\sigma^{(p-\bar{p}^h)/\bar{p}^h}}{1+0.5\sigma^{(p-\bar{p}^h)/\bar{p}^h}}.$$

Given the time series results for $\sigma^{(p-\bar{p}^h)/\bar{p}^h}$, Table 4 presents implied maximum buy-sell spreads dependent on the price forecast horizon and quarter of the year.

- If it is accepted that Synergy's electricity price forecasts are "fair" (i.e. ex-ante unbiased) forecasts for the SP buy-sell midpoint, and the (arbitrary) $1\times\sigma^{(p-\bar{p}^h)}$ buy-sell spread (Figure 9) premise is to be applied, then the maximum SP buy-sell spread will be dependent on the SP horizon and quarter with a range of about 12% to 35% (for single-quarter SPs).

- Note that the $1\times\sigma^{(p-\bar{p}^h)}$ buy-sell spread (Figure 9) premise has no practical or theoretical foundation and can readily be dismissed.

Table 4: Implied maximum buy-sell spreads dependent on the price forecast horizon and quarter of the year

Time series characteristics of SP relative forecast error for quarterly average electricity price, $(p-\bar{p}^h)/\bar{p}^h$							Implied maximum SP buy-sell spread, $\frac{\sigma_Q^{(p-\bar{p}^h)/\bar{p}^h}}{1+0.5\sigma_Q^{(p-\bar{p}^h)/\bar{p}^h}}$	
Specification			Mean		Standard deviation, $\sigma_Q^{(p-\bar{p}^h)/\bar{p}^h}$			
Horizon, h	Quarter, Q	Observations (within 2017Q1 to 2025Q1)	Flat prices	Peak prices	Flat prices	Peak prices	Flat prices	Peak prices
2 quarters (6-month uncertainty)	Q1	9	4%	4%	17%	19%	**15%**	17%
	Q2	8	17%	17%	17%	13%	16%	**12%**
	Q3	8	13%	8%	26%	30%	23%	26%
	Q4	8	13%	11%	22%	27%	20%	24%
4 quarters (12-month uncertainty)	Q1	9	14%	14%	21%	25%	19%	22%
	Q2	8	30%	27%	28%	30%	24%	26%
	Q3	8	18%	10%	34%	42%	**29%**	**35%**
	Q4	8	19%	15%	26%	32%	23%	27%

Source: ERA analysis

Appendix 3 List of Tables

Appendix 4 List of Figures