

Report to the Minister on the Effectiveness of the Electricity Generation and Retail Corporation Regulatory Scheme

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Executive Summary

The Electricity Generation and Retail Corporation (**EGRC**) Regulations¹ and EGRC Regulatory Scheme (**Scheme**) were put in place when Verve Energy and Synergy were merged on 1 January 2014. The Scheme recognised that Synergy² had control of around three quarters of the wholesale energy supply in the WEM, either through its own generation or contractual arrangements with third party generators, and therefore it was important to ensure it was not able to unduly favour its own retail arm over third party retailers when offering wholesale energy supplies.

The Scheme's requirements for Synergy include ring-fencing, business segregation, transfer pricing and non-discriminatory wholesale electricity trading. The Scheme is designed to ensure third parties are able to access wholesale energy contracts on fair and reasonable terms and that Synergy does not discriminate between its own generation and third party generators.

The Office of the Auditor General (**OAG**) is responsible for conducting annual audits to ensure Synergy has complied with the Scheme. With the exception of failures to provide the first segment report by the required date, and failing to update Standard Product availability in as close to real time as practicable,³ the audits conducted by the OAG confirm that Synergy is complying with the requirements of the Scheme.

The Economic Regulation Authority (**ERA**) is responsible for conducting annual reviews of the operation of the scheme to assess its effectiveness. The ERA's first report is available on the ERA's website.⁴ In this review the ERA has focussed on considering whether market participants have access to forward energy contracts on fair and reasonable terms.

A competitive market requires buyers and sellers to be able to quickly and easily trade energy contracts (i.e. a "liquid" market) at cost-reflective prices. As noted by the Competition and Markets Authority (**CMA**) in its investigation into the energy market in the UK, "opaque prices and low liquidity in wholesale electricity markets distort competition in retail and generation".

Since the ERA's last report, competition in the contestable retail market has continued to be strong and Synergy has lost further retail market share to competitors. This continues the trend which has occurred since the market commenced in 2006. As discussed further

¹ http://www.slp.wa.gov.au/legislation/statutes.nsf/main_mrtitle_13129_homepage.html

² This refers to a combination of Verve Energy and Synergy prior to the merger and the combined entity following the merger.

³ In its audit of the period ending 30 June 2014, the OAG found that Synergy's report to the Minister for the quarter ended 31 March 2014 did not include separate statements of financial performance for each business unit; and that the report was provided to the Minister on 8 May 2014, rather than within one month after the end of that quarter. The separate statements of financial performance were required during a period of unprecedented change for Synergy, and were subsequently provided to the Minister on 9 September 2014. In its financial year audit for the year ended 30 June 2015 the OAG found that for two of the twelve Standard Product transactions executed during the year, remaining availability was only disclosed on the website six and nineteen working days after execution of the transactions, which it was considered not as close to real time as practicable.

⁴ A copy of the ERA's first report can be found here <https://www.erawa.com.au/electricity/wholesale-electricity-market/reviews/the-electricity-generation-and-retail-corporation-egrc-regulatory-scheme>

below, the current market conditions are leading to a number of market participants⁵, [REDACTED] electing to purchase energy in the Short Term Energy Market (STEM)⁶ and Balancing Market⁷, rather than enter into forward energy contracts with Synergy's wholesale business unit.⁸ At the present time, therefore, market participants appear not to be relying on the Scheme to get access to wholesale energy supplies.

This situation has arisen largely because Synergy has more energy than it can sell to its own customers, with its excess volumes flowing into the STEM and Balancing Market where it must be offered in at short run marginal cost (SRMC)⁹. Synergy is 'long on energy' for two reasons. On the demand side, Synergy's sales have reduced as a result of increasing energy efficiency and PV penetration. It has also lost contestable retail market share to competitors. On the supply side, however, the generation and bilateral energy purchases of Verve and Synergy combined have remained relatively constant since the market commenced. As a consequence, Synergy purchases and generates more energy than it is currently selling to its retail and wholesale customers.

This is part of the current condition of excess capacity that exists in the WEM, which is made up of demand side management, peaking generation and baseload capacity. In particular, the excess of baseload capacity is resulting in less variable energy prices in the STEM and Balancing Markets than would be likely if the capacity market was more closely balanced. It is likely these conditions are leading to some retailers choosing to remain unhedged, and taking the risk of exposure to price variations in the STEM and Balancing Market, rather than accepting the fixed price energy contracts currently being offered.

The prices of the Standard Products¹⁰ Synergy is required to offer under the Scheme should represent the forward price curve against which retailers can hedge future price risks. However, stakeholder submissions indicate the Standard Product prices are considered to be too high to offer a reasonable hedge for an electricity portfolio. It is expected that Standard Product prices would be higher than STEM prices because retailers would be expected to pay a premium to avoid risk. However, a comparison of the final published Standard Product price with the actual average STEM price for the relevant period shows the Standard Product price, with the exception of Q4 2015,¹¹ has been between 15 to 22 per cent higher than the average STEM price in relation to Peak Products and 6 to 26 per cent higher in relation to Flat Products.

⁵ Market Participants include [REDACTED]

⁶ Market participants can buy and sell energy the day before it is required in the Short Term Energy Market (STEM).

⁷ The Balancing Market is a close to real time energy market. Generators submit offers to the AEMO setting out the quantities and prices at which they are willing to be dispatched. AEMO ranks the offers by price to determine which generators are dispatched to match the energy required by the market.

⁸ During the period between January 2014 and November 2015, of the [REDACTED] requests for quotation submitted to Synergy, only [REDACTED] took up the contract offered. [REDACTED] In relation to the Standard Products, there have only been 9 sell transactions in total [REDACTED]

⁹ The Market Rules SRMC bidding requirement is necessary to ensure generators are not able to take advantage of any market power they may have.

¹⁰ Standard Products are off-the-shelf electricity futures with a buy and sell price. They provide small amounts of electricity with locked in prices and quantities thereby removing exposure to price variations on the STEM and Balancing Markets.

¹¹ Explain STEM price was unusually high due to outages and in any case the Standard Product price was only slightly below the actual STEM price.

The proposed capacity market reforms would be expected to remove excess supply over the medium term, and as a consequence the excess energy that is currently suppressing the variability of STEM and Balancing Market prices. As the capacity market comes more into balance, retailers will have a much greater need for energy contracts in order to hedge themselves against short term price variations in STEM and Balancing Market prices. In this situation, the effectiveness of the Scheme in ensuring retailers can access energy contracts from Synergy on fair and reasonable terms becomes much more important.

To ensure the Scheme's effectiveness, the ERA considers improvements are necessary to the Standard Products so they provide a competitive benchmark price for the wholesale supply of electricity. Improving the Standard Products should also flow through to Customised Products as the Standard Products provide a benchmark for negotiation of Customised Products.

The evidence strongly supports the conclusion that the key to improving the Standard Products is determining the right level of spread between the Standard Product buy and sell prices.

The level of spread set when the Scheme was put in place (25 per cent and reduced to 20 per cent from 1 January 2015) necessarily reflected limited data and uncertainties regarding how the Scheme would operate. However, from the data that is available to the ERA, in the current market a spread of 20 per cent is preventing the Scheme from performing as intended.

Given that the Standard Products Regime was designed to counter against Synergy's potential market power in negotiating forward energy sales or purchases with other market participants, it follows that a spread that mirrors the outcome that would be expected in a competitive WA electricity futures market would best meet this purpose.

In competitive markets, spreads typically represent the risk margin that traders receive for bearing the risk, and that market participants pay to avoid the risk, in relation to spot price volatility. In an electricity futures market, this is the risk of agreeing to sell energy in the future at a fixed price but having to purchase it at a future unknown price. The magnitude of this risk is affected by how quickly and easily future contracts can be traded, i.e. the market's liquidity. In liquid markets, future contracts can be traded quickly, without affecting the market price, as there are always willing buyers or sellers. In illiquid markets, there are less willing buyers or sellers and future contracts may take longer to trade and be signed at a price that is significantly different from the price that would be available if the market were liquid.

Spreads in other competitive electricity markets vary but are typically in the range of 2 to 8 per cent. The ERA recognises that setting a spread in WA is not necessarily a matter of immediately adopting the spreads that prevail in other competitive markets because market differences and current market conditions need to be taken into account. For example, the WA wholesale and retail markets are very small meaning liquidity may never be as high as in (for example) the NEM futures market. These differences in the WA market, when compared to other markets, mean a competitively based spread in WA may be different from those observed in other electricity markets.

In developed and liquid markets the buy/sell spreads are set by market forces. In the absence of such competition, the Scheme specifies the maximum spread. Determining the appropriate competitive spread for the WEM will require judgement and fine tuning over time. The ERA recommends the spread should initially be reset with reference to the volatility of the STEM, on the basis that the Standard Product Sell product reflects the

forecast mean STEM price for the relevant period plus a risk margin to account for market volatility. The ERA has estimated this would require a spread of around 10 per cent.

The ERA notes that under this proposal, Synergy would continue to be free to set the Standard Product prices at whatever level it considers appropriate. Regulating the difference between the sell and buy prices, i.e. the buy-sell spread, incentivises Synergy not to overprice its sell price, because if it does it is exposed to the risk that it may have to also buy energy at higher prices.

Basing the spread on the volatility of the STEM enables Synergy to profit on its Standard Product transactions in the current very illiquid market (i.e. it is sufficient to cover Synergy's exposure to future STEM prices on any Standard Product transactions).

It is important to note the EGRC Scheme is designed to ensure a level playing field between Synergy's RBU and third parties in relation to wholesale energy contracts offered by Synergy's WBU and is not a construct to deal with any potential underlying issues in the WEM. The EGRC Scheme takes the energy prices as it finds them and seeks to ensure Synergy does not discriminate between its own retail business and third parties.

The revised spread should be retained for a suitable period to enable the impact of the change to be assessed, particularly in relation to whether it increases the level of trade in Standard and Customised Products (i.e. liquidity). The ERA suggests a minimum twelve month period and maximum 24 month period may be most appropriate, to provide sufficient time for any changes to impact on the market and for a review to be undertaken. Depending on the outcome of that review, a cautious approach of gradually tightening the spread to a lower level to improve liquidity, whilst ensuring Synergy's risk position is reasonable¹² could then be phased in over a period of time.

Transparency

The recommendations above in relation to the Standard Products should resolve many of the concerns raised by stakeholders. However, stakeholder submissions to the ERA have also raised concerns regarding a lack of transparency in relation to the wholesale transfer prices between Synergy's wholesale and retail business units.

The ERA notes the Scheme requires that separate statements of financial performance for each business unit are prepared in accordance with AASB 8. Publicly available audited financial statements for each of the segregated business units would give market participants confidence that there are no cross subsidies between the business units and that Synergy's wholesale business is not discriminating between third parties and its own retail business.

However, the requirements set out in AASB 8 are broad and open to interpretation. The ERA notes the format of each segment report prepared to date has varied. In addition, the reports have been prepared on a consolidated basis and have not separated the gas and electricity financial results. The level of detail reported in relation to revenue and costs for each business unit has also been limited. Consequently the segment reports have provided

¹² There is a circularity between the level of spread and liquidity. In illiquid markets, wider spreads are needed to compensate traders for their risk. However, in such cases it is often narrower spreads that would be needed in order to promote additional liquidity that would reduce this risk. Determining the "right" level of spread needs to ensure it is adequate to compensate Synergy for its risk, taking account of the actual liquidity of the market, and low enough to encourage more trade i.e. increase liquidity.

very little information in relation to the financial results for each business unit's electricity activities.

The ERA recommends the Scheme include more detailed specification of the segment reporting requirements to ensure they are prepared on a consistent basis and provide sufficient information in relation the allocation of costs between business units, including demonstrating there are no cross subsidies.

In developing these requirements, the ERA acknowledges there will need to be an appropriate balance between transparency and the cost of preparing the information. The ERA also recognises information sensitive to Synergy's commercial operations will need to be adequately protected. This could be managed by including specification of a confidential and public version of the information. The following should be considered when developing the requirements:

- The Scheme reporting requirements should only relate to the electricity activities of the segregated business units at a company level (i.e. exclude the gas retail business and any subsidiaries or joint ventures).
- The Scheme reporting requirements should ensure contestable and non-contestable retail segments are reported on separately.
- The Scheme should require Synergy to follow general principles in relation to cost allocation. For example, the Scheme would specify that costs directly attributable to a business unit must be allocated accordingly and costs not directly attributable should be allocated using a method that is publicly available to be scrutinised.
- Increasing transparency of the transfer pricing arrangements between the GBU, WBU and RBU.

Summary of Key Findings and Recommendations

The current excess capacity within the RCM, particularly in relation to base load generation, is reducing the risk of short term price variation in the STEM and Balancing Markets. As a consequence, retailers are less reliant on obtaining energy contracts from Synergy to reduce their exposure to short term price variations. These market conditions are currently reducing the need for small retailers to hedge to mitigate exposure to energy market risk.

However, the planned reforms to the RCM to reduce the oversupply of capacity and bring the market into balance will most likely lead to an increase in the variability of short term energy prices and the need for retailers to enter into contracts to hedge against these risks. To achieve long term sustainable competition in the WEM requires (amongst other things) for the Scheme to be effective. As outlined above, there are two key areas which need to be strengthened:

- reducing the spread between the buy and sell price for Standard Products; and
- specifying the requirements for the statements of financial performance required to be prepared for each of the segmented business units.

As set out in its report last year, the ERA also considers:

- The objective should be explicitly stated in the Scheme to provide clarity and remove the potential for other considerations to be given precedence.

- The current compliance reporting arrangements could result in a significant delay between an instance of non-compliance and its identification. Consideration should be given to increasing the frequency of the compliance audits and reporting, provided this can be done cost effectively.
- Synergy should be required to self-report any non-compliance to the OAG and ERA as soon as it is identified.

In addition, the process for undertaking reviews like this in the future by the ERA would be more efficient if the information required for the EGRC review could be collected in conjunction with the information required for the review of the effectiveness of the WEM the ERA is required to conduct under the WEM Rules.

As noted in this report, there is an overlap in the two reviews. However, the WEM Rules restrict the information provided under the WEM Rules, such that it can only be used for the purposes of the WEM review. Consequently, the ERA needed to collect the necessary data for this EGRC review using its information gathering powers under section 51 of the *Economic Regulation Authority Act 2003*. Amending the WEM rules to enable information to also be used for the EGRC review would simplify and streamline the process for both the ERA and the parties which provide the information, including AEMO.

Introduction

Under regulation 48 of the *Electricity Generation and Retail Corporation Regulations 2013* (**EGRC Regulations**), the Economic Regulation Authority (**ERA**) is required to carry out a review of the operation of the EGRC Regulatory Scheme (**Scheme**) for the purpose of assessing its effectiveness, at least once per year. In carrying out the review, the ERA must have regard to:

- the prevailing circumstances that exist in relation to the operation of the South West Interconnected System (**SWIS**); and
- any other matters that the ERA considers relevant.

The ERA must give the Minister for Energy (**Minister**) a report based on the review not later than two months after the review is completed, and may include in the report any recommendations it has concerning amendment to the Scheme.

The Minister must cause a copy of the report to be laid before each House of Parliament no later than 21 sitting days after the day on which the Minister receives the report.

Consistent with these requirements, the ERA has conducted a review of the effectiveness of the operation of the Scheme in 2015 and has identified a number of issues, and associated recommendations, that it considers need addressing.

As part of the preparation process for the report, the ERA released a Discussion Paper seeking public submissions, which was published on 11 November 2015. Submissions received in response to the Discussion Paper are available on the ERA's website.¹³

In preparing this report and in forming the views set out in it, the ERA has considered the comments raised in the submissions. Matters not specifically addressed in this report will be considered in future reports.

Background

In late 2013, the *Electricity Corporations Act 2005* (**Act**) was amended to effect the merger of the State owned Electricity Retail Corporation (**Synergy**) and Electricity Generation Corporation (**Verve Energy**). The merged entity was subsequently renamed as the Electricity Generation and Retail Corporation (**EGRC**), and began trading as 'Synergy' on 1 January 2014.

As recognised by the Government, merging the generation and retail businesses without imposing restrictions potentially provided opportunities for Synergy to preference its own retail and generation arms at the expense of third parties, and thus to limit the development of competition. This could include both contracting on less favourable terms with third parties, and having access to commercial information not available to other retailers or generators.

Consequently, the *Electricity Corporations (Electricity Generation and Retail Corporation) Regulations 2013* (**EGRC Regulations**) were put in place by the Government to impose

¹³ Public submissions were received from Alinta, Amanda Energy, Community Electricity, ERM Power and Synergy <https://www.erawa.com.au/electricity/wholesale-electricity-market/reviews/the-electricity-generation-and-retail-corporation-egrc-regulatory-scheme>

requirements on Synergy, including ring-fencing, business segregation, transfer pricing and non-discriminatory wholesale electricity trading.

Regulation 48(1) of the EGRC Regulations requires that the Economic Regulation Authority (**ERA**) review the operation of the EGRC Regulatory Scheme (**Scheme**) for the purpose of assessing its effectiveness, at least once each year.

EGRC Regulatory Scheme Overview

The EGRC Regulatory Scheme comprises the following:

- EGRC Regulations;
- Segregation and Transfer Pricing Guidelines; and
- Standard Product Arrangements.

Synergy is required to divide its operations into segments: the Generation Business Unit (**GBU**), Wholesale Business Unit (**WBU**), Retail Business Unit (**RBU**), shared service operations, and any additional segment(s) approved by the Minister. Synergy is required to prepare separate statements of financial performance for each business unit, on a quarterly basis and in the annual financial report.

Synergy must not discriminate between the RBU and competitors when offering wholesale supplies, in relation to price, and terms and conditions. It is also required to offer specified standard wholesale products to both buy and sell energy (i.e., Standard Products). The Scheme specifies the minimum quantities of Standard Products Synergy must make available, and also specifies the maximum percentage spread between the Buy and Sell price.

The Scheme includes compliance and review provisions. Compliance with the Scheme is monitored by the Auditor General, who is required to conduct annual audits. The Auditor General assesses whether Synergy has complied with the requirements specified in the EGRC Regulations. Any non-compliance reported by the Auditor General must be investigated by the ERA¹⁴.

The ERA is required to review the operation of the Scheme for the purposes of assessing its effectiveness at least once each year. The EGRC Regulations do not specify any criteria for how this assessment must be made.

A more detailed description of the Scheme is set out in Appendix 1.

Reporting requirements

In carrying out its review, the ERA must have regard to:

- the prevailing circumstances that exist in relation to the operation of the South West Interconnected System (SWIS); and
- any other matters that the ERA considers relevant.

¹⁴ Depending on the outcome of that investigation and the nature of the non-compliance, the ERA may impose a civil penalty. Non-compliance with certain obligations under this regulatory regime will incur a civil penalty of up to \$100,000, with additional daily penalties of up to \$20,000 for continuing breaches.

The ERA must give the Minister a report based on the review not later than two months after the review is completed. The report may include any recommendations the ERA has for amending the Scheme.

The Minister must lay a copy of the report before each House of Parliament within 21 sitting days of that House, after the day on which the Minister receives the report. The ERA may request the Minister to delete a matter that is of a commercially sensitive nature from the report that is laid before Parliament.

Approach for this review

The first year of operation of the merged entity, Synergy, was 2014. Accordingly, in its first review of the effectiveness of the EGRC Regulations, the ERA focussed on the fundamental design issues of the scheme that needed to be addressed as soon as possible to ensure that the Scheme was effective. The ERA's first report was tabled in Parliament by the Minister on 25 June 2015 and is available on the ERA's website.

As the Scheme has now been in operation for two years, significantly more information, including trends in retail market share, has been available to the ERA in undertaking its review.

In conducting its review, the ERA must have regard to the prevailing circumstances that exist in relation to the operation of the SWIS and any other matters the ERA considers relevant. The ERA considers that these include:

- the significant market share Synergy has in both the generation and retail segments of the market;
- Synergy is a net seller of electricity as its combined generation and energy purchases are greater than its own customer (wholesale and retail) requirements; and
- the Wholesale Electricity Market (WEM) objectives.

As stated in its first report, the ERA considers that an explicit statement of the objective of the Scheme is necessary to ensure its effectiveness. Specifying an objective against which it can be measured is also necessary for the purposes of assessing how effective the Scheme has been. For this review, the ERA has continued to assess the effectiveness of the Scheme based on the objective developed in its first review; that is, how effective the Scheme is in mitigating the increased potential for exercising market power, which arises due to the merger of Synergy and Verve Energy, by ensuring a level playing field for competitors and new entrants, in order to facilitate competition.

The ERA has reviewed the framework of the Scheme to assess whether it fully addresses the increased potential for exercising market power that arises due to the merger. This has included revisiting the recommendations that the ERA made in its first review and considering them in light of how the Scheme has operated since that review.

The ERA has also undertaken analysis to assess the level of competition in the wholesale and retail markets and developed a methodology to set the spread between the Standard Product Buy and Sell prices as set out below.

Level of competition in the wholesale and retail markets

There is significant interaction between the wholesale and retail markets, with the effectiveness of competition in each market being impacted by the other. Whilst the [Report to the Minister on the Effectiveness of the Electricity Generation and Retail Corporation Regulatory Scheme \(June 2016\)](#)

Scheme is primarily focussed on ensuring a level playing field in wholesale energy, the interactions between wholesale and retail markets need to be taken into account in assessing the effectiveness of the Scheme. For this review, the ERA has reviewed the current level of competition in both the wholesale and retail markets as part of its assessment of how effective the Scheme has been. This review overlaps with the ERA's requirements under the Wholesale Electricity Market Rules to monitor the effectiveness of the market in meeting the Market Objectives.

Standard Product Buy/Sell Spread

Effective competition in the retail market is reliant both on Synergy not discriminating between the RBU and third parties (which the Scheme seeks to ensure), and the non-discriminatory wholesale prices being set on a cost reflective basis. Synergy controls a significant portion of generation in the WEM either through direct ownership or contractual arrangements. The Scheme seeks to address this potential for exercising market power in relation to wholesale prices by requiring Synergy to offer Standard Products, and specifying the maximum buy/sell spread. For this review, the ERA has particularly focused on the buy/sell spread.

Key Recommendations

The ERA has identified two key areas where the Scheme could be strengthened and improved. These are:

- reducing the spread between the buy and sell price for Standard Products; and
- specifying the requirements for the statements of financial performance required to be prepared for each of the segmented business units.

To ensure the Scheme's effectiveness, the ERA considers improvements are necessary to the Standard Products so they provide a competitive benchmark price for the wholesale supply of electricity. Improving the Standard Products should also flow through to Customised Products as the Standard Products provide a benchmark for negotiation of Customised Products.

The evidence strongly supports the conclusion that the key to improving the Standard Products is determining the right level of spread between the Standard Product buy and sell prices. Setting the buy-sell spread for Standard Products incentivises Synergy not to overprice its sell price, because if it does it is exposed to the risk that it may have to also buy energy at higher prices.

In relation to the Standard Products, the ERA recommends the buy-sell spread should be reset with reference to the volatility of the STEM, on the basis that the Standard Product Sell product reflects the forecast mean STEM price for the relevant period plus a risk margin to account for market volatility. Setting the spread in this way ensures Synergy has a reasonable chance to profit from its trades in a very illiquid market. The ERA has estimated this would require a spread of around 10 per cent.

The revised spread should be retained for a suitable period to enable the impact of the change to be assessed, particularly in relation to whether it increases the level of trade in Standard and Customised Products (i.e. liquidity). The ERA suggests a minimum twelve month period and maximum 24 month period may be most appropriate, to provide sufficient time for any changes to impact on the market and for a review to be undertaken. Depending on the outcome of that review, a cautious approach of gradually tightening the spread to a

lower level to improve liquidity, whilst ensuring Synergy's risk position is reasonable¹⁵ could then be phased in over a period of time.

In relation to the business unit financial reports, the ERA recommends the Scheme include more detailed specification of the segment reporting requirements to ensure they are prepared on a consistent basis and provide sufficient information in relation to the allocation of costs between business units, including demonstrating there are no cross subsidies.

In developing these requirements, the ERA acknowledges there will need to be an appropriate balance between transparency and the cost of preparing the information. The ERA also recognises information sensitive to Synergy's commercial operations will need to be adequately protected. This could be managed by including specification of a confidential and public version of the information. The following should be considered when developing the requirements:

- The Scheme reporting requirements should only relate to the electricity activities of the segregated business units at a company level (i.e. exclude the gas retail business and any subsidiaries or joint ventures).
- The Scheme reporting requirements should ensure contestable and non-contestable retail segments are reported on separately.
- The Scheme should require Synergy to follow general principles in relation to cost allocation. For example, the Scheme would specify that costs directly attributable to a business unit must be allocated accordingly and costs not directly attributable should be allocated using a method that is publicly available to be scrutinised.
- Increasing transparency of the transfer pricing arrangements between the GBU, WBU and RBU.

As set out in its report last year, the ERA also considers:

- The objective should be explicitly stated in the Scheme to provide clarity and remove the potential for other considerations, such as Synergy's financial position, to be given precedence.
- The current compliance reporting arrangements could result in a significant delay between an instance of non-compliance and its identification. Consideration should be given to increasing the frequency of the compliance audits and reporting if this can be done cost effectively.
- Synergy should be required to self-report any non-compliance to the OAG and ERA as soon as it is identified.

Additionally, the process for undertaking the review would be more efficient if the information required for the EGRC review could be collected in conjunction with the information required for the review of the effectiveness of the WEM the ERA is required to conduct under the WEM Rules.

¹⁵ There is a circularity between the level of spread and liquidity. In illiquid markets, wider spreads are needed to compensate traders for their risk. However, in such cases it is often narrower spreads that would be needed in order to promote additional liquidity that would reduce this risk. Determining the "right" level of spread needs to ensure it is adequate to compensate Synergy for its risk, taking account of the actual liquidity of the market, and low enough to encourage more trade i.e. increase liquidity.

As noted in this report, there is an overlap in the two reviews. However, the WEM Rules restrict the information provided under the WEM Rules such that it can only be used for the purposes of the WEM review. Consequently, the ERA needed to collect the necessary data for this EGRC review using its information gathering powers under section 51 of the *Economic Regulation Authority Act 2003*. Amending the WEM rules to enable information to also be used for the EGRC review would simplify and streamline the process for both the ERA and the parties that provide the information, including AEMO.

Assessment of Market Competition

Background

A competitive retail market is dependent on retailers being able to access competitive wholesale energy supplies. In turn, a competitive wholesale energy market is underpinned by a range of retailers seeking wholesale supplies. The effectiveness of competition in either market is impacted by the other.

As the EGRC Scheme is intended to ensure that Synergy does not discriminate between its own retail business and third party competitors, the level of competition in the wholesale and retail sector can provide some indication of the effectiveness of the EGRC Scheme. The ERA has reviewed the current level of competition in both the wholesale and retail markets. This review overlaps with the ERA's requirements under the Wholesale Electricity Market Rules to monitor the effectiveness of the market in meeting the Market Objectives.

To undertake its assessment the ERA has reviewed market data and information from stakeholders, in particular from Synergy, Western Power and the AEMO.

Energy Market

The Wholesale Electricity Market provides a means for the sale of electricity by generators and the purchase of wholesale electricity by retailers. This occurs through bilateral contracts between generators and retailers, and through the STEM and Balancing markets.

Many generators and retailers enter into bilateral contracts for the sale and purchase of electricity. Electricity generated beyond the bilateral contracts between generators and retailers can be sold through the Short Term Energy Market, which is a day ahead market for electricity.

Any imbalance in a participants energy demand or supply after bilateral contracts and STEM sales and purchases, is settled in the Balancing Market. For example, if a retailer is short in energy after bilateral contracts and STEM purchases, it will purchase the required energy through the Balancing Market. Likewise, if a generator is long in energy after bilateral contracts and STEM sales, it will sell its remaining energy through the Balancing Market.

Market participants can be grouped into four main categories:

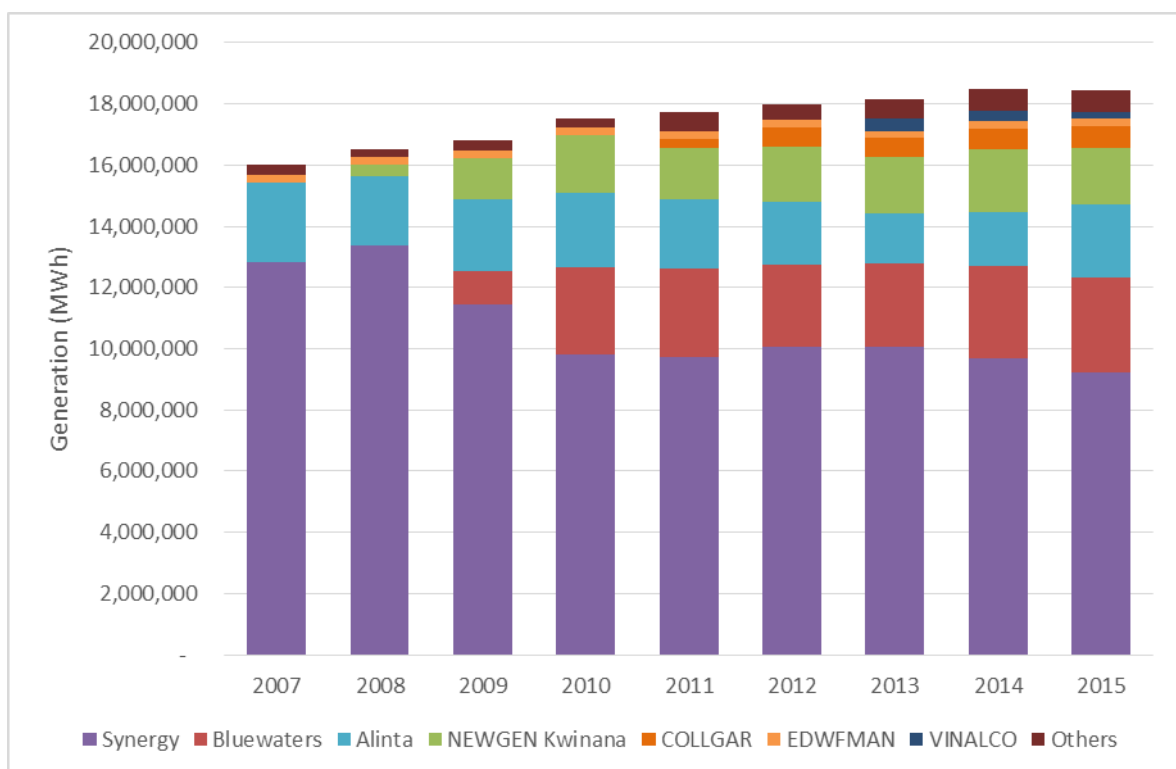
- Getailers, which are integrated generators and retailers that generate electricity as well as sell directly to retail customers. These include Synergy, Alinta, Perth Energy, and Bluewaters Power¹⁶.

¹⁶ Bluewaters Power was previously known as Griffin Power, but changed its name to Bluewaters Power in April 2013 following a change in ownership after the previous owners went into liquidation.

- Retailers that purchase wholesale electricity and sell to retail customers. These include Premier Power¹⁷, ERM Power, and a number of small 'boutique' retailers (Amanda Energy, AER Retail, A-Star, Blue Star, Southern Cross Energy¹⁸ and Community Electricity).
- Generators that produce electricity and sell to the wholesale market. These include Newgen Kwinana, the Collgar and Emu Downs windfarms, and Vinalco.
- Large users that directly purchase wholesale electricity for their own use including Karara, and the Water Corporation. Some direct purchasers also generate electricity including Tiwest, Newmont Mining and Alcoa.

Figure 1 shows total generation by market participant since the market commenced.

Figure 1 Generation by market participant.



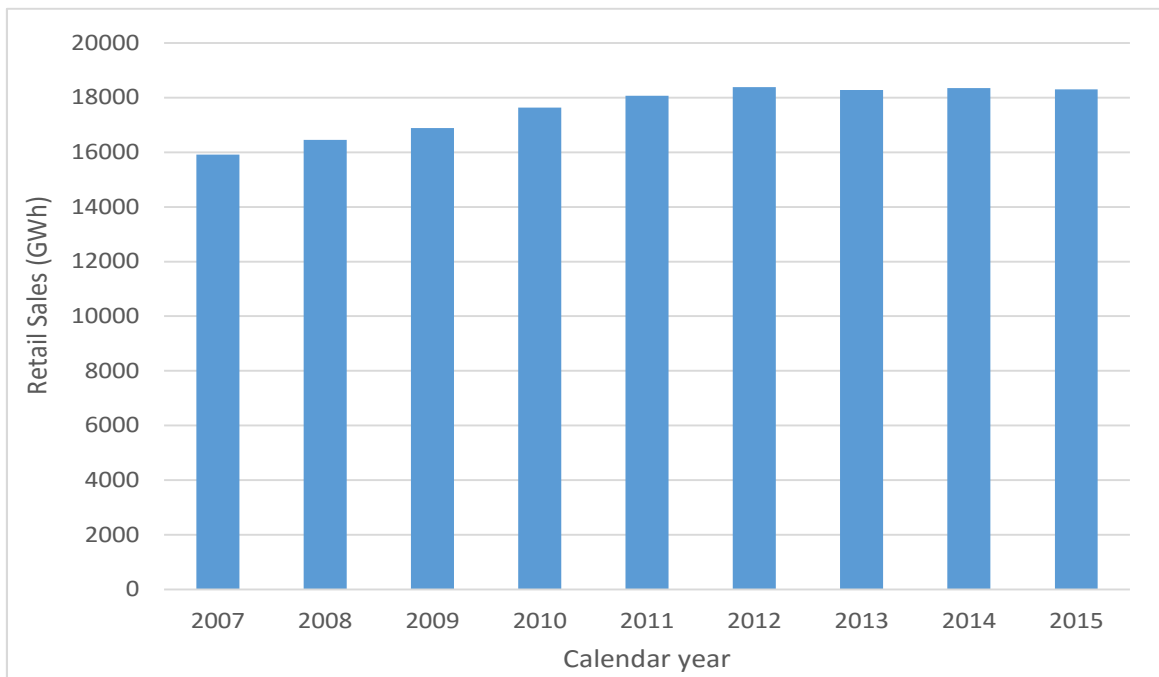
Source: Australian Energy Market Operator, ERA Analysis

Synergy continues to provide the largest quantity of generation, albeit reduced from around 80 per cent in 2007 to around 50 per cent in 2015. Collectively gentailers account for around 80 per cent of all generation. Of these, Synergy is the largest, with Alinta and Bluewaters also substantial producers. The remainder of market generation is produced by standalone generators, of which NewGen Kwinana produces the greatest quantity.

Figure 2 provides a breakdown of energy consumption by market participant since the market commenced.

¹⁷ A transfer of license from Premier Power to Wesfarmers Kleenheat Gas Pty Ltd occurred on 1 July 2015, with amendment of the license to authorise supply to small use customers.

¹⁸ Southern Cross Energy provides electricity to a small number of mining companies.

Figure 2 Electricity end use retail and consumption (aggregated)

Source: Australian Energy Market Operator, ERA Analysis

These figures include the total retail market (contestable and non-contestable). Since market start, the non-contestable segment of the retail market has declined by 20 per cent. This decline has been more than offset by a 68 per cent increase in the contestable segment, resulting in growth in the total retail market of 22 per cent.

Since 2011, total retail market consumption has been relatively flat, with any growth in contestable volumes or new residential properties offset by reductions in demand over time that can be attributed to the changing behaviour of consumers. This includes the increased use of PV systems, improvements in energy efficiency over time, and changing customer demand in response to price increases.¹⁹

Approximately 85 per cent of the retail market is composed of four gentailers in Synergy, Alinta, Perth Energy and Bluewaters Power. Synergy's market share of the total retail market is ■ per cent (including non-contestable loads). The remainder of the market is split between direct purchasers and retailers.

The retail market is discussed in detail in the following section.

Retail Market

The contestable segment of the retail market consists of customers consuming greater than 50MWh per year. Currently, customers consuming less than 50MWh per year can only be supplied by Synergy. However, the Government has signalled its intent to introduce full

¹⁹ https://www.treasury.wa.gov.au/uploadedFiles/Treasury/State_finances/2013_14_midyear_review.pdf

retail contestability, which would allow other retailers to compete with Synergy for these customers.²⁰

The contestable retail market has become increasingly competitive since the introduction of the WEM in 2006. This is evidenced by many new retailers, particularly in the last few years, successfully entering the market.

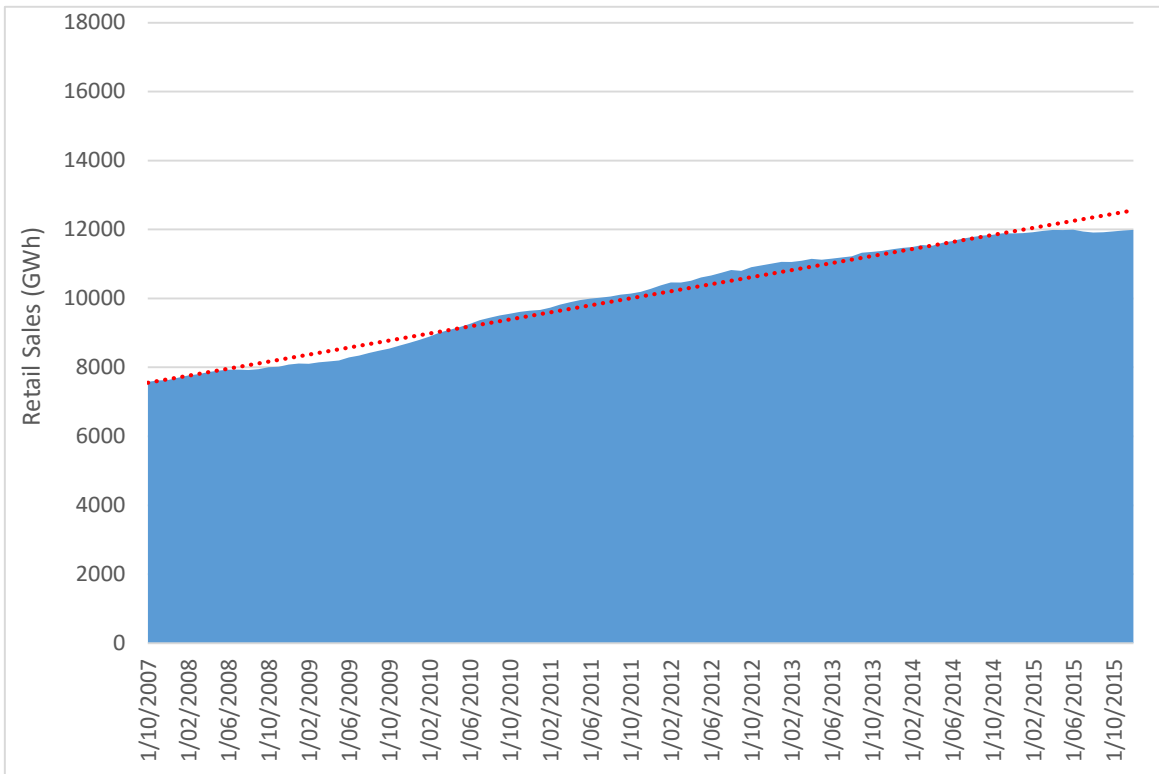
The ERA has considered the extent of competition in the retail market to inform and provide context to this report. In particular, the ERA is interested in how competition in the retail market has progressed or changed since the merger of Verve and Synergy in January 2014. This section of the report provides a summary of analysis of the contestable segment of the retail market.

Overview

The size and composition of the contestable retail market over time is shown in Figure 3 below. This figure is based on participant consumption data obtained from the Australian Energy Market Operator (**AEMO**) covering the period from 2006 to 2015. It is presented as a twelve-month rolling total to reduce distortions from seasonal effects and one off changes. However, using the twelve month rolling total may cause changes in retailer sales (for example, when a retailer enters the market) to appear slower than may have occurred in the first 12 months of data.

In this analysis, the ERA has defined retailers with less than 3 per cent market share as “small retailers”.

²⁰ <https://www.mediastatements.wa.gov.au/Pages/Barnett/2015/03/Government-energised-for-electricity-reform.aspx>

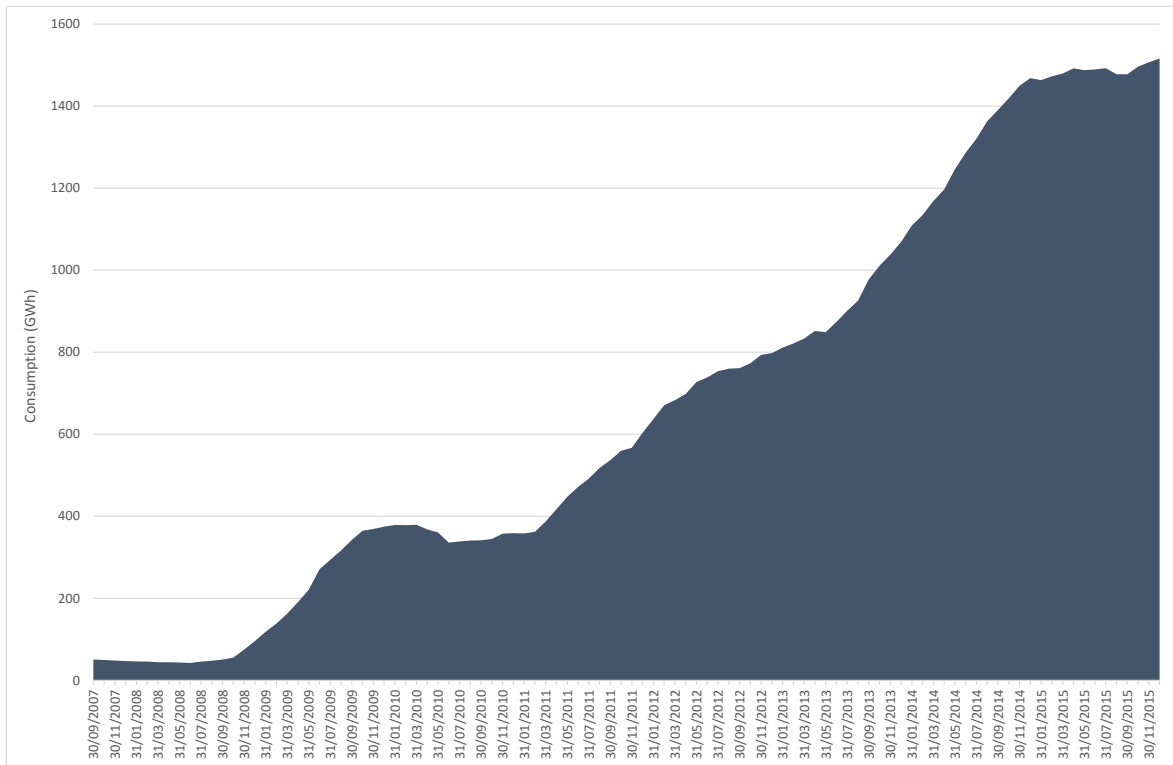
Figure 3 Contestable market sales (12-month rolling total) (aggregated)

Source: Australian Energy Market Operator, ERA Analysis

The contestable segment of the retail market has increased consistently since market start. In recent years, growth has slowed, with the majority of increased sales accounted for by direct purchasers.

The majority of retailers who have successfully entered the market have increased sales relatively quickly following entry and then maintained those sales over time.

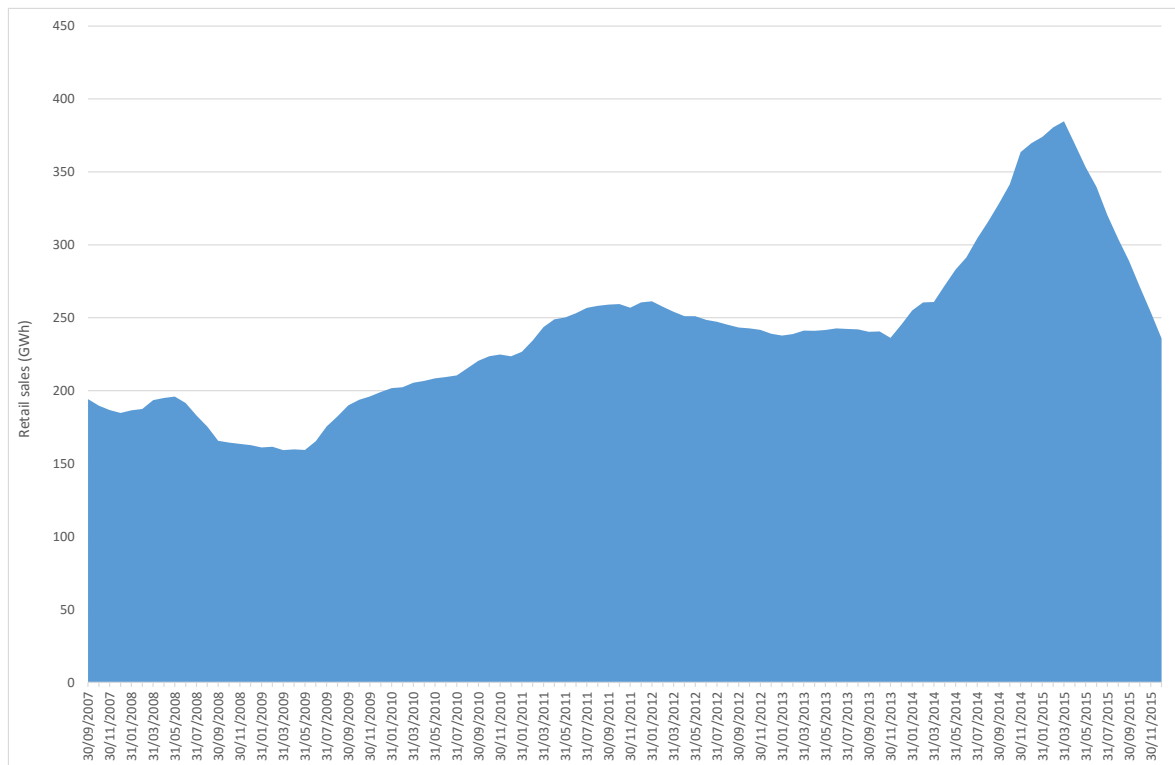
Direct purchaser consumption has increased since market start, with a considerable portion of this increase occurring since 2012. They now represent around 9 per cent of the total contestable market. Direct purchasers do not include PV consumption. Figure 4 shows direct purchaser consumption over time.

Figure 4 Direct purchaser consumption (12-month rolling total)

Source: Australian Energy Market Operator, ERA Analysis

Increased direct purchaser consumption can be attributed to the expansion of the Water Corporation's Southern Seawater Desalination Plant and increased activity at Karara Mining's magnetite operation, which opened in January 2013.

The sales of small retailers have fluctuated over time and have decreased slightly in the period from 2013 to 2015. Figure 5 shows small retailer sales over time.

Figure 5 Small retailer sales (12-month rolling total)

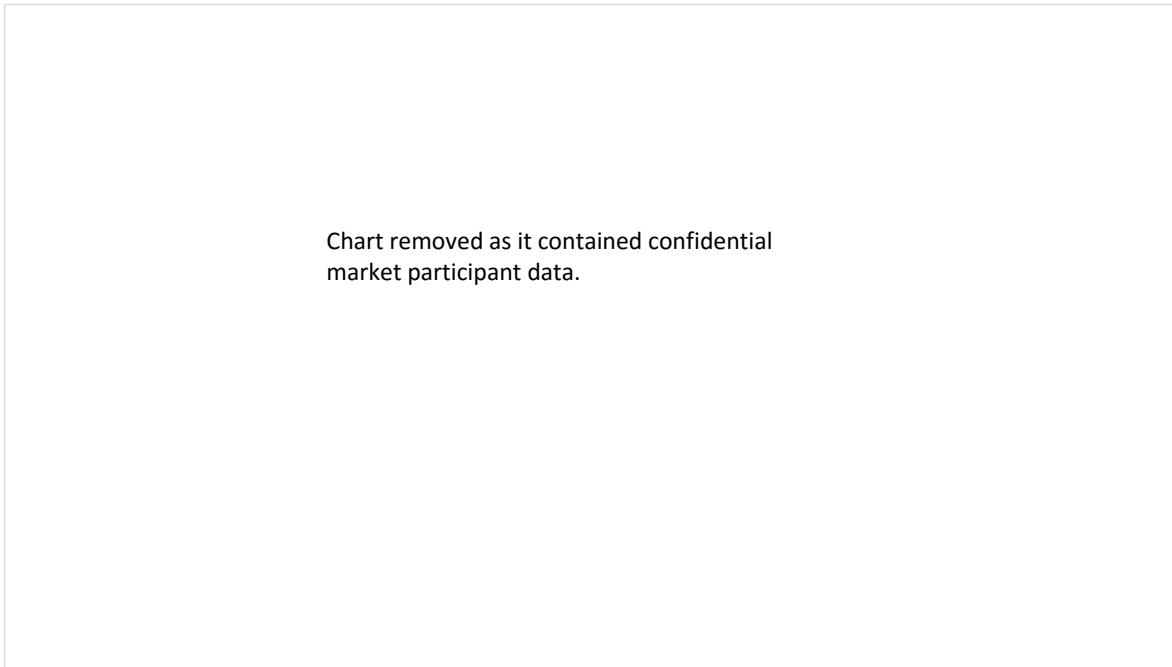
Source: Australian Energy Market Operator, ERA Analysis

The combined sales of small retailers represents a small portion of the contestable market (approximately 2 per cent) and has not increased substantially over time.

Some small retailers have been successful in increasing sales since entering the market in recent years. The majority of increases or decreases in sales for small retailers have been the result of losing customers to, or gaining customers from, large retailers. There has been relatively little exchange between small retailers.

Market share

Synergy's sales, while fluctuating over time, have steadily decreased since market start. Figure 6 shows Synergy's sales in the non-contestable and contestable segments of the market since market start.

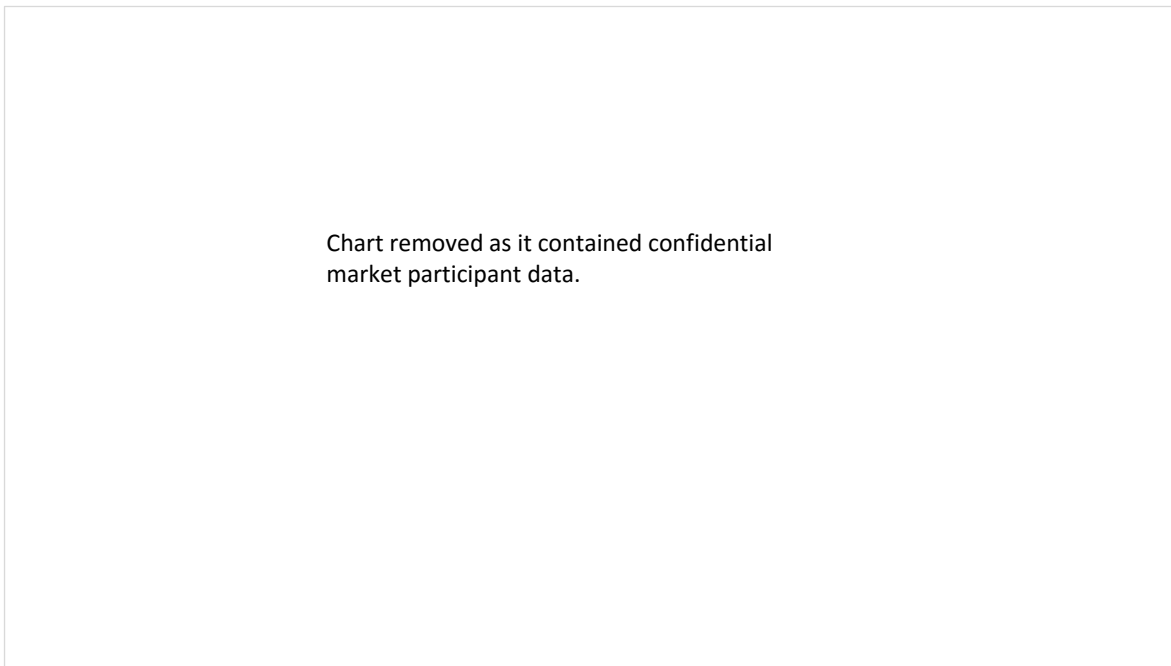
Figure 6 Synergy sales (12-month rolling total)

Source: Australian Energy Market Operator, ERA Analysis

Synergy's sales have decreased over time due to decreased sales in the non-contestable market and loss of market share in the contestable segment of the market.

Synergy's non-contestable sales have decreased at a greater rate than its contestable sales. Non-contestable sales have decreased by ■ per cent since market start and its contestable sales have decreased ■ per cent in the same time. Synergy's total sales have decreased by ■ per cent. This decline is not confined to the period following the merger; it represents a consistent downward trend since market start.

Figure 7 below illustrates that Synergy's decline in sales was predictable even when the merger is not considered.

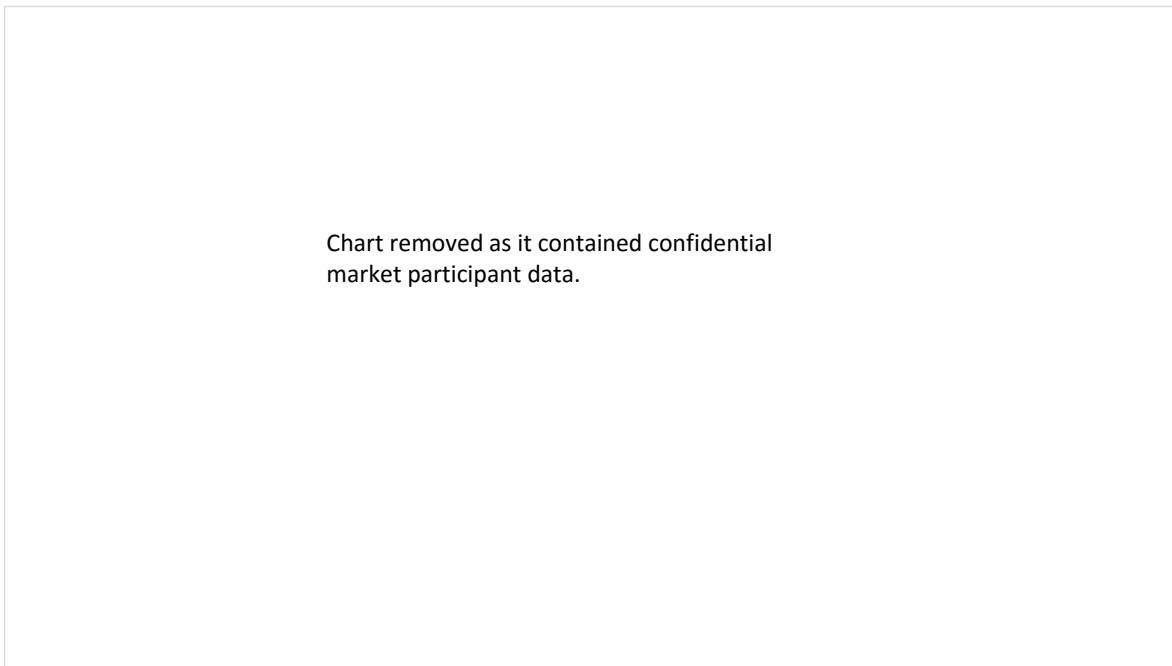
Figure 7 Synergy retail sales and forecast retail sales 2007 to 2015

Source: Australian Energy Market Operator, ERA Analysis

The time series forecast equation uses data from 2007 to 2013 to forecast Synergy's retail sales from the start of 2014 to the start of 2016.²¹ The graph shows that Synergy's retail sales after 1 January 2014 differs little to what was expected on the basis of Synergy's sales from the period 1 January 2007 to 31 December 2013.

Some of this decrease is the result of customers in the contestable retail market transferring to competing retailers. Figure 8 provides net NMI transfers to Synergy since market start.

²¹ The time series forecast equation is estimated using the classical theoretical model: $Y_t = S_t \times I_t \times T_t$ (time series = seasonality x irregularity x trend). In this analysis, the trend in Synergy's data from the period 1 January 2007 to 31 December 2013 is represented by the equation 'Trend_t = [REDACTED]' with both coefficients highly significant at $p < 0.001$. Synergy's forecast sales (in green) is calculated as seasonality (a factor to adjust for seasonal changes in sales) multiplied by Trend_t to produce the expected sales from 1 January 2014 forward. Synergy's actual sales is plotted against this (in blue) for the entire period.

Figure 8 Synergy's net transfers (NMI)²²

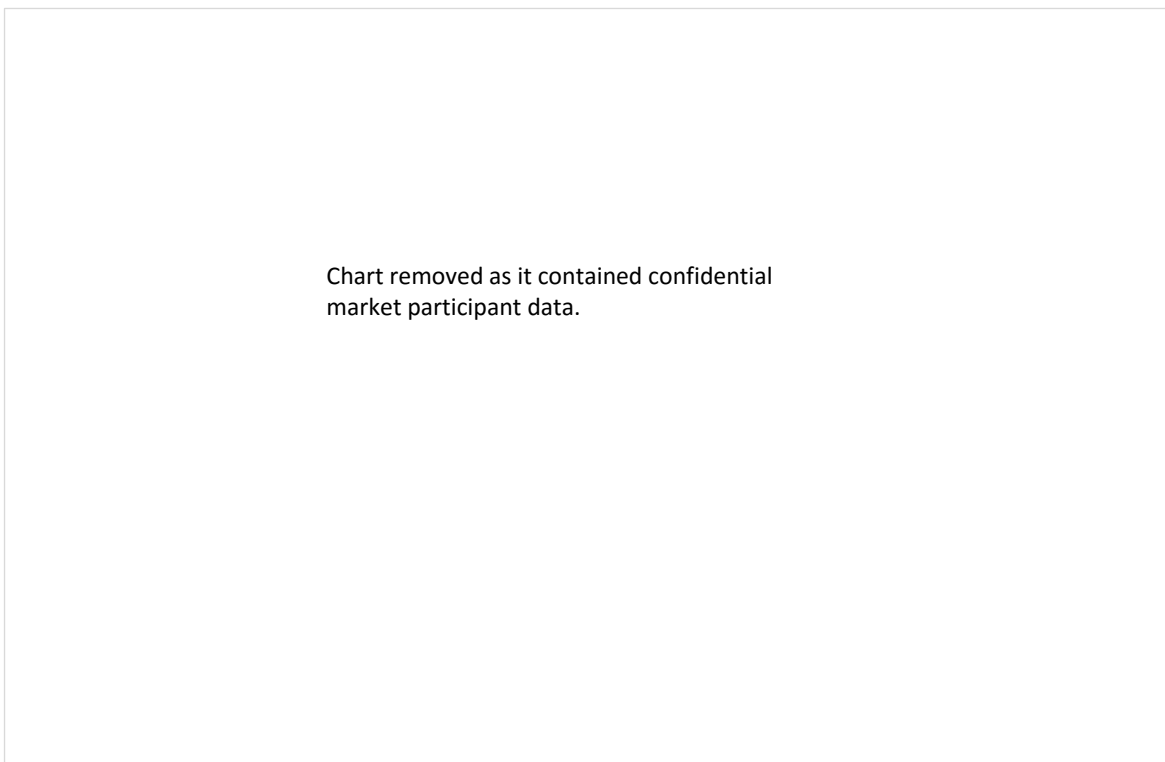
Source: Western Power data provided on request, ERA Analysis.

Synergy has consistently lost more customers to competitors than it has acquired since market start, with the exception of a short period in late 2012 and early 2013. There are noticeable spikes in transfers to and from Synergy.

The consistent decrease in Synergy's retail sales is reflected in increased retail sales and market share of competing retailers. Figure 9 and Figure 10 show the market shares of retailers in the contestable segment of the retail market for 2013 and 2015 respectively.

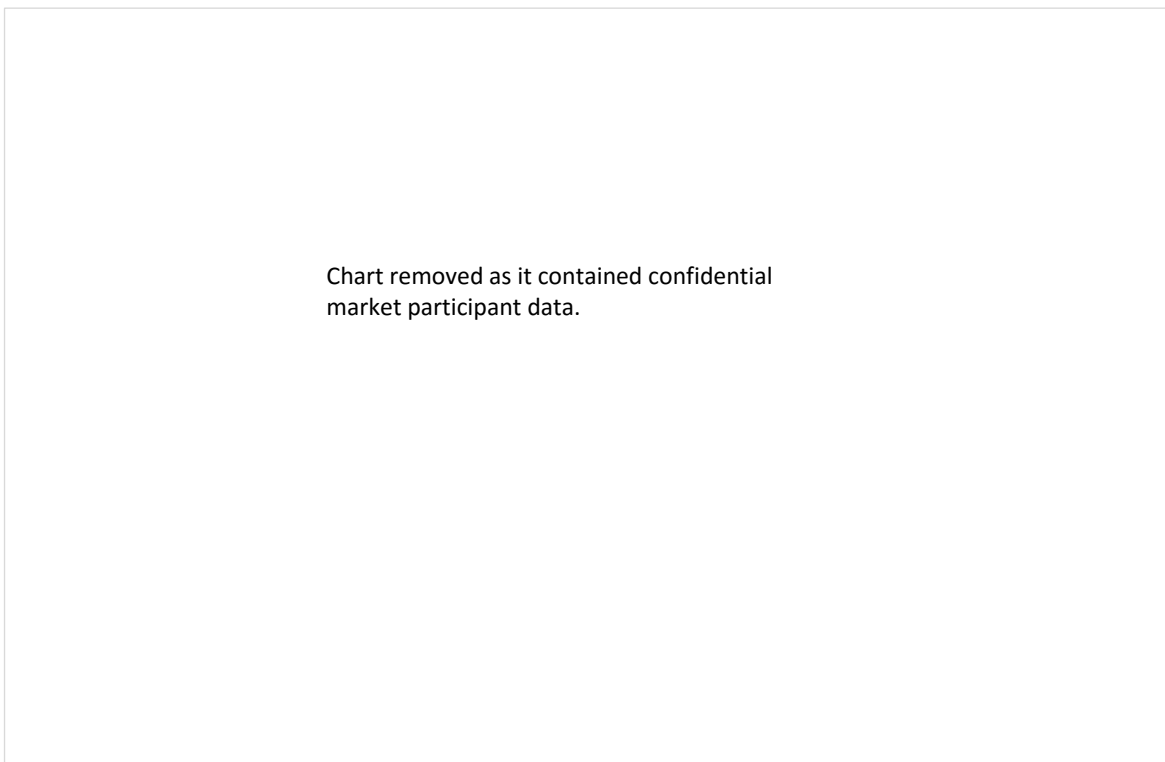
²² The data provided by Western Power provides NMI transfers. As one customer may have several locations, it may present as several NMI transfers. Presenting transfers as NMI does provide some form of proxy for customer size.

Figure 9 Participant contestable market share 2013



Source: Australian Energy Market Operator, ERA Analysis

Figure 10 Participant contestable market share 2015



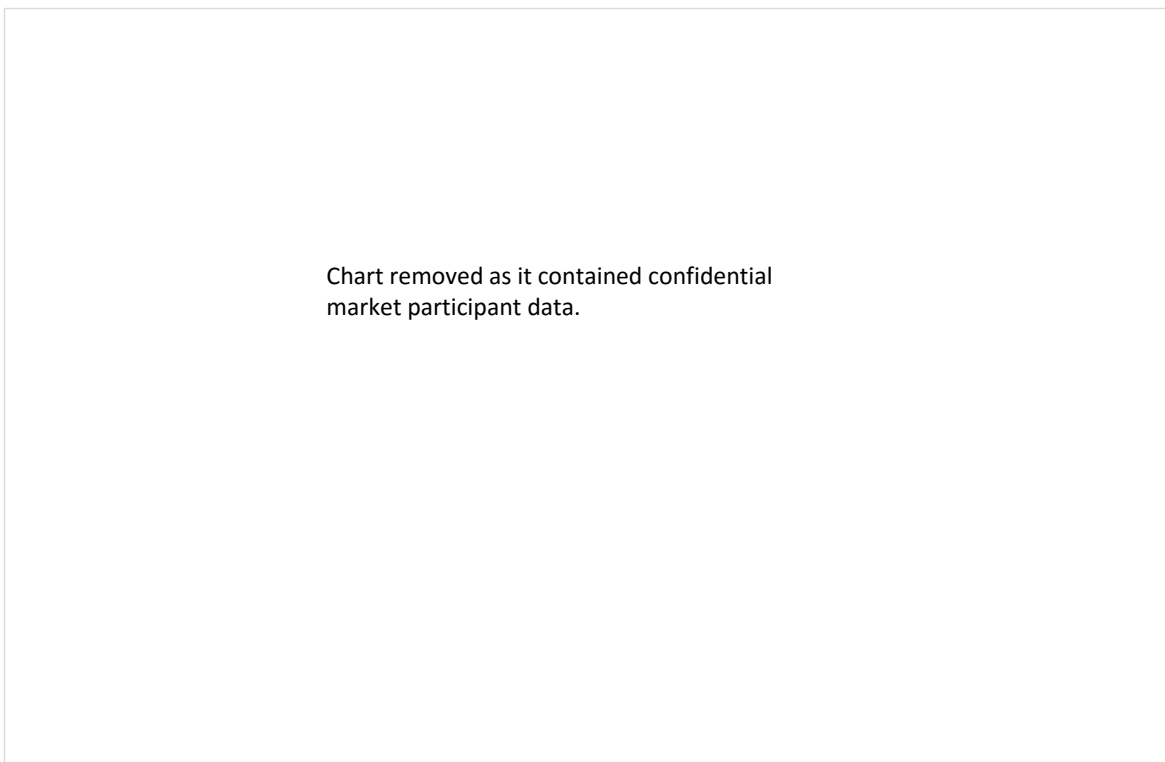
Source: Australian Energy Market Operator, ERA Analysis

Synergy retails to ████████ of the contestable retail market. This represents █████ per cent decrease in market share between 2013 and 2015 (from █████ per cent of the market to █████ per cent of the market).

Direct purchasers account for 13 per cent of the contestable segment of the retail market. However, direct purchasers do not participate in the retail market in the same way as retailers (that is, they purchase electricity directly from the WEM and effectively retail to themselves instead of to customers). For this reason, market shares of traditional retailers only may provide a better indication of the extent of competition in the market.

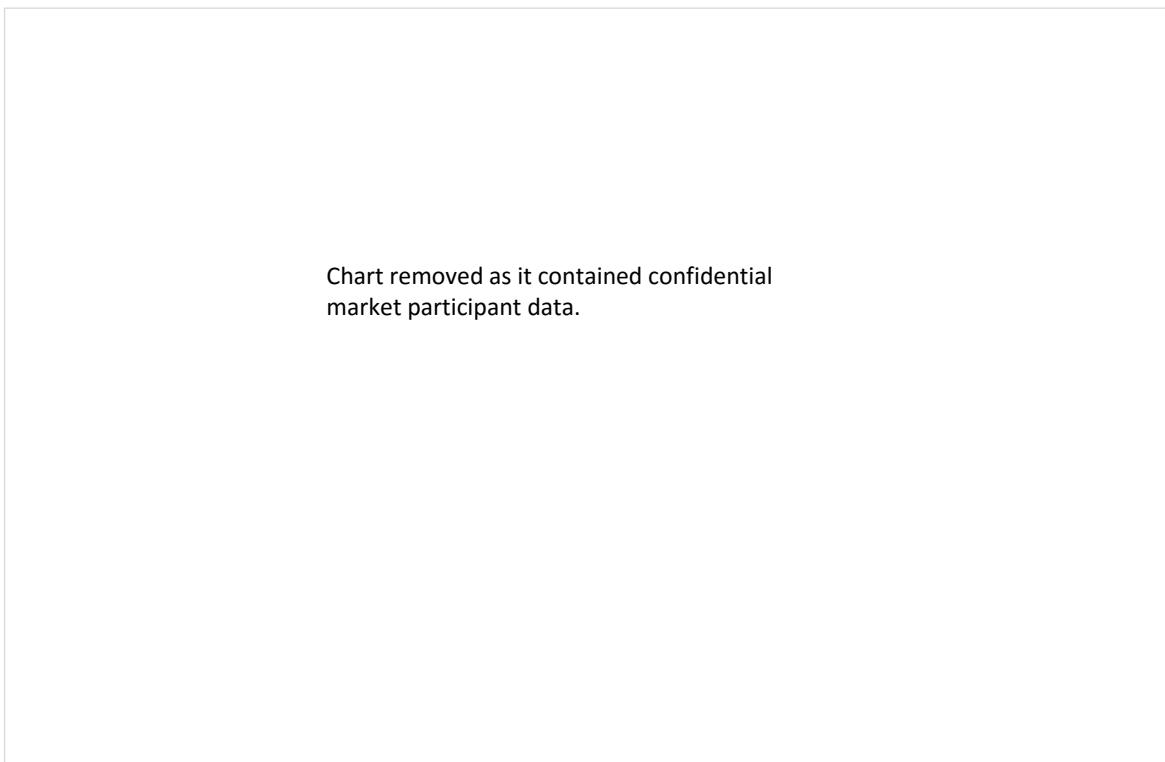
Figure 11 and Figure 12 provide the market shares of retailers in the contestable segment of the retail market, excluding direct purchasers, for 2013 and 2015 respectively.

Figure 11 Participant contestable market share excluding direct purchasers 2013



Source: Australian Energy Market Operator, ERA Analysis

Figure 12 Participant contestable market share excluding direct purchasers 2015

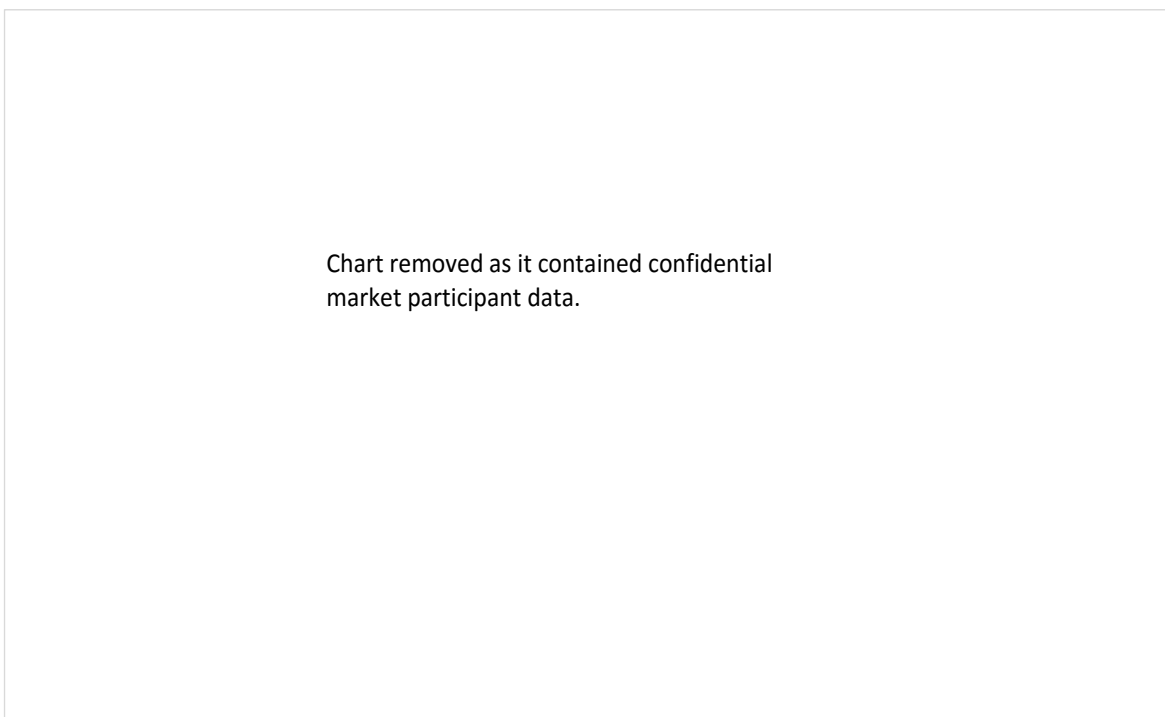


Source: Australian Energy Market Operator, ERA Analysis

When considering the contestable segment of the market without direct purchasers, Synergy's market share is ■ per cent. Its market share has decreased in the last two years from ■ per cent in 2013. This is reflective of the long-term trend, which has seen Synergy's market share decrease ■ per cent since market start, when it supplied ■ per cent of the contestable segment of the market.

Figure 13 shows the change in sales of each retailer in a comparison of calendar years 2013 and 2015, illustrating which retailers have acquired market share from Synergy.

Figure 13 Change in retail sales 2013 to 2015



Source: Australian Energy Market Operator, ERA Analysis

The majority of the fall in Synergy's retail sales has accrued to other large retailers. Some of the change in sales for retailers can be attributed to growth in demand or the acquisition of new customers.

The competition of the retail market is affected by the wholesale market. The prevailing conditions in the wholesale market affect the ability of retailers to access electricity and the price at which retailers can access electricity. At times when there is an oversupply of electricity, retailers may be able to access cheap electricity through the STEM and Balancing markets, allowing them to compete effectively. The ERA's assessment of competition in the wholesale market is discussed in the following section.

Wholesale Market

Retailers of electricity purchase or generate electricity in the wholesale market which they on-sell to customers. Within the wholesale market, retailers can purchase electricity through three mechanisms, which are:

- bilateral contracts with other participants,

- the day ahead Short Term Energy Market (**STEM**), and
- the real time Balancing Market.

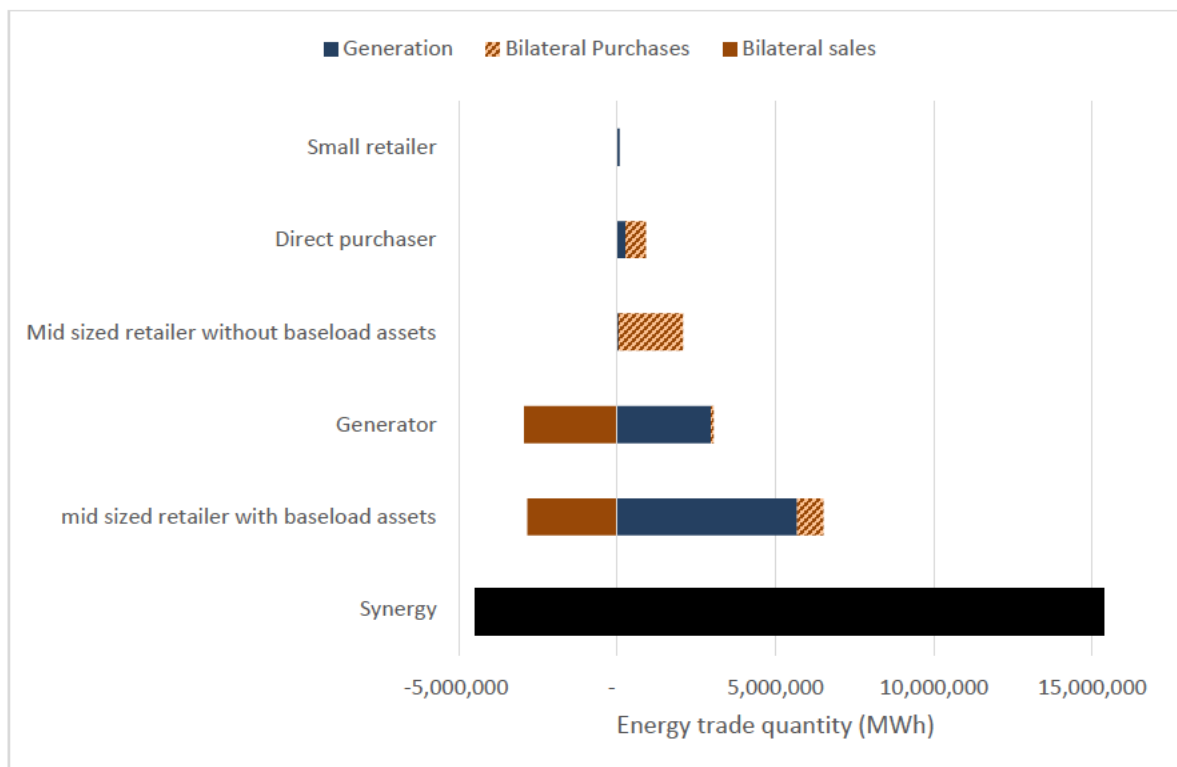
Market participants will trade through each of these mechanisms depending on their assets, and their contracting preferences.²³

Figure 14, Figure 15 and Figure 16 provide a breakdown of how gentailers and retailers sourced and sold their energy in 2015. Figure 14 and Figure 15 present the same data as Figure 16. However, they separate bilateral sales and generation from STEM trades and entities' net balancing positions to better show the supply and disposal positions of different market participants.²⁴ Please note differences in chart scale.

Mid to large gentailers [REDACTED] source the majority of their energy from their own generation plant and to a lesser extent bilateral supply contracts. [REDACTED]

[REDACTED] Gentailers' net balancing positions indicate they collectively sold a substantial amount of electricity through the Balancing Market. Smaller retailers' net balancing position indicate they source a substantial proportion of their supply through the Balancing Market.

Figure 14: Bilateral and generation supply positions by market participant (2015)



Synergy's net balancing position indicates [REDACTED] Balancing Market (Figure 15). This figure is a net position comprising Synergy's

²³ Most, but not all bilateral purchasing arrangements are declared to the market operator. Some of the charts presented in this section adjust for the ex-market bilateral contracts where there is certainty of the traded volumes and recipients.

²⁴ The charts presented in this section referring to the 'net balancing position' indicates the generator or retailers' net positions after accounting for bilateral and STEM sales and supplies. Total balancing sales and purchase volumes are not presented

generation and retail arms. Synergy's Retail Business Unit can purchase electricity at the Balancing Market price through the internal nomination process with the WBU.

Figure 15: STEM sales and purchases and net balancing position by market participant (2015)

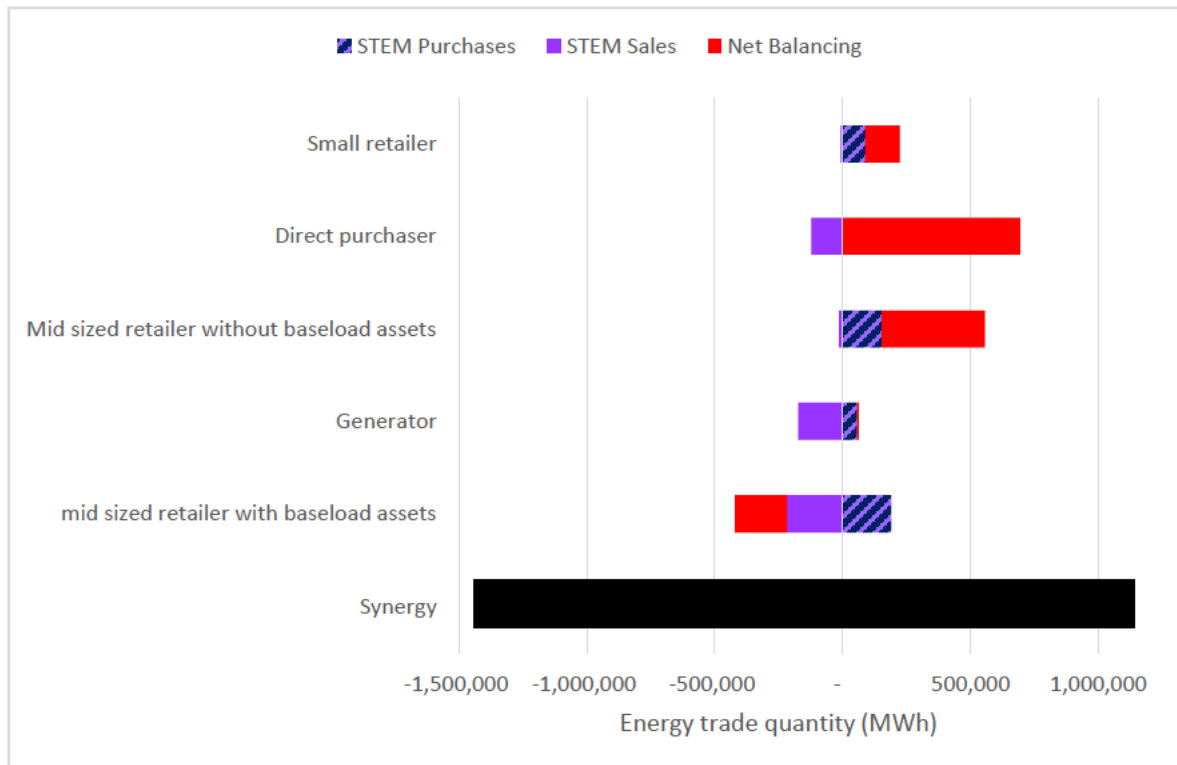
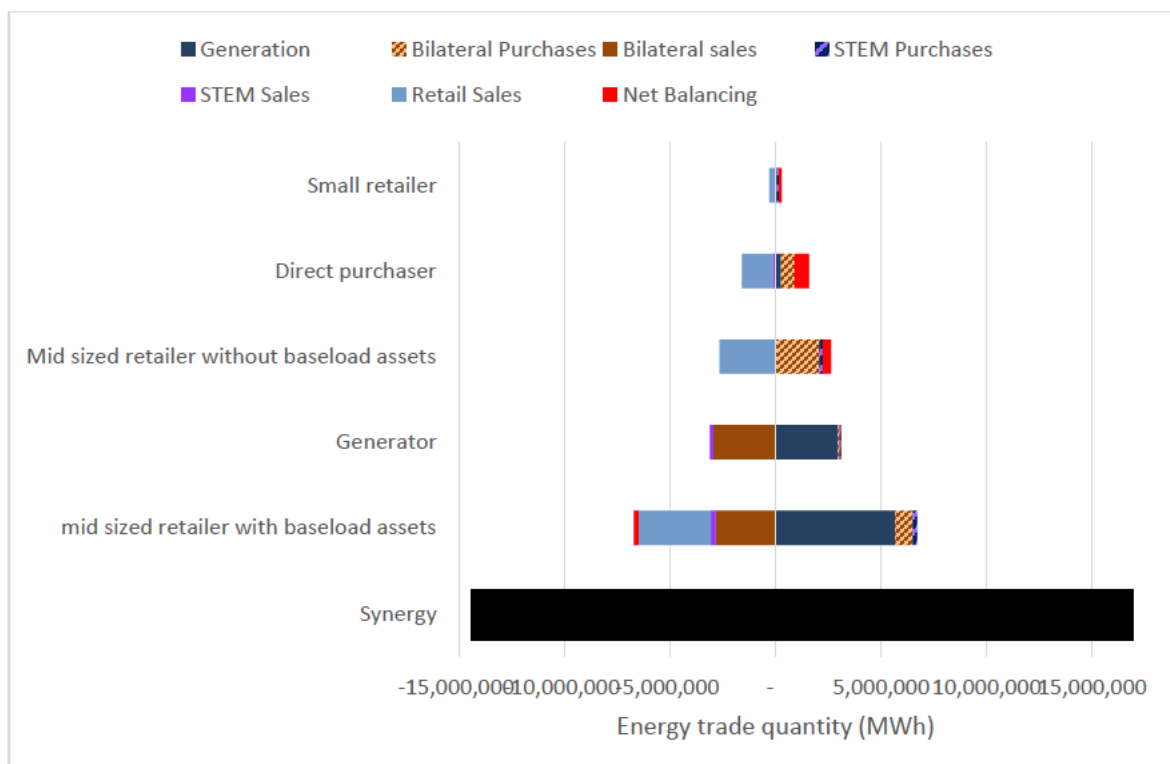


Figure 17 shows the combined supply, disposal and net balancing position for market participants in 2015. Self-supply (i.e. generation units supplying retail units within a vertically integrated entity) and bilateral contracts are the main retail supply mechanisms for larger entities. Smaller entities are more reliant on the STEM and balancing mechanisms for their supply.

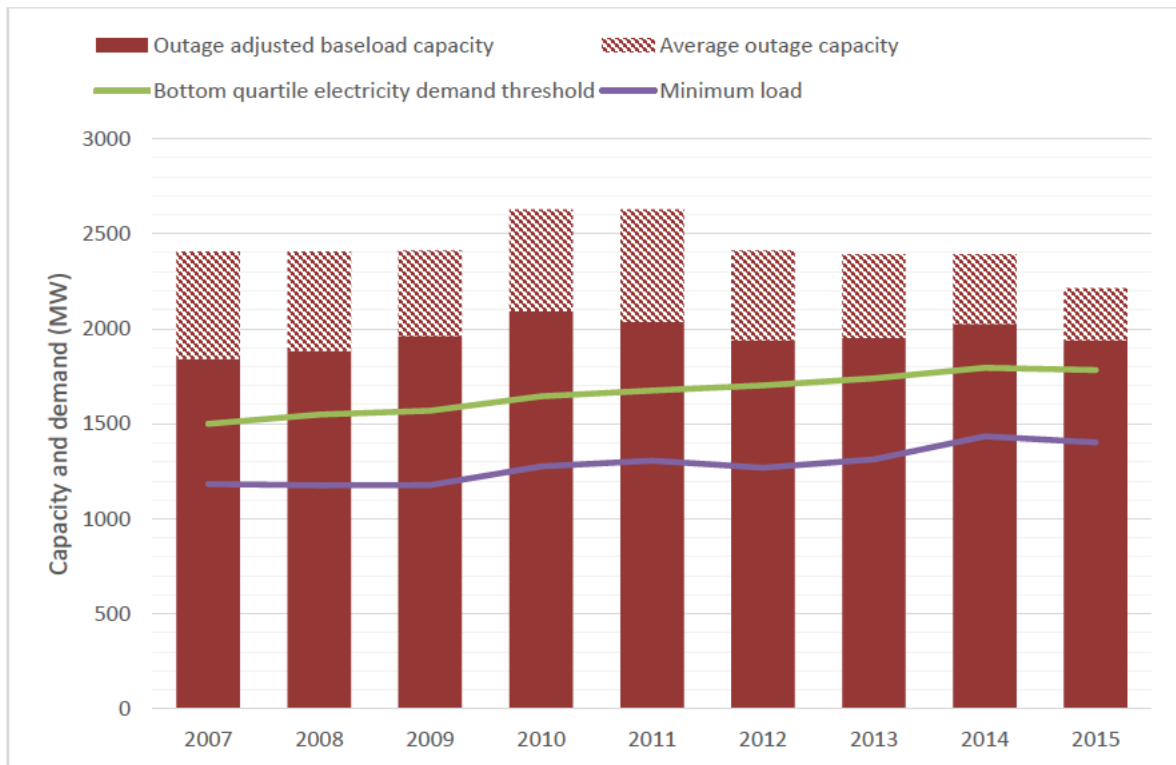
Figure 16: Combined electricity supply and disposal by market participant (2015)

Baseload plant is that required to operate to service loads on an 'around the clock basis' and typically comprise large thermal plant operated to maximise efficiency at low cost.²⁵ Intermittent (unscheduled or semi scheduled renewable) generators also fall into this generation role, with coal fired thermal plant such as Muja, Collie, Kwinana and Bluewaters 1 and 2. Additionally, industrial cogeneration facilities service thermal loads at downstream minerals processing facilities, such as those at Alcoa's and BHP's alumina refineries.

The WEM has a capacity over supply at the upper and lower end of the merit order. Excess baseload generation not only potentially suppresses prices during periods of low demand but may also reduce the operational use of mid merit generation. This is seen with the capacity factor for the Cockburn combined cycle power station reducing from around 75% in 2007 to under 25% in 2015.

After accounting for the average *ex post* planned and forced outage rates, there is substantially more baseload, cogeneration and non-scheduled generation capacity than is needed to meet baseload duty (Figure 17). In absolute terms, baseload generation capacity exceeded the bottom quartile of demand by around 65% in 2007 to 30% in 2015. After accounting for outages, this was around 27% in 2007 and 15% in 2015.

²⁵ Energy Information Administration, Glossary, US Department of Energy, Viewed on 2 June 2016, <http://www.eia.gov/tools/glossary/index.cfm?id=B>

Figure 17 Baseload generation capacity and demand²⁶

Source: Australian Energy Market Operator, ERA Analysis

The excess baseload capacity has declined over the life of the market with plant retirement. This was partially offset by decreases in outages and additional non-scheduled generation.

The remaining excess capacity has resulted in greater availability of energy in the STEM and Balancing markets at lower and more stable prices.

Generators will receive revenue from either the Balancing Market or STEM for uncontracted output.

A number of retailers, [REDACTED] are electing to purchase energy in the STEM and Balancing markets, rather than enter into bilateral contracts with Synergy's wholesale business unit.²⁷

This situation has arisen largely because Synergy has more energy than it can sell to its own customers, with its excess volumes flowing into the STEM and Balancing markets, where it must be offered in at short run marginal cost (SRMC)²⁸.

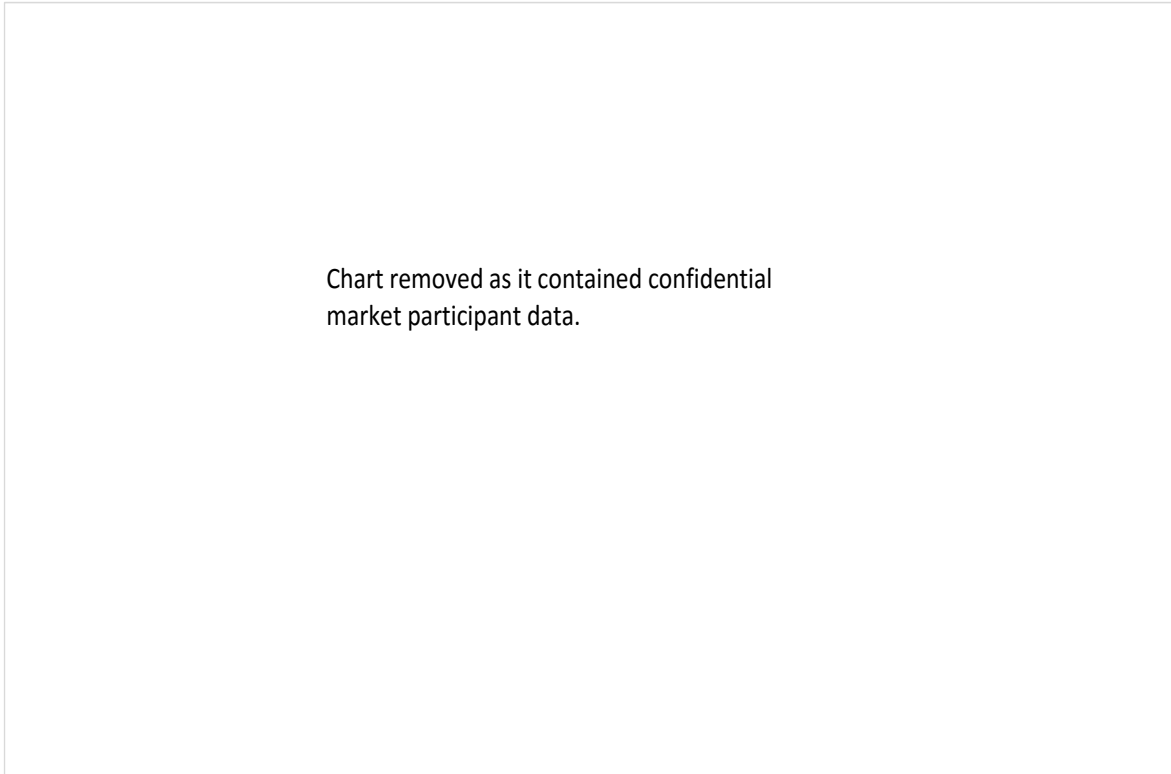
²⁶ In this chart 'baseload generation' capacity includes the installed capacity for large thermal plant installed to service baseload generation requirements, industrial cogeneration plant and the capacity credits from non-scheduled generation from wind and landfill gas.

²⁷ During the period between January 2014 and November 2015, of the [REDACTED] requests for quotation submitted to Synergy, only [REDACTED] took up the contract offered. [REDACTED] In relation to the Standard Products, there have only been 9 sell transactions in total to [REDACTED].

²⁸ The Market Rules SRMC bidding requirement is necessary to ensure generators are not able to take advantage of any market power they may have.

As a substantial owner and contractor of baseload and mid-merit generation, Synergy's position has a significant effect on energy supply and its corresponding impact on STEM and Balancing price volatility. Figure 18 shows Synergy's consolidated supply and demand position.

Figure 18 Synergy's supply and demand position consolidated



Source: Australian Energy Market Operator, ERA Analysis

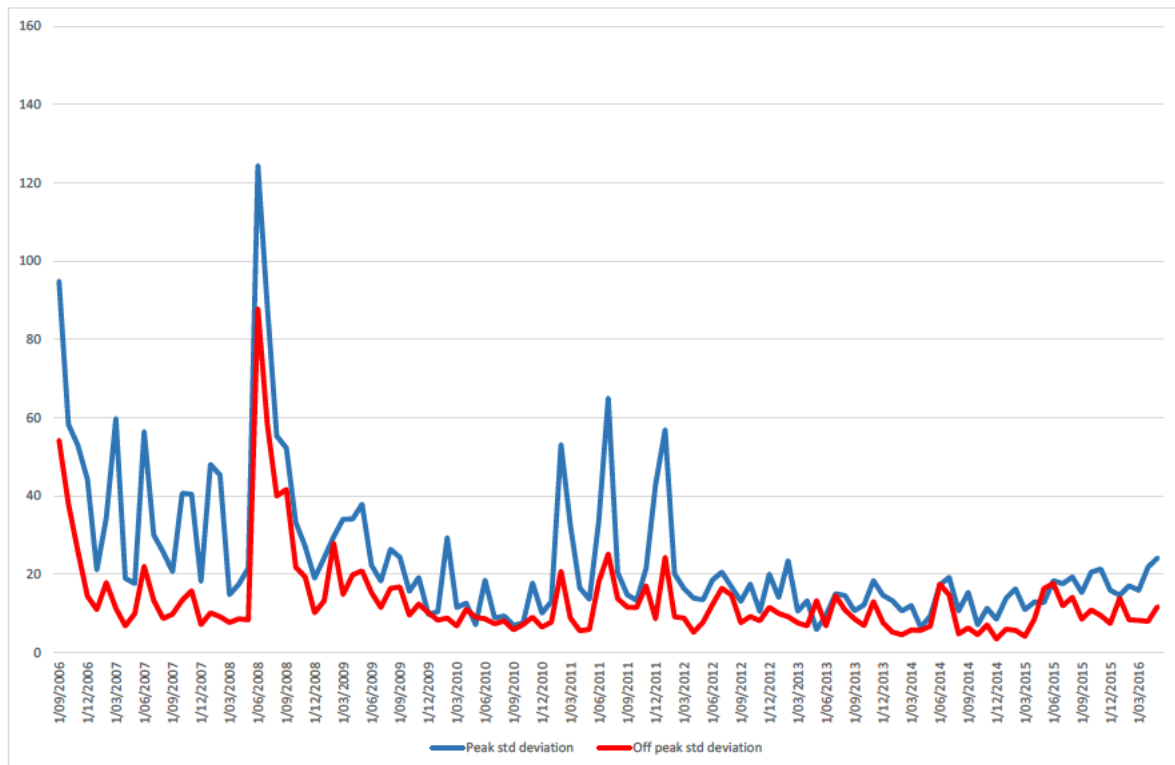
Synergy has been 'long in energy' (that is, its generation and bilateral contract purchases exceed its retail sales and bilateral contract sales) [REDACTED]. The gap between the 'merged sales position' and the top of the 'Synergy generation' segment is Synergy's excess of energy. This energy is sold through the STEM or Balancing markets. [REDACTED]

It would appear that Synergy has excess energy for two reasons. On the demand side, Synergy's sales have reduced because of increasing energy efficiency, price response and PV penetration. It has also lost contestable retail market share to competitors. On the supply side however, the generation and bilateral energy purchases of Verve and Synergy combined have remained relatively constant since the market commenced. As a consequence, Synergy purchases and generates more energy than it is currently selling to its retail and wholesale customers.

The period in which Synergy has been long in generation coincides with periods where volatility in STEM and Balancing Market prices has been low.

Figure 19 and Figure 20 provide the standard deviation in prices for the STEM and Marginal Cost Administered Price (MCAP)²⁹/Balancing markets respectively. Standard deviation is a measure of how closely or widely a set of values is dispersed around its mean.³⁰ The higher the standard deviation, the more dispersed the data and, in this context, the more volatile the price.

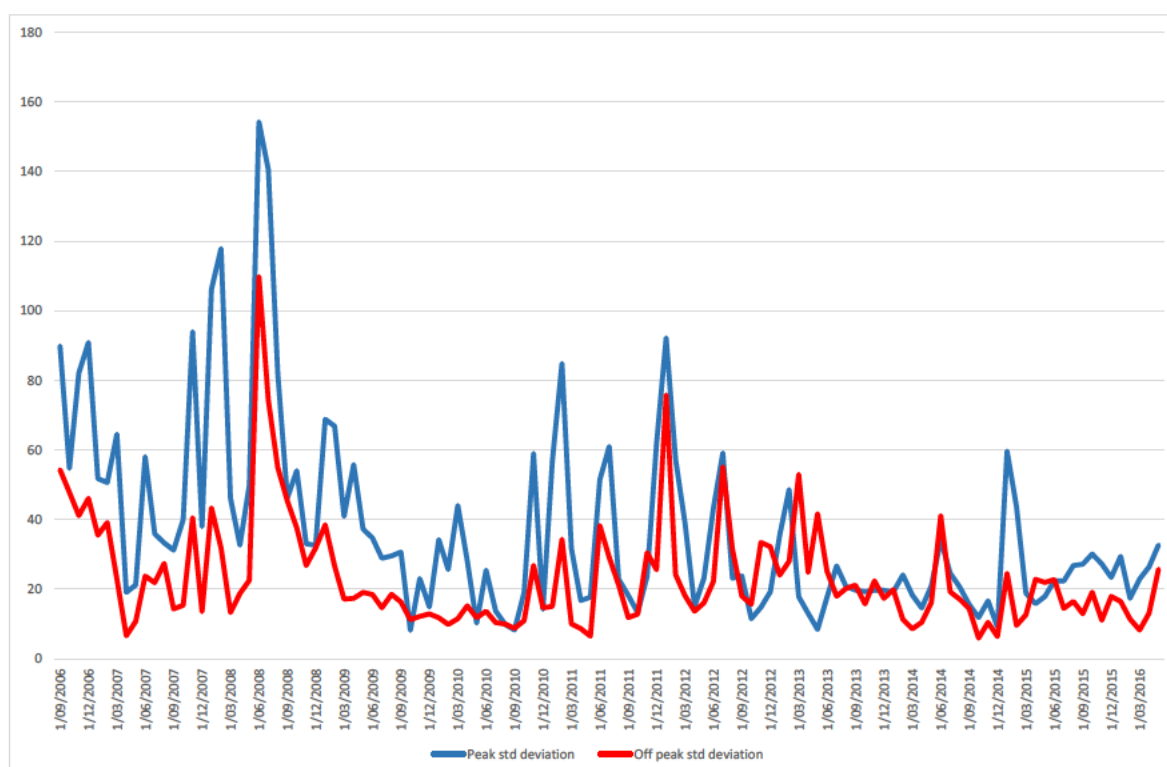
Figure 19 Monthly STEM peak and off-peak price standard deviation



Source: Australian Energy Market Operator, ERA Analysis

²⁹ The MCAP was in place from market start to 30 June 2012 when Verve was the default provider for balancing services and was paid the MCAP for providing any balancing energy deviations. The MCAP was replaced by the Balancing Market in July 2012. Data in Figure 20 is MCAP data up to 30 June 2012 and Balancing Market data thereafter.

³⁰ D. Gujarati and D. Porter, *Basic Econometrics*, New York, McGraw-Hill Education, 2009, p. 810.

Figure 20 Monthly MCAP/Balancing market peak and off-peak price standard deviation

Source: Australian Energy Market Operator, ERA Analysis

It is likely these conditions are leading to some retailers preferring to take the risk of exposure to price variations in the STEM and Balancing Market, rather than accept the fixed price energy contracts currently being offered.

Retailers are not forced to enter bilateral contracts for energy as they have viable alternatives to source energy. This is particularly true of small retailers, who sourced the entirety of their energy through the Balancing Market.

The proposed capacity market reforms would be expected to remove excess supply, and therefore the excess energy that is currently suppressing the variability of STEM and Balancing Market prices. If reductions in capacity affect the availability of energy in the STEM and Balancing markets, it is likely retailers will have a much greater need for energy contracts to hedge themselves against short-term price variations in STEM and Balancing Market prices. In this situation, the effectiveness of the Scheme in ensuring retailers can access energy contracts from Synergy on fair and reasonable terms becomes much more important.

The Standard Product arrangements, if designed appropriately, with an appropriate spread, could provide the alternative source of energy required by competing retailers to ensure a level playing field.

Conclusions

Competition in the contestable retail market continues to be strong. Synergy's contestable retail sales have decreased consistently since market start, with the exception of some periods, such as late 2012 and early 2013, when Synergy was able to acquire customers

from competitors and increase its sales. The majority of Synergy's lost sales have accrued to other large retailers.

The sales of small retailers have remained relatively stable over time, with some retailers able to increase sales and other small retailers losing sales over time. Most of the losses and gains by small retailers have been the result of customers lost to, or gained from, large retailers, not customers moving between small retailers. Some larger retailers, such as Perth Energy, Premier Power and ERM Power, have successfully entered the market and maintained a reasonable portion of retail sales.

The conditions in the wholesale market affect how other retailers are able to compete with Synergy, through the energy that is available to them in the market. At present, an excess of baseload capacity is resulting in less variable energy prices in the STEM and Balancing Markets than would be likely if the capacity market was more closely balanced. It is likely that these conditions are leading to some retailers choosing to remain unhedged, and taking the risk of exposure to price variations in the STEM and Balancing Market, rather than hedging to mitigate exposure to energy market risk.

It is expected that the proposed capacity market reforms will remove excess supply over the medium term, and as a consequence the excess energy that is currently suppressing the variability of STEM and Balancing Market prices will also be removed. As the capacity market comes more into balance, retailers will have a much greater need for energy contracts to hedge themselves against short term price variations in STEM and Balancing Market prices.

In this situation, the effectiveness of the Scheme in ensuring retailers can access energy contracts from Synergy on fair and reasonable terms, and in particular the Standard Product Regime, becomes much more important.

As discussed further below, to ensure the Scheme's effectiveness, the ERA considers improvements are necessary to the Standard Product Regime so that it provides a competitive benchmark price for the wholesale supply of electricity. Key to improving the Standard Product Regime, is determining the right level of spread between the Standard Product buy and sell prices.

Review of the Effective Operation of the Scheme

As set out in the ERA's report last year, the Scheme does not include an explicit statement of the objective. Consistent with the approach adopted last year, the ERA has assessed the Scheme against its understanding of the objectives based on the *Electricity Corporations Amendment Bill 2013* Explanatory Memorandum and Second Reading Speech.

The ERA considers the overall objective is to mitigate the increased potential for market power, which arises due to the merger, to ensure a level playing field for competitors and new entrants in order to facilitate competition.

In addition to recommending the Scheme's objective be explicitly stated, the ERA in its last review identified a number of specific areas where it considered improvements could be made including:

- The Scheme requires Synergy to ensure that a wholesale supply of electricity is not offered to the RBU on terms and conditions that are, having regard to all relevant circumstances, more favourable than the terms on which a wholesale supply of electricity is offered to retail competitors or generation competitors. The ERA recommended consideration be given to providing more specific guidance in relation to what circumstances should be taken into account and how.
- Currently the audits conducted by the OAG are undertaken every twelve months, which potentially could result in a significant delay between an instance of non-compliance arising and then being reported on. The ERA recommended consideration be given to conducting the audits on a more frequent basis, if this could be done cost effectively, and requiring Synergy to self-report any non-compliance as soon as it is identified.
- Stakeholders raised concerns that the RBU may have access to fuel information that would not be available to other retailers. The ERA recommended reviewing the ring-fencing arrangements to ensure the RBU does not have access to information held by the WBU that is not available to other retailers, to ensure it does not have an unfair competitive advantage.
- Stakeholders raised concerns that Synergy's contestable business could potentially be subsidised through the TAP. The ERA recommended increasing the transparency of the retail price setting process to provide stakeholders with confidence there is no potential for subsidisation of Synergy's contestable business via the TAP.
- Publishing all policies and procedures required under the Scheme.
- Specifying the requirements for the format and publication of the segment reports.

The ERA has updated its assessment of the Scheme taking account of information available since its last review, and feedback from stakeholders in response to the Discussion Paper published on 11 November 2015. In undertaking its review, the ERA has considered how effective the Scheme has been in ensuring:

- third party competitors are able to buy or sell wholesale electricity on the same or similar terms to the RBU or GBU;

- the RBU or GBU does not have access to information that is held by the WBU, that is not available to other retailers or generators, or is not available to them in an easily accessible form or in a timely manner;
- clarity and transparency for market participants; and
- efficient pricing outcomes.

The results of this review are set out below.

Scheme Objective

The *Electricity Corporations Act 2005 (Act)*, which provides the regulation-making head of power for the Scheme, does not include any purpose or objectives in relation to the Scheme. This contrasts with the *Electricity Industry Act 2004*, which both sets out the objectives for the wholesale electricity market and provides the regulation-making head of power for the purpose of establishing the market, including the market rules.

Without the objective being made explicit, there is the potential for other considerations to be given precedence, particularly Synergy's financial position, which negates the effectiveness of the Scheme as a market power mitigation measure.

Alinta's submission considers that a stated objective is necessary to enable the ERA to undertake its review. Alinta also considered that it would benefit the market by providing confidence that regulatory processes are properly targeted, and benefit the Government by providing a higher level of assurance that the Scheme is properly designed to facilitate the Government's requirement of sustainable private sector participation in the electricity market. Alinta supports the ERA's interpretation of the Scheme's objective and notes a level playing field is a "key underpinning of efficient markets and especially relevant in a market where a government owned entity dominates both the wholesale and retail markets segments."

Synergy also agrees that the Regulations should specify the Scheme objectives to enable the effectiveness of the Scheme to be assessed. Synergy notes a statutory review requirement is not a conceptual review of what could or should have been put in place but a review on the effectiveness of what actually has been established by the State Government. Synergy also comments that the Scheme is not designed to ensure private participant's interests are promoted, particularly to the detriment of Synergy's own commercial interests.

The ERA does not consider its interpretation of the objective would lead to third parties' interests being promoted to the detriment of Synergy's commercial interests. A level playing field ensures that Synergy's WBU offers similar wholesale supply terms to third parties and Synergy's RBU, and does not favour either Synergy or third parties.

In relation to Synergy's comments regarding the nature of a statutory review, the ERA considers that an explicit statement of the objective against which the Scheme should be assessed would provide clarity and remove any concerns Synergy may have in regard to the scope of the review.

The ERA understands from discussions with the PUO that including an explicit objective in the Scheme would require it first to be included in the Act. The ERA does not have a view on the best way to incorporate an explicit objective in the Scheme but continues to recommend that doing so is necessary for the reasons outlined above.

Level Playing Field

A key requirement necessary for a level playing field, is to ensure the merged entity does not unduly preference its own retail and generation arms over third party retailers and generators.

Stakeholder submissions to this review have not directly raised concerns that the WBU is favouring the RBU. However, stakeholders are concerned there is a lack of transparency in relation to the wholesale transfer price between the WBU and RBU. Alinta considers it is this [perceived] lack of transparency that has resulted in complaints to the Minister about the pricing behaviour of the RBU, indicating a lack of confidence by retail competitors in the regulatory arrangements, in relation to wholesale pricing arrangements between the WBU and RBU.

The Scheme includes a number of mechanisms to ensure that discrimination does not occur. These include:

- segregation and ring-fencing requirements;
- wholesaling obligations;
- financial segment reporting; and
- a compliance regime.

Each of these is considered below.

Segregation and ring-fencing requirements

The Scheme requires Synergy to divide its operations between generation (GBU), retail (RBU), wholesale (WBU) and shared services (CSS). The ring-fenced WBU is responsible for all wholesale energy trading, including pricing between the GBU and RBU and all wholesale trading with third parties, including trading in the STEM and Balancing markets.

Segregating the business in this way should ensure confidential retail and generation information obtained from third parties when negotiating wholesale energy contracts is not disclosed to Synergy's generation or retail businesses, respectively. This ensures they do not have access to information that is not available to other retailers or generators. As is discussed further below, requiring each business unit to prepare separate financial statements should provide transparency around transfer pricing arrangements between each business unit and the allocation of shared costs.

In the ERA's last review, stakeholders raised concerns that the ring-fencing arrangements were not strong enough to ensure the RBU did not have access to any information that would provide it with an unfair advantage in winning contracts. These concerns related particularly to fuel information. The ERA recommended the ring-fencing arrangements should be reviewed to ensure the retail business did not have access to fuel information, or any other information, held by the WBU that is not available to other retailers.

The ERA notes the OAG's audit in relation to the year ended 31 December 2014 included reference to some ring-fencing issues. Although the audit report did not identify any non-compliance, the OAG made a number of findings

These findings, together with comment from Synergy Management, were set out in the OAG's report and are summarised in the table below.

Regulation	Audit Tests Performed	Findings	Management Comment
[REDACTED]			

The subsequent calendar year audit report for the year ended 31 December 2015 did not identify ongoing concerns in this area and stakeholder submissions have not raised it again as an area of concern. However, given the importance of maintaining appropriate ring-fencing arrangements to ensure confidential information is protected and that the RBU does



not have access to information held by the WBU that other retailers are not able to access, the ERA recommends this area continues to be kept under regular review.

The ERA notes there is only limited information publicly available regarding the activities undertaken by each business unit. This includes the annual reports published on Synergy's website, which provide very broad overviews of Synergy's structure. The ERA considers best regulatory practice would be for Synergy to publish its ring-fencing arrangements, clearly identifying the activities undertaken by each business unit and describing the ring-fencing arrangements in place.

Such a document, coupled with the regular audits undertaken by the OAG, would then provide confidence to the market that confidential information is protected and that the RBU does not have access to information held by the WBU that is not available to other retailers.

Wholesaling obligations

The Scheme requires Synergy to develop and publish a policy setting out standard processes to be followed in offering a wholesale supply of electricity to the RBU and third party retail and generation competitors. Synergy must ensure that the standard processes set out in the policy are not, having regard to all relevant circumstances, more favourable to the RBU than to a retail or generation competitor. The Scheme enables Synergy to remove any information it considers to be commercially sensitive from the published version.

As noted in the ERA's review last year, the Wholesale Supply Policy published by Synergy provides some clarity but still provides Synergy with discretion in determining whether one wholesale supply offering is more or less favourable than another. In its report last year, the ERA noted that, given the level of discretion available to Synergy, there was a risk that it may be able to treat its competitors less favourably and recommended further guidance should be set out in the Scheme to reduce the level of discretion available to Synergy.

In addition to requiring the development and publication of a wholesale supply policy, the Scheme also sets out specific requirements for wholesale supplies between the WBU and RBU, differentiating between:

- wholesale supplies from the WBU to the RBU for customers who are not new contestable customers³¹; and
- wholesale supplies from the WBU to the RBU for new contestable customers.

Wholesale supplies to third party competitors can be either Customised Products, which are negotiated between the WBU and the third party, or Standard Products which are fixed quantities of energy, which Synergy must advertise for sale and purchase at published prices.

Wholesale supplies to the RBU and third parties are considered separately below.

Wholesale supplies to RBU

The Scheme specifies that the transfer price for wholesale supplies from the WBU to the RBU for customers who are not new contestable customers must be set at the foundation

³¹ New contestable customers are defined by the Regulations as being new contestable supplies (or amended existing contestable supplies) which become legally binding after the merger.

transfer price. The requirements for determining the foundation transfer price were specified in the Scheme and are set out in the Foundation Transfer Price Mechanism developed by Synergy which, as required, was provided to the Minister prior to the merger.³² This document is not (and is not required to be) published.

In relation to wholesale supplies from the WBU to the RBU for new contestable customers since the merger, the Scheme requires Synergy to have written arrangements in place setting out the terms and conditions that are to apply to such transactions. These written arrangements (“additional transfer price mechanisms”) must ensure supplies are not offered to the RBU on terms more favourable than to third party competitors, and must also include the procedure for the RBU to make nominations in respect of each Trading Interval, including how any differences between forecast and actual load are dealt with. These documents are not (and are not required to be) published.

Stakeholder submissions expressed concerns regarding a lack of transparency in relation to transfer prices between the WBU and RBU. Alinta also notes it is not clear the extent to which the RBU has actually sought formal wholesale supply offers from WBU and therefore the extent to which the non-discrimination provisions apply to the RBU’s supply portfolio.

The Additional Transfer Price Mechanism and Forecast Obligations (related to additional load) are required under clauses four and five of the *Segregation and Transfer Pricing Guidelines 2013*. Alinta requested that the ERA consider whether the transparency benefits to the market as a whole from requiring Synergy to publish documents and records related to the Additional Transfer Price Mechanism and Forecast Obligations, would outweigh the cost of the loss of confidentiality in regard to Synergy’s operations in the contestable market segment.

ERM noted the suggestion it made during the last review, that the Scheme should be amended to ensure Synergy’s retail arm is sourcing supply from the WBU to ensure there are no distortions in the market. ERM still considers the regulations should be changed to ensure the RBU always seeks a price from the WBU, and that that price should be made available to other retailers. It considers this would improve transparency in the market and reduce the potential for the misuse of market power.

In relation to wholesale energy transactions between the WBU and the RBU, the ERA’s understanding of the arrangements Synergy has put in place is as follows:

- energy for non-contestable and pre-merger contestable customers (foundation customers) is supplied by the WBU at the Foundation Price³³; and
- energy for contestable customers acquired since the merger, or pre-existing contestable customers whose contract is renegotiated after the merger, i.e., ‘new/amended contestable customers,’ can either be:
 - supplied by the WBU via a bilateral contract (based on the New Load Wholesale Arrangement (**NLWA**)); or
 - sourced from the Balancing Market at the Balancing Market price (based on the Supply Balancing Cost Allocation Arrangement (**SBCAA**)).

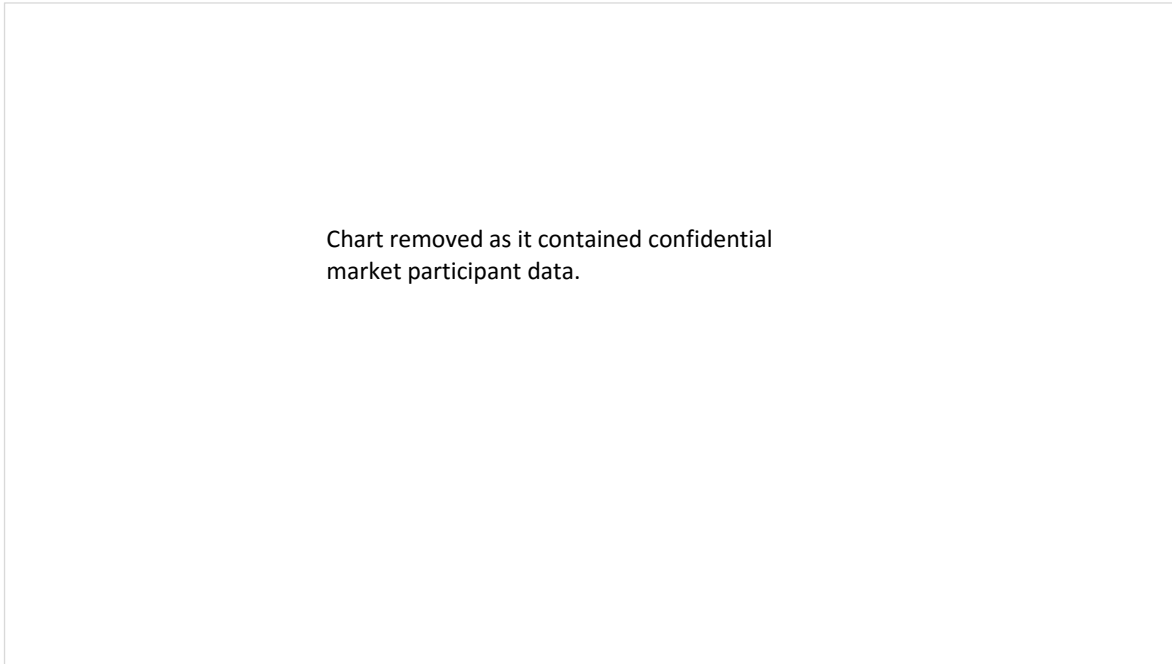
³² The foundation transfer price mechanism given to the Minister remains in force until 30 June 2017 or a later day approved in writing by the Minister.

³³ As set out in the Foundation Transfer Price Mechanism put in place at the time of the merger.

Any differences between the nominated forecast energy and actual energy supplied to the RBU are settled at the Balancing Price for the relevant Trading Interval.

The ERA notes the OAG has not identified any non-compliance with the Scheme in relation to the above arrangements. Synergy has provided the ERA with details of the monthly volumes and average prices paid for each type of supply. This information has been summarised in Figure 21 and Figure 22 below.

Figure 21: Retail Business Unit Monthly Energy Purchases (GWh)

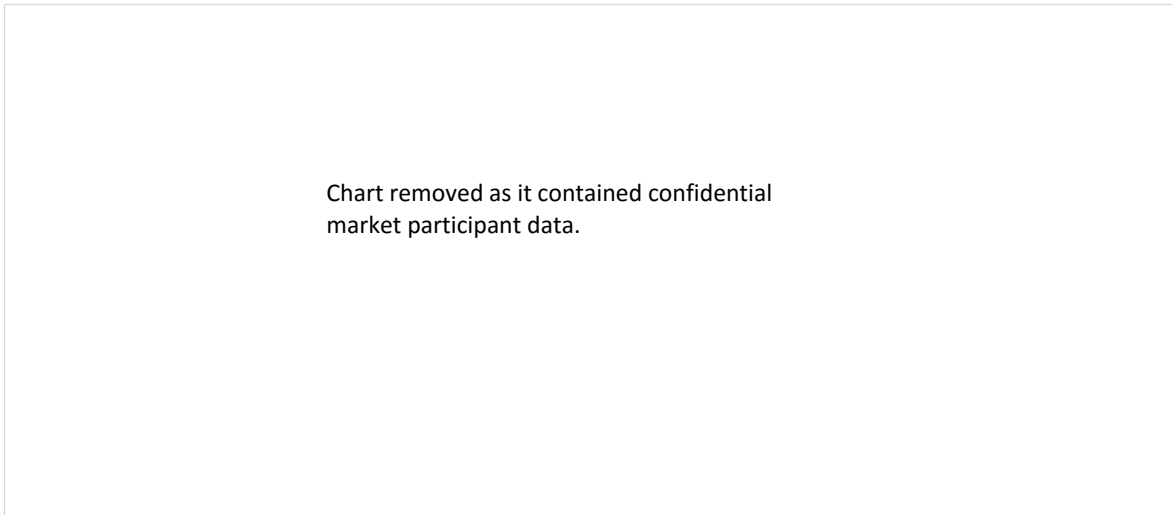


Source: Synergy Wholesale Business Unit

As can be seen in Figure 21 above, the largest portion of the wholesale supply between the WBU and RBU relates to the foundation customers. The proportion is gradually declining as Synergy acquires new contestable customers and/or the contracts for existing contestable customers are revised, both of which can then be supplied through bilateral contracts or directly from the Balancing Market.



Figure 22: Retail Business Unit Monthly Energy Purchases Average Prices \$/MWh

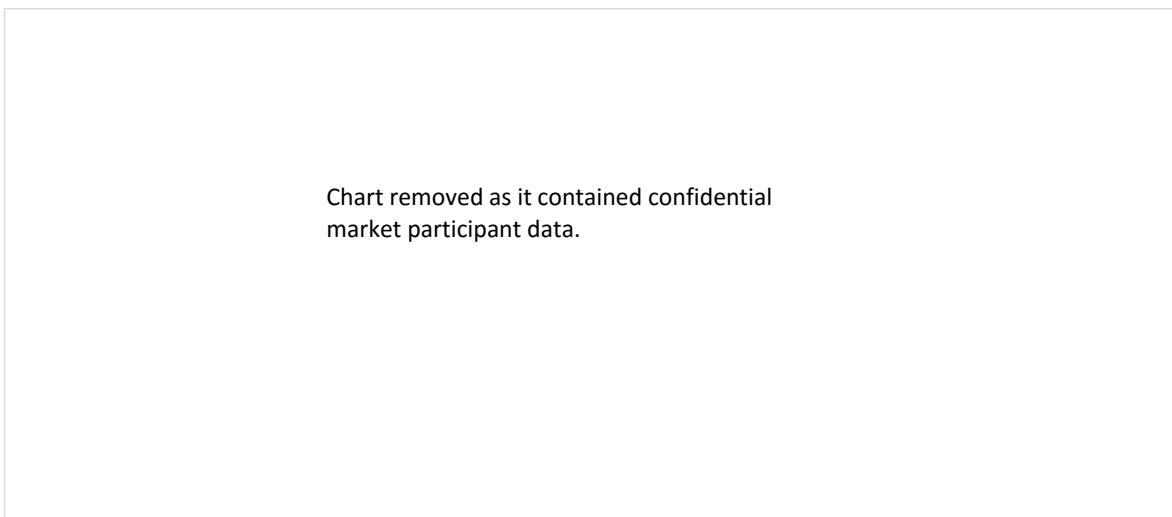


Source: Synergy Wholesale Business Unit

[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

Information provided by Synergy has also enabled a comparison to be made of the monthly average prices for third party bilateral contracts,³⁴ with the prices for bilateral contracts between the WBU and RBU. This is shown in Figure 23 below.

Figure 23: Comparison of RBU Prices under the NLWA to Average Third Party Bilateral Contract Prices \$/MWh



³⁴ Synergy note that this includes contracts with [REDACTED]

[REDACTED]

The ERA's review of the requests for quote and contracts executed for both the RBU and third parties has not provided any significant evidence the prices offered to the RBU have been more favourable than those offered to third parties. The OAG would also test for this as part of its compliance audit.

The ERA notes Alinta's views in relation to requiring Synergy to publish details of the transfer pricing arrangements between the WBU and RBU. The ERA agrees that publishing this information would provide greater transparency and confidence to the market that the RBU is not being treated preferentially but it would be important to ensure commercial information was protected.

In relation to Alinta and ERM's views that the RBU should always be required to seek formal supply offers from the WBU, the ERA notes the current arrangements, in particular the SBCAA, allows the RBU to effectively purchase energy directly from the Balancing Market, rather than enter into bilateral contracts with the WBU.

[REDACTED]

[REDACTED] On that basis, the ERA does not consider it is providing an advantage to the RBU, as all retailers can and do purchase from the Balancing Market.

Whilst Synergy may have a natural hedge when the business is considered as a whole, provided there are no cross subsidies and that transfer prices and other costs are allocated appropriately to the correct business units, any "inappropriate" retail pricing would be apparent from the segment financial reports. If the Standard Product spread is reduced, as set out below, such that the WBU is incentivised to also price its bilateral contracts efficiently, the RBU may not choose to buy in the Balancing Market in the future.

Wholesale supplies to third parties

Third parties can procure wholesale supplies from the WBU either as Customised Products or Standard Products. As the Standard Products were intended to provide a price discovery mechanism, they provide a tool to ensure there is no discriminatory behaviour. This relates to both Standard Products and Customised Products, as the Standard Products provide a benchmark for negotiation of Customised Products.

Alinta's submission describes the Standard Product prices as representing a forward price curve against which generators and retailers can hedge the price risk of the STEM and Balancing Markets. Alinta's view is that the Standard Products are a "necessary adjunct to the formal market arrangements that adds needed liquidity and optionality to the wholesale market."

Similar views are held by ERM who notes that the Standard Products were intended to be a "price discovery mechanism for competitively priced wholesale electricity" by providing "transparency and predictability". It considers the Standard Product Prices should provide the view of the forward price curve for the WEM and therefore set the wholesale benchmark that electricity retailers use to price retail customers.

The ERA considers improvements are necessary to the Standard Products. Improving the Standard Products should also flow through to Customised Products as the Standard Products provide a benchmark for negotiation of Customised Products.

The ERA's analysis and recommendations in relation to Standard Products are set out in the next chapter.

Segment Financial Reporting

Transparency is essential for the creation of efficient and competitive wholesale markets, and for restricting the scope for the abuse of market power. Transparency allows for regulatory and public scrutiny that makes it easier to prevent or detect an abuse of market power, and it reduces the perceived risk of an abuse of market power. In markets where one party in a transaction has significantly more information than another, resources may not be allocated efficiently. In such markets, sellers and buyers may be incentivised to conceal information in order to obtain a more favourable price or terms and conditions.

The Scheme requires Synergy to prepare separate statements of financial performance for each of its segmented business units for inclusion in its Quarterly and Annual Reports. Under the Act, the Minister, in consultation with the EGRC Board, is then required to make these reports publicly available.

Publicly available audited financial statements for each of the segregated business units should provide evidence that there are no cross subsidies between the business units and that Synergy's wholesale business is not discriminating between third parties and its own retail business.

The ERA notes the Scheme requires that separate statements of financial performance for each business unit are prepared in accordance with AASB 8. However, the requirements set out in AASB 8 are broad and open to interpretation. The ERA notes the format of each segment report prepared to date has varied. In addition, the reports have been prepared on a consolidated basis and have not separated the gas and electricity financial results. The level of detail reported in relation to revenue and costs for each business unit has also been extremely limited. Consequently the segment reports have provided very little information in relation to the transfer prices of wholesale energy between the GBU, WBU and RBU or the financial results for each business unit's electricity activities.

The most recent segment report for the nine months ended 31 March 2016 is shown below. The report shows the financial results for the GBU, WBU, RBU and Corporate Shared Services (CSS) separately. Revenues are split between external and inter-segment, with the inter-segment sales and cost of sales removed (see Eliminations column) to arrive at the consolidated revenue and cost of sales.

Segment Report for the period ended 31 March 2016

Financial Year 2016	GBU \$'000	WBU \$'000	RBU \$'000	CSS \$'000	Eliminations \$'000	Consolidated \$'000
External customers	76,797	248,101	2,082,162	-	-	2,407,060
Inter-segment	391,015	1,098,992	-	-	(1,490,007)	-
Total revenue	467,812	1,347,093	2,082,162	-	(1,490,007)	2,407,060
Cost of sales	(276,428)	(1,026,678)	(2,081,601)	-	1,490,007	(1,894,699)
Operating costs	(150,875)	(4,867)	(56,774)	(84,060)	-	(296,576)
Doubtful debts	-	-	(7,458)	-	-	(7,458)
Other income	1,969	38	27	7,532	(5,600)	3,967
	(425,333)	(1,031,507)	(2,145,806)	(76,527)	1,484,407	(2,194,767)
EBITDA	42,479	315,586	(63,644)	(76,527)	(5,600)	212,293
Depreciation and amortisation	(118,121)	(1,461)	(7,248)	(10,950)	2,059	(135,722)
Segment profit / (loss)	(75,643)	314,125	(70,892)	(87,477)	(3,541)	76,572
Unallocated items:						
Finance income						7,201
Finance expense						(58,922)
Net finance costs						(51,721)
Share of profit of joint ventures						(604)
Net profit before tax						24,247
Tax expense (provisional)						(5,532)
Profit for the year from continuing operations						18,715

As can be seen above, for the nine months ended 31 March 2016, the GBU, RBU and CSS are all reporting losses, whilst the WBU is reporting a profit and the overall result is a net profit. The only information provided in relation to transfers between the business units is the separation of revenue between external customers and inter-segment. In the column headed "Eliminations" the combined business unit revenue is adjusted to remove inter-segment sales and the combined business unit cost of sales is reduced by an amount equal to the inter-segment sales.

The ERA has discussed the process for preparing the segment report with Synergy staff and appreciates that it is a developing process with further improvements planned, including development of cost allocation methodologies. The ERA also recognises the most recent segment report is more detailed than those prepared in the past.

However, the ERA considers that further improvements to the segment reporting requirements would resolve many of the concerns raised in stakeholder submissions, which are not currently addressed by the segment reports including:

- the potential for cross subsidies between customer classes, including between the contestable and non-contestable customers;
- the potential for transfer pricing between business units to not reflect actual costs and therefore not provide the real margin for each business unit; and
- the potential for retail contracts to be priced below the actual wholesale cost.

The ERA recommends amending the requirement for the segment report to comply with AASB8³⁵ and instead include provision for detailed specification of the segment reporting requirements tailored for the Scheme to ensure the reports are prepared on a consistent

³⁵ Synergy would still need to comply with this accounting standard for the purposes of its annual financial report.

basis and provide sufficient information in relation to transfer pricing, including demonstrating there are no cross subsidies.

This would be similar to the approach adopted by OFGEM in relation to the UK gentailers who are required to publish audited annual segmental statements. A summary of the UK requirements is included in Appendix 2.

In developing these requirements, the ERA acknowledges there will need to be an appropriate balance between transparency and the cost of preparing the information. The ERA also recognises information sensitive to Synergy's commercial operations will need to be adequately protected. This could be managed by including specification of a confidential and public version of the information. The following should be considered when developing the requirements:

- The Scheme reporting requirements should only relate to the electricity activities of the segregated business units at a company level (i.e. exclude the gas retail business and any subsidiaries or joint ventures).
- Including general principles in the Scheme in relation to cost allocation methodologies which must be followed. For example, specifying that costs that are directly attributable to a business unit must be allocated accordingly and costs which are not directly attributable should be allocated on a causation basis. If it is not practicable to allocate on a causation basis, then the cost allocation methodology must set out the basis for allocation, reason for choosing that basis and an explanation for why no causal basis could be established.
- Development and publication of the cost allocation methodologies used to prepare the financial reports.
- Publishing sufficient detail in relation to the policies setting out the transfer pricing arrangements between the GBU, WBU and RBU to provide confidence the RBU is not receiving preferential treatment.
- Reporting on the contestable and non-contestable retail segments separately.
- A certification process to demonstrate Synergy only receives the TAP for customers using less than 50 MWh per year.

Compliance Regime

The compliance regime requires the OAG to conduct annual audits to ensure Synergy has complied with the Scheme.³⁶ The audit process provides comfort that Synergy has complied with the requirements of the Scheme.

As noted in last year's report, the current arrangements may result in significant delays between an instance of non-compliance and its identification as part of an annual review, resulting in inappropriate or anomalous behaviour impacting the market and persisting for months before it is discovered. The ERA recommended consideration be given to

³⁶ Most of the requirements are audited on a financial year basis with the exception being segregation obligations (including disclosure of restricted information, information technology access controls, training, separate work areas and separation of management roles) which are audited on a calendar year basis.

undertaking the audits more frequently, if this could be done cost effectively, and requiring Synergy to self-report any non-compliance as soon as it became aware.

Alinta's submission notes the potential for a substantial lag between non-compliant behaviour occurring and it being reported and then referred to the ERA for investigation. It considers this is concerning, not only in regard to disclosure of restricted information but also in regard to discriminatory pricing behaviour. Alinta notes its support for increasing the frequency of external audits, if not as a whole, then those elements that potentially deliver unfair advantage to Synergy, such as discriminatory wholesale pricing to the RBU and management of restricted information. It also supports the ERA's recommendation that Synergy should be required to self-report breaches and considers this would improve the market's confidence in Synergy's compliance with its obligations.

Synergy's submission considers the Scheme could be improved by providing the OAG and ERA with the discretion to extend the audit or review period if Synergy demonstrates a good level of compliance or the review has determined the scheme to be working effectively.

The ERA notes the OAG has now completed two financial year audits and two calendar year audits since the Scheme commenced. Two instances of non-compliance have been reported. These are summarised below.

In its first Financial Year audit for the period ending 30 June 2014, the OAG found that Synergy did not comply with regulation 6(1) of the EGRC Regulations because its report to the Minister for the quarter ended 31 March 2014 did not include separate statements of financial performance for each of Synergy's business units. Additionally, Synergy's report for the March quarter was provided to the Minister on 8 May 2014, which did not meet the requirement under section 106 of the Act for the report to be provided within one month after the end of that quarter. Separate statements of financial performance for each business unit were subsequently provided to the Minister in September 2014.

The second financial year audit for the year ended 30 June 2015 reported non-compliance in relation to the Standard Products. The OAG found that for two of the twelve Standard Product transactions executed during the year, remaining availability was only disclosed on the website six and nineteen working days after execution of the transactions, which was considered by the AG as not being as close to real time as practicable.

As noted in the section above on ring-fencing, the first Calendar Year audit report for the year ended 31 December 2014 did not identify any non-compliance. However, the OAG made a number of findings that it rated as being "of sufficient concern to warrant action being taken by the entity as soon as practicable."

The second calendar year audit report for the year ended 31 December 2015 did not identify any non-compliance, or other concerns warranting further action being taken.

As required by the Scheme, the ERA has investigated the non-compliance reported by the OAG. None of these related to matters for which the ERA is able to impose civil penalties.

The ERA sought explanations from Synergy as to why the non-compliance had arisen and what measures it had taken to ensure they did not occur again. Given the relatively minor nature of the breaches which essentially related to failures to provide information within the required timescales, the ERA was satisfied with the explanations provided by Synergy and the corrective measures taken.

[Redacted]

[Redacted]

- [Redacted]
- [Redacted]
- [Redacted]
- [Redacted]

[Redacted]

[Redacted]

- [Redacted]
- [Redacted]
- [Redacted]
- [Redacted]

[Redacted]

Although the non-compliance reported to date is of a relatively minor nature and relates essentially to failures to provide information within the required timescales, the ERA considers external monitoring and reporting of compliance with the Scheme is necessary to provide confidence Synergy is continuing to comply with the Scheme. The ERA does not consider it would be appropriate to reduce the frequency of reporting.

The role of the ERA's review of the effectiveness of the Scheme is not to identify any non-compliance with the Scheme, however it should provide an additional check that the Scheme is working to achieve a level playing field.

The ERA is also required to undertake annual reviews of the Wholesale Electricity Market to assess how effective it has been in meeting the WEM objectives. As noted earlier in this report, there is an overlap between the two reviews. The WEM Rules include information gathering powers to enable the ERA to undertake its review. However, information gathered under the WEM Rules can only be used for the purposes of the WEM review.

Consequently, it was necessary to obtain data for the EGRC review using the ERA's information gathering powers under section 51 of the *Economic Regulation Authority Act 2003*. Amending the WEM rules to enable information to also be used for the EGRC review would simplify and streamline the process for both the ERA and the parties that provide the information, including AEMO.

Standard Products

Background

The Scheme includes requirements for Synergy's ring fenced WBU to offer Standard Products. Standard Products are fixed quantities of energy which Synergy must advertise for sale and purchase at published prices.

The details of the Standard Product Arrangements were developed by the Merger Implementation Group (**MIG**), which was set up by the Minister to be responsible for the governance and oversight of the merger. The MIG described the overarching goals of the Standard Product Arrangements as being:

- to maintain private sector activity by imposing discipline on Synergy's wholesale pricing;
- to act as a price discovery mechanism, providing transparency and predictability for short to medium dated contracts for Market Participants;
- to provide a competitive benchmark price to the wholesale supply of electricity on a non-discriminatory basis; and
- to provide simple products that are an alternative to Customised Products, and that reduce barriers to entry for new entrant retailers and allow Market Participants to rebalance their portfolios (at the margins).³⁷

While other parts of the Scheme deal with the potential for Synergy to price discriminate between customers, the Standard Products are the only mechanism in the Scheme that deal directly with Synergy's contractual wholesale energy pricing.

The quantity and type of products are specified in the Scheme. They include flat quantity and peak quantity (8am to 10pm on business days) electricity in increments of 0.5MWh per trading interval which are offered for a number of periods including quarterly, calendar and financial year. The first Standard Products became available on 30 June 2014 with the first quarterly product commencing on 1 October 2014 and the first annual products commencing on 1 January 2015 and 1 July 2015.

Synergy can update prices up until the day before the period the relevant Standard Product commences. Transaction prices are fixed at the price published on the day the transaction was executed.

Synergy is free to set the Standard Product prices at any level, however it must comply with the requirements of clause 22 of the EGRC Regulations which prohibit it from discriminating between the RBU and competitors when offering wholesale supplies. In addition, the spread (i.e. the price differential between buying the energy parcel and selling the energy parcel) is specified in the Scheme. The spread was initially set at 25 per cent and reduced to 20 per cent on 1 January 2015. The MIG considered that efficient pricing would be underpinned by the buy/sell spread.³⁸

³⁷ Copies of the slides presented at the briefings can be found at https://www.finance.wa.gov.au/cms/Public_Utility_Office/Policy_projects/Merger_of_Synergy_and_Verve_Energy.aspx

³⁸ Reference MIG slide

Further detail in relation to the Standard Products is included in Appendix 1.

Review of the Standard Products

In competitive energy markets wholesale energy is traded in real time with the price changing in each trading interval based on the intersection of energy demand with generators' pricing offers. Generally retailers manage these spot price risks on behalf of consumers by charging customers a fixed price. Consequently, retailers are exposed to short term variations in energy prices. Retailers primarily manage spot price volatility by purchasing energy in advance.

In the WEM market participants are able to enter into bilateral contracts with other market participants to buy and sell energy. However, as the details of bilateral contracts are confidential to the parties involved there is no visibility of these forward contract prices. Any energy not bilaterally contracted can be purchased in the day ahead market (STEM) or otherwise must be purchased on the day at the Balancing Price.

As Synergy effectively supplies around three quarters of the wholesale energy in the WEM, either through its own generation or contractual arrangements with third party generators, it has both control and visibility of the majority of the wholesale supply market. Consequently, effective competition is reliant on Synergy not discriminating between the RBU and third parties in relation to wholesale energy contracts and setting its wholesale contract prices on a cost reflective basis.

As noted above, the MIG considered the Standard Products would act as a price discovery mechanism, by providing market participants with transparency and predictability of prices for short to medium dated contracts, and to provide a competitive benchmark price for the wholesale supply of electricity. The ERA has given consideration below to how effective the Standard Products have been in achieving these objectives.

In making this evaluation the ERA has:

- compared the Standard Product final published prices (for those products which have now expired) with the spot prices for the relevant periods;
- reviewed the level of transactions in Standard Products;
- compared requests for quotes and customised product transactions with Standard Products in relation to product characteristics and prices; and
- considered stakeholder feedback.

Comparison of Standard Product Prices with Spot Prices

Standard Product prices would be expected to be higher than STEM and Balancing Prices as they provide a hedge against spot prices, i.e. Standard Product prices should reflect the expected spot price plus a premium to reflect the removal of spot price risk.

As information on expected spot prices is not available in the WEM, it is only possible to make an ex post comparison (i.e. compare the actual average STEM or Balancing Price with the Standard Product prices for expired products).

Although this type of comparison will not be able to quantify how much of the difference relates to forecasting error, if viewed over time it provides some indication of the premium

above spot prices. The comparison of peak and flat Standard Product prices is set out in Figure 24 and Figure 25 respectively below.

Figure 24 Comparison of Final Published Peak Standard Product Prices with actual STEM and Balancing Prices

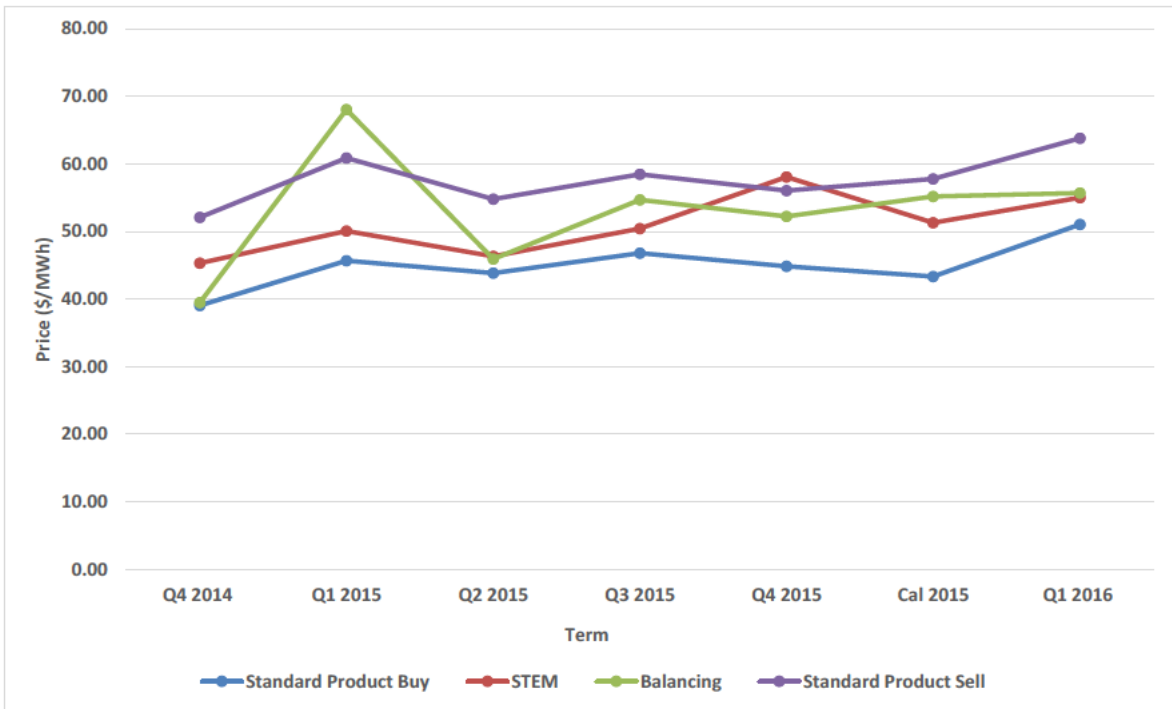
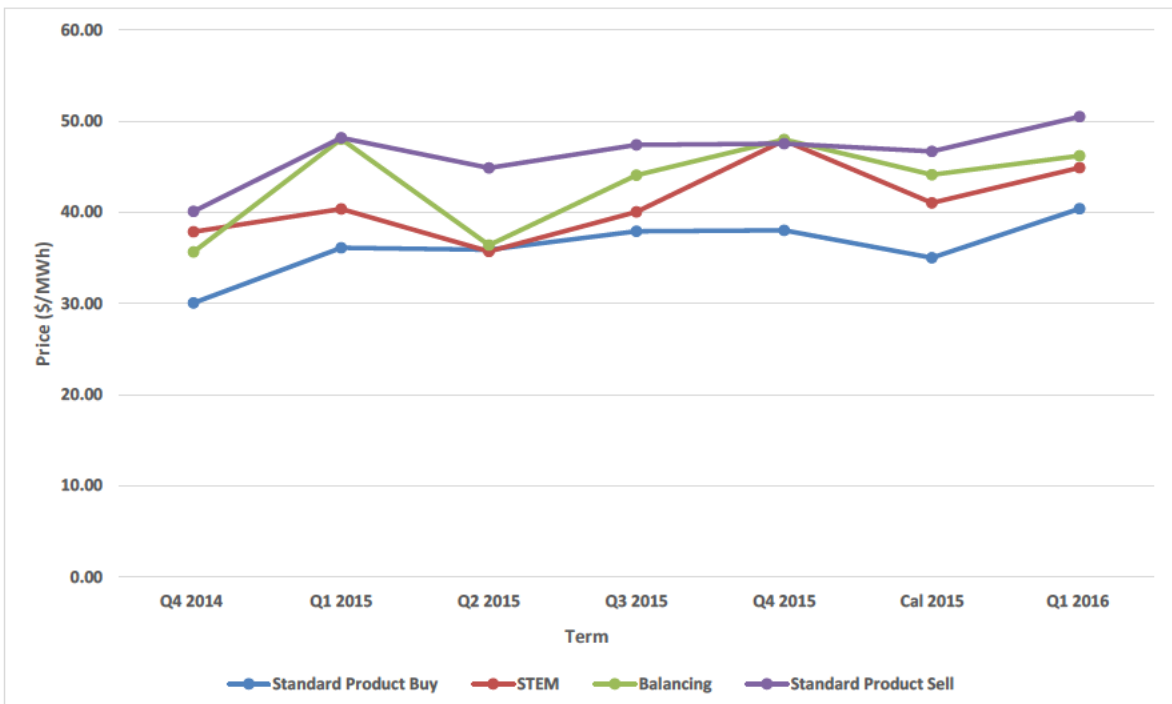


Figure 25 Comparison of Final Published Flat Standard Product Prices with actual STEM and Balancing Prices



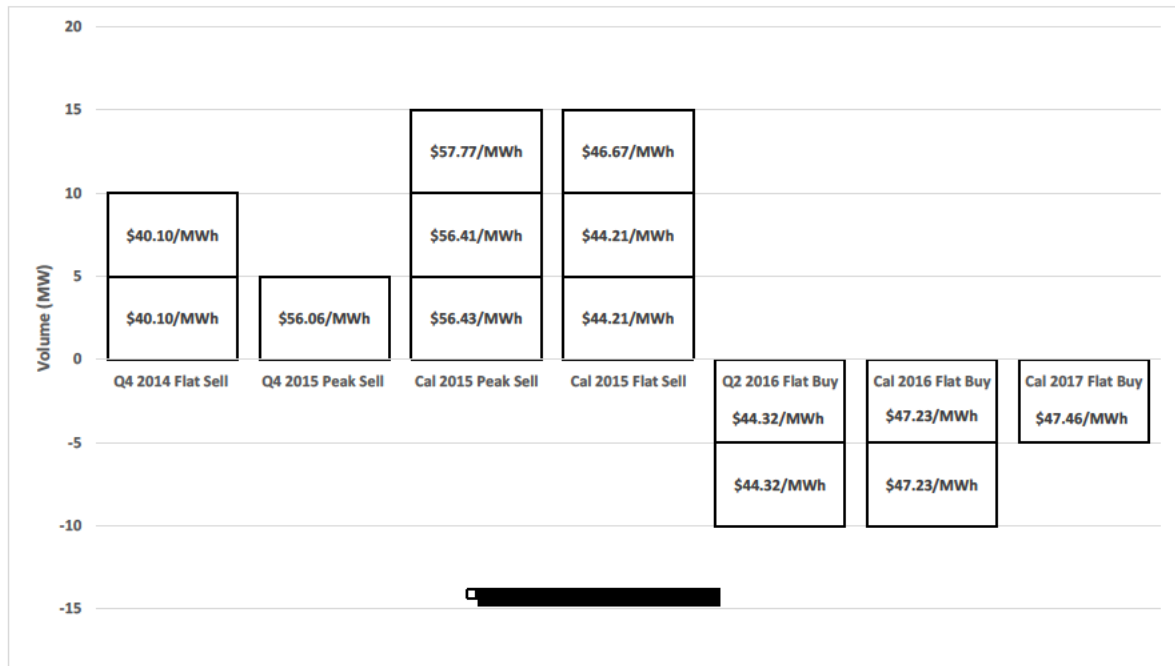
With the exception of Q1 2015 in Balancing and Q4 2015 in the STEM, all of the Standard Product sell prices are greater than the actual Balancing and STEM prices, respectively

with the variance compared with STEM prices ranging between 15 to 22 per cent in relation to Peak Products and 6 to 26 per cent in relation to Flat Products. The average Balancing Price in Q1 2015 and the average STEM price in Q4 2015 were unusually high due to outages.

Transactions in Standard Products

Transaction information, except in relation to identifying the counterparty, is required to be published by Synergy. Figure 26 below summarises the Standard Product transactions.

Figure 26 Standard Product Transactions



There have only been 14 transactions since the Standard Products commenced, with only [redacted] buying energy from Synergy and [redacted] selling energy to Synergy. Each transaction was for the maximum quantity permitted per week of 5 MW. The Standard Products sold were split fairly evenly between peak and flat products. All of the Standard Products bought were flat products.

The low level of Standard Product transactions suggests that the pricing or products offered do not match market expectations. As noted by OFGEM in its *Wholesale Power Market Liquidity: Interim Report*, "low liquidity can also weaken price signals because a low amount of trading reduces the likelihood that prices will reflect the underlying demand and supply conditions".³⁹

Comparison with Customised Products

Price discovery for wholesale energy contracts would be best achieved by Standard Products that reflect the typical requirements of retailers, either or both in terms of products retailers would actually procure, and products that provide a useful price comparator for negotiating Customised Products. The current Standard Products comprise small

³⁹ Refer to page 4 https://www.ofgem.gov.uk/sites/default/files/docs/2014/12/liquidity_interim_report_2014.pdf

contractual volumes of 1 MW, which it was considered would lower the effective cost for smaller participants and new entrants.⁴⁰

The ERA has analysed data provided by Synergy in relation to requests for quotes for Customised Products and compared them with the types of Standard Products on offer in relation to terms and quantities.

The ERA has also compared pricing between Standard Products and comparable Customised Products, and actual average STEM and Balancing prices for the contract term as part of its assessment of the effectiveness of the Standard Products in providing price discovery.

Details of this analysis are included in Appendices 3-5. In summary:

- whilst the data set for comparison was limited, the peak and flat Customised Product prices were largely consistent with the advertised Standard Product sell prices; and
- a large number of requests for quotes were for off peak Customised Products. As there is no equivalent Standard Product, price comparisons were difficult. Given the interest in off peak products, consideration should be given to requiring an off peak Standard Product.

Stakeholder Feedback

Stakeholders have raised concerns that the low level of transactions indicate there is a problem with the Standard Products.

Alinta's submission considers the limited take up to date suggests the Standard Products have not met the market's need for a viable alternative to the contract market and have not adequately underpinned a level playing field. ERM also considers that the fact that only 14 transactions have occurred since its inception provides evidence that the Standard Products are not working as they were intended to.

Community Electricity's submission notes that:

- independent retailers can procure energy from the wholesale market at full spot-price risk;
- the potential merit of the Standard Products is in hedging the price risk;
- Synergy controls three quarters of the generation supply;
- price risk is caused primarily by Synergy outages; and
- the Standard Products contain Force Majeure provisions that enable Synergy to suspend supply during sufficient and vaguely defined outages.

Consequently, Community Electricity considers that the Force Majeure provisions effectively nullify the purpose of the Standard Products.

⁴⁰ http://www.finance.wa.gov.au/cms/uploadedFiles/Public_Utility_Office/Policy_projects/Participant-briefing-7-March-2014.pdf

Amanda Energy's submission also considers the Force Majeure clauses remove any hedging benefit as, when the higher Standard Product price may well be justified, it may not be available due to the Force Majeure. It considers:

- the prices are set too high to win a competitive tender;
- the prices are set too high to offer a reasonable "hedge" for an electricity portfolio; and
- the prices should be a reflection of the expected average price, not the stepped price.

ERM's submission also raises concerns that the Standard Products price-board does not appear to be used as the basis for pricing retail customers. ERM considers this is either due to the Standard Product price book being "too expensive or Synergy (and potentially other retailers) selling at a long-run loss or potentially short via the Balancing Market".

The ERA notes Synergy's submission to the EMR consultation on the RCM which confirms it is pricing its retail sales at Balancing Prices, as it considers this is necessary to make it "competitive".⁴¹

Assessment

In relation to stakeholder concerns regarding the force majeure clause, the ERA notes a force majeure event is defined in the Electricity (Standard Products) Wholesale Arrangements 2014 as:

"... in relation to a person who is a party to an SP Agreement, any event or circumstance or combination of events and circumstances the cause of 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 of, or inability or unwillingness to reasonably use funds"

The inclusion, or not, of force majeure provisions in a contract are important as it impacts on the allocation of risk between the parties and therefore the price. Contracts which include force majeure provisions would be expected to be less expensive than an equivalent contract which does not include such a provision.

The Standard Product terms and conditions as set out in the Bilateral Trade Agreement (Standard Products) include force majeure provisions based on the definition included in the Electricity (Standard Products) Wholesale Arrangements 2014. If a force majeure event occurs Synergy will not be bound by the terms of the contract.

As set out above, stakeholders are concerned Synergy could call on the force majeure clauses in the event of a generator breakage, curtailment or interruption. Stakeholders consider these events to be within the control of Synergy, meaning that Synergy can in effect nullify a Standard Product contract it has entered into if the product becomes financially unattractive to Synergy.

The ERA notes the force majeure definition states that the cause of any event or circumstance or combination thereof must be "beyond the reasonable control of the person"

⁴¹ http://www.finance.wa.gov.au/cms/uploadedFiles/Public_Utility_Office/Electricity_Market_Review/reforms-to-rcm-submissions-Synergy.pdf

and “by which the exercise of due diligence the person is not reasonable able to prevent or overcome”. It is likely planned maintenance and outages would be within the “reasonable control” of Synergy, in which case the force majeure clauses would not come into operation.

However, as these stakeholder concerns appear to have led to a reluctance to trade in Standard Products, the ERA recommends that Synergy should clarify its Force Majeure clauses, and the specific circumstances in which the clauses can be used so it is very clear they only apply if the cause is beyond the reasonable control of the party in question.

The ERA notes there also appear to be differences between the Bilateral Trade Agreement (Standard Products) and the Master Bilateral Trade Agreement for Customised Product in relation to force majeure provisions. Unlike the Bilateral Trade Agreement (Standard Products), force majeure provisions have not been included in the Master Bilateral Trade Agreement. These inconsistencies may affect a comparison of pricing.

In relation to the limited trade in Standard Products, the ERA agrees with OFGEM’s views that actual trade is necessary to ensure prices reflect the underlying demand and supply conditions. Without this, it is difficult to have confidence in the Standard Product prices.

The ERA notes the ex post review of Standard Product prices against actual STEM and Balancing Prices together with feedback from stakeholders in relation to price provide further evidence that the Standard Product prices are not reflective of market prices.

Based on the comparison of prices, limited trading and stakeholder feedback outlined above, the ERA considers the Standard Products do not appear to be providing a competitive benchmark price for the wholesale supply of electricity on a non-discriminatory basis and, therefore, have not been effective as a price discovery mechanism. The ERA notes ERM’s view that a lack of transparency around a forward price curve for the market has been a contributory factor to the allegations made by some Market Participants in relation to Synergy’s pricing behaviour. The ERA considers changes are necessary to ensure the Standard Products fulfil their objective.

The MIG considered that efficient pricing would be underpinned by the buy/sell spread. The ERA agrees regulating the spread should be an effective tool for ensuring Synergy prices efficiently as it incentivises Synergy not to overprice its bids, because if it does, it is exposed to the risk that it may have to also buy energy at higher prices. However, this is dependent on the spread being set at an appropriate level.

The initial spread was estimated based on looking at the average buy/sell spreads in the STEM (average spread in 2013 of 10-40 per cent) and the Futures market in the NEM (March 2014 average peak maturity spread of less than 8 per cent, and an average base maturity spread of less than 2 per cent).⁴² The MIG noted that its decision was made taking into account the fact that less liquid markets tend to have wider buy-sell spreads.⁴³

⁴² Slide 7

http://www.finance.wa.gov.au/cms/uploadedFiles/Public_Utility_Office/Policy_projects/Standard_Product_Regime_Market_Participant_Briefing-9-April-2014.pdf

⁴³ Slide 5

http://www.finance.wa.gov.au/cms/uploadedFiles/Public_Utility_Office/Policy_projects/Standard_Product_Regime_Market_Participant_Briefing-9-April-2014.pdf

Synergy's risk exposure was further limited by the prescribed volume limits (150 MW for sale, 100 MW for purchase, and a minimum of 5 MW per week serviced from each of these volumes).⁴⁴

The ERA notes Synergy's view that it does not consider there to be sufficient evidence to move from the current standard product buy/sell spread and that reducing the buy/sell spread could introduce arbitrage opportunities and place undue risk on Synergy. Although Synergy has not provided any details of how it considers such arbitrage opportunities may arise, the ERA recognises there is an inverse relationship between increasing the effectiveness of the Standard Products by reducing the spread, and the impact on Synergy's risk exposure and that an appropriate balance is necessary.

The level of spread set when the Scheme was put in place necessarily reflected limited data and uncertainties regarding how the Scheme would operate. As the Standard Products have now been in place for nearly two years, the ERA considers it is an appropriate time to review and adjust the spread as necessary to improve the effectiveness of the Scheme. This is particularly important given the likelihood of Full Retail Competition (**FRC**) being introduced in the coming years.

The ERA has given consideration below to the level of the buy/sell spread. In forming its recommendations, the ERA has specifically considered the impact on Synergy to ensure an appropriate balance between achieving efficient pricing (which would require a lower spread) and Synergy's risk position (which would require a higher spread).

Setting the spread

The ERA engaged Deloitte Access Economics (**Deloitte**) to provide expert advice in relation to an appropriate methodology to estimate the spread for the Standard Products. A copy of the report is included as Appendix 6. The following section takes account of the advice provided by Deloitte.

In competitive markets, a trader is compensated for the risk it takes. Spreads typically represent the risk margin that traders receive to bear, and that market participants pay to avoid, spot price volatility. In an electricity futures market, this is the risk of not being able to close out a trading position and therefore being subject to spot market volatility to balance trades. The size of this risk is affected by the market's liquidity.

Given that the Standard Products are seeking to mitigate Synergy's potential market power, it follows that Synergy should only receive compensation for the risk of losses it might incur in trading Standard Products to the extent that it is not exercising market power. A spread which mirrors the outcome of a competitive electricity futures market would best ensure that Synergy's pricing is consistent with it not exercising market power. A level playing field that facilitates new entry requires prices that reflect efficient and competitive outcomes and, in order for the Standard Products to act as a price discovery mechanism, the spread must reflect the forward prices that would prevail if the market was competitive.

Similar views are expressed in Alinta's submission which notes the usefulness and value to the market would be improved if the spread was reviewed against buy/sell spreads in other competitive wholesale electricity markets. Alinta considers a reduced spread would assist

⁴⁴ Slide 8

http://www.finance.wa.gov.au/cms/uploadedFiles/Public_Utility_Office/Policy_projects/Standard_Product_Regime_Market_Participant_Briefing-9-April-2014.pdf

in price discovery, ensure Synergy prices more efficiently and better support achievement of the level playing field objective. It considers that Synergy's current dominance in the WEM makes it unlikely that the spread will reduce to optimal levels, and that therefore the maximum spread will need to continue to be regulated.

The ERA recognises that setting a spread in WA is not necessarily a matter of immediately adopting the spreads that prevail in other competitive markets because market differences and current market conditions need to be taken into account. For example, the WA wholesale and retail markets are relatively small meaning liquidity may never be as high as in (for example) the NEM futures market, whilst on the other hand WEM electricity price volatility is lower than in the NEM futures market. These differences in the WA market, when compared to other markets, mean spreads in WA may not be the same as those markets.

Moving immediately to competitively priced spreads would potentially undercompensate the WBU for the risks it currently faces in offering Standard Products in the current market conditions. Deloitte recommends a cautious approach of gradually tightening spreads to a lower level to improve liquidity, whilst ensuring that the WBU's risk position is reasonable.

In illiquid markets, wider spreads are needed to compensate traders or market makers for the risk that they will not be able to close out their position. However, in such cases it is often narrower spreads that would be needed to promote additional liquidity that would reduce this risk. Given the circularity of the relationship between liquidity and spread, testing whether the regulated spread is "right" for the WEM needs to monitor the level of liquidity.

On the basis that the spread represents the risk that the WBU incurs by offering products in an illiquid market where it cannot balance the sale of an electricity future by purchasing a corresponding future, as an initial step the spread could be set with reference to the volatility of the electricity spot market. This "volatility approach" assumes that the WBU would price the Standard Product Sell product at the forecast mean spot market price for the relevant period plus a risk margin to account for the spot market volatility.

The converse of this is that the Standard Product Buy price reflects the forecast mean spot market price for the relevant period minus a risk margin to account for spot market volatility. Viewed this way, providing the spread is sufficient to cover spot market volatility, the Sell Price reflects a premium on the forecast average spot price and the Buy Price reflects a discount on the forecast average spot price. As the spot price should reflect the SRMC of the marginal generator, the Buy Price will also be less than the SRMC of the marginal generator and the Sell Price will be higher.

Adopting the volatility approach would ensure Synergy had a reasonable chance to profit from its trades in a relatively illiquid market, whilst improving the effectiveness of the Standard Products.

The ERA notes the volatility approach assumes that the WBU is purely a trader, and the volatility approach compensates the WBU for the risk it faces in holding an unbalanced trading position in an illiquid market. However, the ERA considers that Synergy has surplus energy, with the energy available from its generation fleet, combined with the take or pay requirements in its PPAs, exceeding the WBU's contracted energy sales to third parties and the RBU.

To the extent that the WBU has surplus energy, it is exposed to spot prices on the generation that it must offer into the market,⁴⁵ and the take or pay elements of its PPAs. Consequently, rather than a risk, the requirement to offer to sell energy through Standard Products could be viewed as an opportunity for the WBU to reduce its exposure to spot prices, by fixing a selling price for those parcels of energy.

Notwithstanding the above, the ERA recognises the requirement for Synergy to purchase additional energy through Standard Products may introduce additional risk to Synergy, particularly given that it already has more energy than it requires. Clearly, if the spread is set too low (i.e., it is not sufficient to cover spot market volatility), the Standard Product Buy price may exceed the expected average spot price for the relevant period and result in Synergy being forced to purchase energy at a price greater than it can expect to sell that energy for.

However, assuming the spread is sufficient to cover spot market volatility, the Standard Product Buy price will not be higher than the average spot price for the relevant period and will also, therefore, be lower than the SRMC of the marginal generator. In the event that any generator decided it wanted to sell energy to Synergy at the Standard Product Buy price, and Synergy was unable to sell a corresponding future, it will be able to sell the energy in the spot market at a price greater than it purchased the energy for.

Synergy's submission raises concerns that reducing the buy/sell spread could introduce arbitrage opportunities and place undue risk on Synergy, although its submission does not elaborate on how this might arise.

However, for the reasons outlined above, the ERA is of the view that the risk faced by Synergy in relation to the Standard Products regime, if priced efficiently, is reasonable and potentially offers it an opportunity to offset price risk on its generation and take or pay PPAs. Whilst the ERA considers it is important that the spread is high enough to limit the risk of the Standard Product Buy price being higher than the average spot price for the relevant period, it notes that Synergy is only exposed up to the quantity of Standard Products it must offer to buy (100 MW), which limits the total exposure it has in relation to such risk.

Deloitte suggests over time the spreads could be lowered further to the benchmark spreads found in competitive markets (adjusted for specific WA market characteristics where possible). During the period over which the spreads are lowered, the operation of the futures market would need to be monitored to test whether the lower spreads have led to a more liquid market and, therefore, whether the WBU has more opportunities to balance its trades.

The ERA considers Deloitte's recommendation to be a pragmatic solution which achieves a balance between managing Synergy's risk and achieving efficient pricing outcomes. As outlined above, the ERA considers the volatility approach probably overcompensates Synergy as it effectively assumes the WBU is only able to close its trading position by purchasing or selling energy on the spot market, whereas the ERA considers it has other options (i.e., Customised Products). However, the approach provides a useful stepping stone to eventually transition to a more competitive spread, whilst ensuring Synergy's risk position is adequately taken into account during the transition.

When estimating volatility, selecting the appropriate standard deviation (representing the chance of the WBU not losing on a trade) is a matter of judgement as to the appropriate

⁴⁵ The WEM rules require all generators to offer into the market and may not price above SRMC where it relates to market power.

level of risk for the WBU to bear. The ERA recognises Synergy should have a greater than 50 per cent chance of profiting from a trade because, in a competitive market a trader would otherwise not offer electricity futures. Deloitte's analysis indicates the current spread provides Synergy with an 84 per cent chance of profiting from a Standard Products trade. The ERA considers this is weighted too far in Synergy's favour and, as Deloitte suggests, likely to be an explanatory factor for the low take-up of Standard Products. The ERA considers using a standard deviation of one, which would provide Synergy with a 69 per cent chance of making a profit would result in a more reasonable balance.

As set out in the table below, spot market volatility has been estimated by calculating the mean prices in the STEM over a 21 month period, commencing from July 2014. This period has been selected on the basis that conditions were relatively similar over the period i.e. consistent market design, post Synergy/Verve merger and no carbon tax. As recommended by Deloitte, STEM prices have been used on the basis that retailers would prefer to purchase electricity from the STEM than the Balancing Market because they can plan their purchases and buy electricity based on their bids, and STEM mean prices and volatility are generally lower than in the Balancing Market.

Quarter	Average STEM Price (Peak) \$/MWh	Average STEM Price (Flat) \$/MWh
2014 Q3	55.44	46.79
2014 Q4	45.31	37.87
2015 Q1	50.06	40.38
2015 Q2	46.32	35.72
2015 Q3	50.41	40.06
2015 Q4	58.05	47.88
2016 Q1	54.99	44.90
STEM Price Average	51.51	41.95
STEM Price Standard Deviation	4.81	4.63
Spread based on one (Z-score) Standard Deviation	9%	10%

The spread has been calculated using the methodology recommended by Deloitte, which, allowing for a 69 percent chance that the WBU will not lose on a trade, is to divide 'one STEM price standard deviation', by the sum of the 'STEM price average' and 'half the STEM Price standard deviation' (then multiply by 100 to produce a percentage).⁴⁶ Based on this

⁴⁶ That is, spread = (historical SD in the STEM / (historical mean in the STEM + (((0.5 * the Allowed Probability Z-score SD) * (historical SD in the STEM)))) * 100). In this instance, the 'Allowed Probability Z-score SD' was set at 1 by Deloitte, i.e., allowing for a 69 percent chance that the WBU will not lose on a trade.

methodology and the data in the table above, it is recommended that, as an interim step, the spread should be reduced to 10 per cent.

The ERA recognises this estimate is based on a small number of data points. In addition, a primary assumption underpinning the approach is that historical volatility of the spot markets is a good predictor of future volatility. The ERA recognises this may not be the case. For example, as discussed elsewhere in this report, the current excess capacity appears to be reducing volatility. As the excess capacity reduces, it is likely that over time volatility will increase.

However, the ERA considers the 10 per cent estimate is sufficiently robust for the purposes of transitioning towards a competitively based spread on the basis that:

- it is higher than the spreads found in competitive markets (Deloitte's analysis indicates benchmarks spread found in competitive markets, adjusted for specific WA market characteristics, would fall within a range of two to eight per cent);
- the volatility approach overstates Synergy's actual risk position; and
- it will be monitored and reviewed regularly to ensure it remains appropriate.

The ERA notes the concern Synergy raised in its submission in relation to the potential for a carbon trading mechanism, and the impact this may have on the buy-sell spread in the future. The ERA considers this issue can be addressed when and if it arises, as the Minister is able to amend or repeal wholesale arrangements, including those relating to the acquisition or supply by Synergy of wholesale products.⁴⁷ Force Majeure provisions should deal with any major changes/disruption to the market, outside the control of Synergy, in the short term. In any case, the quantities of Standard Product required to be offered under the Scheme are small in comparison to the overall market and put a cap on Synergy's total risk exposure.

The revised spread should be retained for a suitable period to enable the impact of the change to be assessed, particularly in relation to liquidity⁴⁸. The ERA suggests a minimum twelve month period and maximum 24 month period may be most appropriate, to provide sufficient time for any changes to impact on the market and for a review to be undertaken.

Depending on the results of that review, further reductions in the spread can be implemented to ultimately arrive at a level consistent with benchmark spreads found in competitive markets, adjusted for specific WA market characteristics. Deloitte's analysis indicates these could potentially fall within a range of two to eight percent.

⁴⁷ Under EGRC Regulation 28, this can be achieved by instrument published in the Gazette, and must also be laid before each House of Parliament within 10 sitting days of that House, after the day on which the instrument was published in the Gazette.

⁴⁸ The ERA considers that the total futures contract market (Standard Products and Customised Products) needs to be considered, rather than just Standard Products to provide a full picture of liquidity.

Appendices

Report to the Minister on the Effectiveness of the Electricity Generation and Retail Corporation Regulatory Scheme

Appendices

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Economic Regulation Authority

WESTERN AUSTRALIA

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Appendix 1 Overview of the EGRC Regulatory Scheme

EGRC Regulations

The EGRC Regulations came into effect on 1 January 2014 and among other things include segregation and wholesale trading requirements, and a compliance regime.

Segregation Requirements

Division of EGRC Operations into Segments

The EGRC Regulations specifically require that Synergy's operations are divided into segments:

- the Generation Business Unit (**GBU**), comprising operations involving the construction or operation of generating works;
- the Wholesale Business Unit (**WBU**), involving the wholesale acquisition or supply of electricity and the acquisition or supply of wholesale products, including pricing in respect of such acquisition or supply;
- the Retail Business Unit (**RBU**), involving the pricing, sale and marketing of electricity to customers served by the SWIS;¹
- shared services operations, including operations relating to corporate planning and strategy, organisational development, accounting, financial and legal matters, human resources, information technology support regulatory and compliance matters, communications, billing, and record keeping. It also includes any other operations undertaken in connection with 2 or more business units, excluding generation operations, wholesale operations and retail operations; and
- any additional segment(s) approved by the Minister.

Synergy is required to prepare separate statements of financial performance for each EGRC business unit, on a quarterly basis and in the annual financial report.

Other Segregation Obligations

The EGRC Regulations also impose segregation obligations relating to ring-fencing and restrictions on information flows between the business segments which require:

¹ The SWIS includes the interconnected transmission and distribution systems, generating works and associated works, located in the South West of the State and extending generally between Kalbarri, Albany and Kalgoorlie.

- that retail restricted information² must not be disclosed to retail staff and generation restricted information³ must not be disclosed to generation staff;
- that Synergy must develop, implement and maintain controls that limit access to IT systems to ensure compliance with disclosure provisions;
- that staff who receive access to restricted information are made aware of the obligations imposed on Synergy through training conducted at least once a year;
- that wholesale staff are physically separated from generation and retail staff in a secure location; and
- the separation of management roles between the Retail, Wholesale and Generation Business Units.

Wholesale Trading Requirements

Supply Arrangements

The EGRC Regulations set out the requirements for the four types of wholesale supply arrangements under the Scheme, involving the WBU, including:

- WBU provides wholesale supply to RBU, for retail supply to Foundation Customers;
- WBU provides wholesale supply to RBU, for retail supply to New Contestable Customers;⁴
- WBU provides wholesale supply of Customised Products to RBU, or other retail competitor or generation competitor; and
- WBU provides wholesale supply of Standard Products to other retail competitor or receives wholesale supply of Standard Products from other generation competitor.

Internal Synergy Wholesale Arrangement

In relation to the first dot point above, the EGRC Regulations require that Synergy has a written arrangement in place, before any supply transaction is entered into between the WBU and the RBU, for a retail supply of electricity to a customer otherwise than under a new contestable customer arrangement. This written arrangement must state that the

² Retail Restricted Information is defined as information relating to a retail competitor that is obtained by or provided to wholesale staff in the course of the conduct of the wholesale business and might reasonably be expected to materially adversely affect the commercial interests of the retail competitor if disclosed to retail staff.

³ Generation Restricted Information is defined as information relating to a generation competitor that is obtained by or provided to wholesale staff in the course of the conduct of the wholesale business and might reasonably be expected to materially adversely affect the commercial interests of the generation competitor if disclosed to generation staff.

⁴ A new contestable customer arrangement is an arrangement between Synergy and a contestable customer that imposes a legal obligation on the EGRC to supply electricity to the contestable customer on a retail basis and becomes legally binding on Synergy after the merger time.

transfer price under this arrangement is the foundation transfer price i.e., the price determined for that supply in accordance with the Foundation Transfer Price Mechanism⁵.

To address this requirement, Synergy has implemented the Internal Synergy Wholesale Arrangement (**ISWA**). This arrangement is made in accordance with regulation 11 of the EGRC Regulations, as the Foundation Transfer Price Mechanism to apply to the operations of the WBU and the RBU. The transfer prices and pricing mechanisms for the wholesale supply of energy under this arrangement constitute the Foundation Transfer price for the purposes of regulation 9(1) and (2) of the EGRC Regulations. Section 2 of the STP Guidelines also applies, with prices determined in accordance with clause 2.2(e) and energy forecasting and nominations made in accordance with 5.1(3) and 5.1(4).

New Load Wholesale Arrangement

Similarly, in relation to the second dot point above, before any supply transaction is entered into between the WBU and the RBU, for a retail supply of electricity to a customer under a new contestable customer arrangement, Synergy must have one or more written arrangements in place to apply to supply transactions of that kind. A written arrangement for supply transactions of this kind must include a mechanism for determining the transfer price (i.e., referred to as an 'Additional Transfer Price Mechanism' under the STP Guidelines).

To address this requirement, Synergy has implemented the New Load Wholesale Arrangement (**NLWA**). This arrangement is produced in accordance with regulations 9(3) and 9(4) of the EGRC Regulations, and section 4 of the STP Guidelines.

Master Bilateral Trade Agreement and Bilateral Trade Agreement (Standard Products)

Finally, under regulation 9(6) of the EGRC Regulations, before any transactions with third parties are entered into, Synergy must have in place one or more written arrangements that set out the terms and conditions that are to apply to those transactions.

In addressing this requirement, Synergy has implemented two arrangements; i.e., the Master Bilateral Trade Agreement and the Bilateral Trade Agreement (Standard Products).

The Master Bilateral Trade Agreement addresses regulation 9(6) and is used in the RFQ process for trading in Customised Products, including the bilateral trade of electricity, Capacity Credits and Contracts for Differences.

The Bilateral Trade Agreement (Standard Products) provides for trading in Standard Products, and addresses requirements in the *Electricity (Standard Products) Wholesale Arrangements 2014* and regulation 9(6). The Bilateral Trade Agreement (Standard Products) is publicly available from Synergy's website.⁶

⁵ According to the MIG, the foundation transfer pricing mechanism covers franchise tariffs, contestable tariffs, and existing contestable contracts up to their expiry (including contracts signed prior to 1 January 2014, where supply had commenced; contracts signed prior to 1 January 2014, where supply had not yet commenced; formal contract offers made by Synergy prior to 1 January 2014, which the customer accepted prior to 1 April 2014; and any contractual options contained within the aforementioned agreements). http://www.finance.wa.gov.au/cms/uploadedFiles/Public_Utility_Office/Synergy_and_Verve_Energy_Merger/Market-participants-and-stakeholder-briefing-session-December-2013.pdf

⁶ <http://wholesale.synergy.net.au/Documents/EGRC%20Standard%20Product%20Agreement.pdf>

Wholesaling Obligations

The EGRC Regulations prohibit Synergy from:

- discriminating between its RBU and competitors when offering wholesale supplies; and
- from taking into account the financial interests of the RBU in determining the terms and conditions on which a wholesale supply of electricity is offered to retail or generation competitors.⁷

The EGRC Regulations require Synergy to develop a policy for determining the terms and conditions for the wholesale supply of electricity, including processes for assessing the ability of a business to make payments for that supply, and for determining terms and conditions on which the wholesale supply of electricity is to be offered.

Synergy must keep records of each assessment of a business to make payments: each request for a wholesale supply of electricity, the response given to the request, and the documents or other material relied upon in giving the response. Synergy must also record its ability to offer a wholesale supply of electricity at the time of each request, taking into account any contracts, agreements or other supply arrangements entered into by Synergy.

Synergy has published a Wholesale Electricity Supply Policy⁸ and a Wholesale Energy Credit Policy.⁹

Together, the two policies:

- provide for standard processes for the WBU to respond to requests from customers for the wholesale supply of electricity, including
 - assessing the ability of the Customer to make payments for the wholesale supply of electricity; and
 - determining the terms and conditions on which the wholesale supply of electricity is to be offered in response to a request, taking into account the Customer's ability to make such payments);
- ensure the standard processes are not more favourable to the RBU than another customer in relation to an offer to supply wholesale electricity to the RBU; and
- outline a response standard for Customer requests to the WBU for the wholesale supply of electricity.

Synergy Wholesale Electricity Supply Policy

Synergy's Wholesale Electricity Supply Policy was implemented to meet the requirements of the *Electricity Corporations Act 2005*, and Regulations 23 and 24 by setting out standard

⁷ In relation to this, the financial position of the Retail Business Unit is to be taken to be the financial position of the EGRC, when assessing the ability of the Retail Business Unit to make payments for wholesale supply, and the standard processes must not be more favourable to the Retail Business Unit than to a retail or generation competitor.

⁸ http://www.synergy.net.au/docs/VMI_EGRCWholesaleElectricitySupplyPolicy.pdf

⁹ http://www.synergy.net.au/docs/VMI_EGRCWholesaleEnergyCreditPolicy.pdf

processes to be followed in offering a wholesale supply of electricity to the RBU, a retail competitor or a generation competitor.

Synergy Wholesale Energy Credit Policy

Synergy's Wholesale Energy Credit Policy was also implemented to meet the requirements of Regulation 23, and sets out the credit processes to be followed for Wholesale Energy Trading Activities with Approved Counterparties, including activities between the WBU and the RBU).

The objective of this policy is to safeguard Synergy's financial resources through implementing a credit risk management framework and credit risk control procedures, to minimize credit risk associated with Synergy's Wholesale Energy Trading Activities, and ensure that Synergy complies with its non-discrimination and other regulatory obligations.

Synergy Wholesale Trading Policy

Synergy has also developed a Wholesale Trading Policy that is not required under the EGRC Regulations. This policy is a self-regulatory mechanism that all personnel involved in Wholesale Trading Activities have been required to comply with from 1 January 2014. The Policy is intended to establish effective and appropriate mechanisms for the governance of Wholesale Trading Activities through the definition of roles and operating procedures, including approval of specified trading commodities and instruments and delegated financial authority. The policy does not apply to energy trading between the WBU and the GBU and is not binding on any subsidiary of Synergy, nor any other entity in which Synergy holds an interest.

The Trading and Risk Management Committee (TRMC) must provide positive confirmation of compliance with this policy to the Audit and Risk Management Committee (ARMC), on at least a quarterly basis.

Synergy Ring Fencing Policy

The ERA notes, from its review of Synergy's Wholesale Energy Credit Policy, that Synergy has also voluntarily developed an internal Ring Fencing Policy.¹⁰

Compliance

Under the EGRC Regulations, the Auditor General is required to audit the Scheme, whilst the ERA is required to investigate any non-compliance identified in the Auditor General's report and can impose civil penalties.

The Auditor General is required to undertake:

- Financial year audits, which cover segmentation of Synergy's operations, financial administration, segregation arrangements, wholesaling obligations and wholesaling arrangements; and
- a Calendar year audit, which covers certain segregation obligations (disclosure of restricted information, information technology controls, training, separate work areas and separation of management roles).

¹⁰ Synergy's Wholesale Energy Credit Policy, section 1.2 notes that the Credit Policy "should be read with the Wholesale Electricity Supply, Ring Fencing and Wholesale Trading Policies."

The Auditor General must give the Minister a report on each of the required financial and calendar year audits and include the opinions formed, and details of any deficiency, failure or shortcoming in respect of the matters referred to in the respective regulations.

The Auditor General must then give a copy of the reports to both the board of the EGRC and to the ERA, as soon as practicable after the report is given to the Minister. The Auditor General's reports are required to be tabled in each House of Parliament within 21 sitting days of that House after the day on which the Minister receives the report. There are no provisions for the removal of commercially sensitive matters.

The ERA's investigative and enforcement role is dependent on the Auditor General forming an opinion that the EGRC has not complied with one or more provisions of the regulatory scheme that it is required to audit. That is, under Regulation 33 of the EGRC Regulations:

If the Auditor General has formed an opinion, as detailed in a report under regulation 31, that the EGRC has not complied with one or more provisions of the EGRC regulatory scheme, it is a function of the Authority to investigate the matter.

Following an investigation, the ERA is able to impose civil penalties for non-compliance with a limited number of regulations that are audited as part of both the Calendar and Financial Year Audits. These are specified in Schedule 1 of the EGRC Regulations. Briefly, the civil penalty provisions relate to:

- the division of the EGRC operations into segments;
- the foundation transfer price mechanism;
- disclosure of restricted information;
- the maintenance of separate work areas; and
- discrimination between the EGRC retail business unit and competitors when offering wholesale supply.

If the ERA considers that the EGRC has contravened a civil penalty provision, it may give the EGRC a warning notice. Alternatively or in addition to a warning notice, if the ERA considers that the EGRC has contravened a civil penalty provision, the ERA may impose a civil penalty of an amount that does not exceed the maximum of:

- an amount of \$100 000; and
- in addition, a daily amount of \$20 000.

In determining the amount of a civil penalty, the ERA must have regard to all relevant matters, including the nature and extent of the contravention, and the circumstances in which the contravention took place. Civil penalties paid to the ERA must be credited to the Consolidated Account.¹¹

The ERA can apply to the Western Australian Electricity Review Board (Board) to order payment if the EGRC does not pay the amount imposed. Additionally, the ERA can enforce an order of the Board by lodging a certified copy of it and an affidavit stating to what extent it has not been complied with, with the Supreme Court.

In addition to investigating any non-compliance, the ERA is also required to undertake an annual review of the operation of the Scheme for the purpose of assessing its effectiveness, which is the subject of the current report.

¹¹ That is, they are returned to Treasury and not retained by the ERA.

STP Guidelines

As noted above, the EGRC Regulations require:

- Preparation by Synergy of the Foundation Transfer Price Mechanism (i.e., the instrument by which the Foundation Transfer Price is determined), and revisions to, or replacement of the Foundation Transfer Price Mechanism. This instrument must be given to the Minister (at which time it comes into force) and remains in force until 30 June 2017 or a later day approved in writing by the Minister.
- Preparation by Synergy of the Additional Transfer Price Mechanisms (i.e., the mechanism for determining the transfer price for a wholesale supply of electricity by the WBU to the RBU, for a retail supply to a new contestable).

Further requirements in relation to transfer pricing and the Foundation Transfer Price Mechanism are set out in the Segregation and Transfer Pricing Guidelines, which were gazetted on 30 December 2013 under section 62(1) of the Act.¹² Among other things, the STP Guidelines set out the requirements applicable to the Foundation Transfer Price Mechanism and the Additional Transfer Price Mechanisms.

The Foundation Transfer Price Mechanism determines the transfer price for the wholesale supply of electricity by the WBU to the RBU, for the purposes of a retail supply of electricity to a Foundation Customer. Under the Guidelines, the Foundation Transfer Price Mechanism must:

- establish terms and conditions to apply to supply transactions for the purposes of retail supply of the foundation load;¹³
- establish a procedure that is consistent with the procedure for the RBU making Foundation Load Trading Interval forecasts in respect of the Foundation Load in a particular Trading Interval;
- provide that the WBU may only supply electricity to the RBU for the purposes of retail supply of the Foundation Load, in accordance with a Foundation Load Trading Interval forecast;
- provide for a foundation transfer price for electricity (in \$/MWh) in a Trading Interval that is consistent with the modelled cost of electricity to the then Electricity Retail Corporation in that Trading Interval, based on:
 - Existing contracts for the acquisition of electricity by the then Electricity Retail Corporation, taking into account the terms and conditions of these contracts and including contracts with the then Electricity Generation Corporation; and
 - Information contained in the Mid-Year Review prepared by the Electricity Retail Corporation in respect of the financial years ending in each of the calendar years 2013 to 2017;¹⁴ and

¹² The *Segregation and Transfer Pricing Guidelines 2013* are accessible from the link on the PUO's website at <http://www.finance.wa.gov.au/cms/content.aspx?id=17335>

¹³ In respect of a period, the foundation load is the aggregate quantity of electricity in MWh consumed during that period by the Foundation Customers.

¹⁴ For the 2013-14 Government Mid-year Financial Projections Statement, refer to: http://www.treasury.wa.gov.au/cms/uploadedFiles/Treasury/State_finances/2013_14_midyear_review.pdf

- a procedure to apply in wholesale Force Majeure events.

In relation to the Additional Price Mechanism, the STP Guidelines require the RBU to establish a procedure for making nominations in respect of each Trading Interval and prohibit the RBU from supplying electricity to the WBU.

The STP Guidelines also include requirements in respect to the obligations of Synergy's RBU when submitting foundation and new supply load forecasts for Trading Intervals, the records it must keep, and how variances should be settled.

As noted above, the Foundation Transfer Price Mechanism is required to be given to the Minister. However, the Foundation Transfer Price Mechanism and the Additional Price Mechanism have not been, and are not required to be published.

Synergy has, however, provided a copy of these arrangements to the ERA for the purposes of its review.

Standard Product Arrangements

The Standard Product Arrangements were gazetted on 19 May 2014 under section 38(1) of the Act and 26(1) of the EGRC Regulations.

The Standard Product 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. Across all product types and durations, Synergy is required to offer a minimum:

- 150 MW for sale; and
- 100 MW for purchase.

The 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.

The Standard Product Arrangements specify the percentage spread between the Buy and Sell price. A maximum buy/sell spread of 25 per cent applied from 1 July 2014 to 31 December 2015. As of 1 January 2015, the maximum spread reduced to 20 per cent.

Synergy is required to publish details of historic prices and update the details on each occasion that it enters into a transaction. Additionally, Synergy must publish and update, on a monthly basis, information on price trends for Transactions in Standard Products.

Synergy is also required to develop and publish details of its procedures for entering into a Standard Product Agreement with an Approved Counterparty. A number of publicly available procedures have been produced by Synergy to address this requirement,¹⁵ including the:

¹⁵ Refer to the Standard Product Homepage for access to these procedures:
<http://wholesale.synergy.net.au/SitePages/Home.aspx>

- Standard Product Agreement, which outlines the process for entering into a Standard Product Agreement and requires that, to transact in Standard Products, an interested party must (among other things) be a WEM Market Participant, an Approved Counterparty, and have entered into a Standard Product Agreement;¹⁶
- Procedure for becoming an Approved Counterparty, which outlines the process that a party must comply with to become an Approved Counterparty to transact in Standard Products;
- Procedure for entering into transactions, dealing with limited availability and simultaneous offers; and
- Carbon Referencing Price (CRP) Methodology.

Details of the Standard Products offered by Synergy and any transactions entered into can be found on its website.¹⁷

¹⁶ For the form of the agreement between the EGRC and an Approved Counterparty refer to the Bilateral Trade Agreement for Electricity (Standard Products)

<http://wholesale.synergy.net.au/Documents/EGRC%20Standard%20Product%20Agreement.pdf>

¹⁷ <http://wholesale.synergy.net.au/SitePages/Home.aspx>

Appendix 2 Requirements for Consolidated Segmental Statements in the UK

In 2009, OFGEM introduced a Financial Information Reporting license condition,¹⁸ which aims to increase transparency of energy companies' revenues, costs and profits by requiring these companies to produce annual Consolidated Segmental Statements (**CSSs**) that segment the financial results of their supply and generation activities.

Last Year, OFGEM introduced a requirement for companies' CSSs to be independently audited, so that consumers can have confidence that the information reported is accurate and robust. Additionally, it is a requirement for CSSs to be published on company websites no later than four months after the end of their financial year.

Following a referral from OFGEM in 2014, the Competition and Markets Authority (**CMA**) launched a full competition investigation of the energy market. The CMA published its "Provisional Decision on Remedies"¹⁹ in March 2016, which included a number of provisional recommendations in relation to suppliers' reporting requirements. OFGEM are awaiting CMA's final report, at which point it will put in place a programme to take forward CMA's recommendations in this area.

OFGEM's guidelines for the preparation of CSSs (the guidelines) are provided here: <https://www.ofgem.gov.uk/publications-and-updates/guidelines-preparing-consolidated-segmental-statements>

The guidelines are divided into a number of sections, each of which is described in turn below.

Interpreting the Financial Information

Under the guidelines, the company is required to provide a clear and full explanation of how it defines the terms revenues, costs and profits, so as to enable understanding of what the information published does and does not represent. The explanation should:

- describe how the company defines domestic and non-domestic supply business segments;
- describe how the company defines conventional and renewable generation business segments;
- describe the methodology or methodologies used to allocate marketing, shared and corporate costs across generation, supply and other activities; and
- report all the material individual cost items included in each of the cost categories in the template provided in Appendix 1 of the guidelines (presented below), and describe how each of these costs, such as Feed in Tariff costs and Renewable Obligation costs, are allocated across the segments.

The template provided in Appendix 1 of the guidelines is represented below.

¹⁸ Standard Condition 19A of the Gas and Electricity Supply Licences and Standard Condition 16B of the Electricity Generation Licences

¹⁹ <https://assets.publishing.service.gov.uk/media/5706757340f0b6038800003b/Provisional-decision-on-remedies-EMI.pdf>

	Unit ¹	Electricity generation		Aggregate generation business ¹³	Electricity supply		Gas supply		Aggregate supply business ¹³
		Conventional	Renewable		Domestic	Non-domestic	Domestic	Non-domestic	
		20xx	20xx	20xx	20xx	20xx	20xx	20xx	20xx
Total revenue	£M	£0	£0	£0	£0	£0	£0	£0	£0
Revenue from sales of electricity and gas ²	£M	£0	£0	£0	£0	£0	£0	£0	£0
Other revenue ³	£M	£0	£0	£0	£0	£0	£0	£0	£0
Total operating costs	£M	£0	£0	£0	£0	£0	£0	£0	£0
Direct fuel costs ⁴	£M	£0	£0	£0	£0	£0	£0	£0	£0
Transportation costs ⁵	£M	£0	£0	£0	£0	£0	£0	£0	£0
Env. & social obligation costs ⁶	£M	£0	£0	£0	£0	£0	£0	£0	£0
Other direct costs ⁷	£M	£0	£0	£0	£0	£0	£0	£0	£0
Indirect costs ⁸	£M	£0	£0	£0	£0	£0	£0	£0	£0
EBITDA ⁹	£M	£0	£0	£0	£0	£0	£0	£0	£0
DA	£M	£0	£0	£0	£0	£0	£0	£0	£0
EBIT	£M	£0	£0	£0	£0	£0	£0	£0	£0
Volume ¹⁰	TWh, m therms	-	-	-	-	-	-	-	NA
WACO F/E/G ¹¹	£/MWh, p/th	0	0	0	0	0	0	0	NA
Customer numbers ¹²	000s	NA	NA	NA	'000	'000	'000	'000	'000

In relation to providing this template, OFGEM noted that it was important for consideration of energy costs to be based on robust evidence, and that consumers have an accurate understanding of the cost drivers behind their bills, which is harder to achieve when companies and opinion-formers calculate and present cost information differently²⁰.

OFGEM considered that the issue required coordination and it worked with the companies to agree a common set of cost categories for the statements and to present bill breakdown information. OFGEM focussed on showing network costs and environmental and social obligations costs separately, and sought to strike a balance between having enough categories to allow people to understand the main cost drivers, whilst keeping the breakdown simple and ensuring the greater detail does not undermine competition²¹.

The resulting template and the guidelines set out requirements around what the information listed in the first column represents, how the information should be presented in the CSS, and, in some instances, how the information can be calculated.

The guidelines specify that the CSS must include electricity and gas volumes, the Weighted Average Cost Of Electricity (**WACOE**) and Gas (**WACOG**) and customer numbers.

In relation to requirements around the information listed in the first column, the guidelines provide the following advice as to what should be included:

- Revenue: for generation, this means revenue from sales of electricity output generated; or if the business operates in a tolling-agreements structure, the revenues received from the capability or capacity payments, including any account

²⁰ https://www.ofgem.gov.uk/sites/default/files/docs/2014/10/transparency_consultation_0.pdf

²¹ In relation to environmental and social obligations, OFGEM noted that there are a number of government policies aimed to achieve different environmental and social goals, with most of them imposing costs on companies, who in turn pass them through to consumers, to a greater or lesser extent. For example, the Carbon Price Floor, by increasing the cost of carbon emissions, impacts the profitability of electricity generators, which tends to increase the wholesale electricity prices that suppliers face. The design of individual policies varies, which means that their impacts on companies and consumers also vary. OFGEM therefore considered that there was a good case for greater transparency of the real costs that individual policies impose on suppliers and, ultimately, consumers each year, whilst also allowing government to evaluate the impact of its policies with robust data.

of associated fuel costs (with an explanation of the latter type of revenues provided). For supply, revenue is for electricity and gas sales, with the notes including guidance on how dual fuel discounts and Government social tariffs should be deducted. Other revenues includes revenue not covered above e.g., for generation this may include capacity payments, other physical options and ancillary services;

- **Direct Fuel Costs:** Generation should include the delivered input cost for fuel, irrespective of the business model of the Relevant Licensee or its Affiliate. If the business operates in a tolling-agreements structure the direct fuel costs for generation may be presented in the form of a footnote to the template that describes the volume, total cost, and average cost. Relevant Licensees should exclude all emission costs, such as Emissions Trading System (**EU ETS**) and Carbon Price Floor (**CPF**). Supply should include aggregate electricity and gas costs, including the wholesale energy cost, and losses, the energy element of Reconciliation by Difference (**RbD**)²², balancing, and shaping costs²³. Relevant Licensees should not make any adjustments for the costs associated with emissions, which are assumed reflected in the wholesale price of electricity;
- **Transportation Costs:** for generation should include all network costs and Balancing Services Use of System (**BSUoS**)²⁴ charges relating to generation. Supply should include all network costs and Balancing Services Use of System charges relating to supply, and the transport element of RBD costs. Metering costs should not be included in this cost category;
- **Environmental and Social Obligation Costs -** Generation should include all emission costs, and licensees should specify (in a footnote) the volume of any granted free carbon allowances. Supply, should include such costs as: Renewable Obligation Certificates, feed in tariffs, contracts for difference and capacity market costs under the Electricity Market Reform, Energy Company Obligation, Levy Exemption Certificates, Assistance for Areas with High Electricity Distribution Costs, and administration of governmental social schemes.²⁵

²² Reconciliation by Difference (RBD) is the method of reconciling the difference between actual (metered) and deemed (estimated) measurements of gas, and contains elements including both transportation and energy commodity charges for gas supply meter points. Refer to point 16 of the following link for a simple explanation of this settlement process.

https://assets.publishing.service.gov.uk/media/5501b87c40f0b6140a00001e/Settlement_and_metering.pdf

²³ OFGEM intended that for suppliers, these costs should be as comparable as possible (after hedging was factored in), with observed wholesale gas and electricity prices.

²⁴ The BSUoS charge recovers the cost of day to day operation of the transmission system. Generators and suppliers are liable for these charges, which are calculated daily as a flat tariff across all users. Refer to <http://www2.nationalgrid.com/bsuos/>

²⁵ The Energy Company Obligation (ECO) is a government energy efficiency scheme in Great Britain to help reduce carbon emissions and tackle fuel poverty. Refer to: <https://www.ofgem.gov.uk/environmental-programmes/eco>. Levy Exemption Certificates provide suppliers with some of the evidence needed to demonstrate that the electricity supplied to UK Business Customers is Climate Change Levy exempt, e.g., for generation by renewables. The final customer realises the exemption from the tax. Refer to <https://www.ofgem.gov.uk/environmental-programmes/climate-change-levy-ccl-exemption>. The North of Scotland is currently the only area specified to receive Assistance for Areas with High Electricity Distribution Costs, which National grid recovers through a charge on all Suppliers. Refer to: <http://www2.nationalgrid.com/UK/Industry-information/System-charges/Electricity-transmission/Assistance-for-areas-with-high-distribution-costs/>.

- Other Direct Costs²⁶ - Generation should include market participation costs, including Elexon/Xoserve²⁷ administration costs. Supply should in addition include, brokers' costs and intermediaries' sales commissions and any 'wider' smart metering programme costs (e.g., Data Communications Company related).
- Indirect Costs - should be Licensees' own internal operating costs, including sales and marketing costs, bad debt, costs to serve, IT, staffing costs, billing and all meter costs, including smart meter costs (e.g., linked to rollout or asset rental, not Data Communications Company related).
- EBITDA - EBIT means earnings before interest and tax; and EBITDA means earnings before interest, tax, depreciation and amortisation.
- Volumes - should be supplier volumes at the meter point (i.e., net of losses). Generation volumes should be the volume of power that can actually be sold in the wholesale market, i.e., generation after the losses up to the point where power is received under the Balancing and Settlement Code²⁸ but before subsequent losses.
- Weighted Average Cost of Fuel/Electricity/Gas - for generation and supply, this means the "Direct fuel costs" line divided by the "Volume" line, shown as £/MWh or p/th. For generation, the costs of emissions (e.g., EU ETS and CPF) should be added to "Direct fuel costs" before dividing by the "Volume".
- Customers Numbers²⁹ - should be the average number of electricity and gas, domestic and non-domestic meter points (MPANs and MPRNs)³⁰ during the reporting year, calculated by adding monthly customer numbers and dividing by 12.
- Aggregate Supply and Generation Business - The generation and supply aggregation columns (aggregation of conventional and renewable generation, and domestic and non-domestic electricity and gas supply businesses) sums the horizontal generation and supply figures, thus facilitating reconciliation to group accounts.

Exceptional Items and Reconciliation

Further, in relation to the preparation of the CSS, it is expected that, where issues relating to the data are unexpected or complex the issues are set out in full; the revenues, costs and profits only reflect company activities relating to that year of operations; and reconciliations are explained in full, in the form of a numerical statement table and written

²⁶ OFGEM proposed that this category contain those costs that can be described as market participation costs, and which do not fit naturally in the other categories.

²⁷ Elexon administers the rules that govern electricity trading i.e., the Balancing and Settlement Code <https://www.elexon.co.uk/bsc-related-documents/balancing-settlement-code/bsc-sections/>. Xoserve manages the interfaces and transactional services between the major gas transporters operating in Britain and gas shippers. It provides key services that support the contractual and licence obligations of the major gas transporters.

²⁸ The rules that govern electricity trading <https://www.elexon.co.uk/bsc-related-documents/balancing-settlement-code/bsc-sections/>.

²⁹ OFGEM proposed that companies disclose the average number of "customer accounts" for their supply businesses to complement the "volume" information that is also disclosed, allowing the calculation of revenues, costs and profits on a per-customer basis.

³⁰ MPAN refers to the 'Meter Point Administration Number' that uniquely identifies electricity supply points, whilst the gas equivalent, is the MPRN, i.e., the Meter Point Reference Number.

statement. The explanation of the reconciliation should enable an individual to understand as much as can be reasonably expected as to how revenues and profits reconcile to the company's audited figures.

Together the explanations under this requirement should be sufficient to inform an industry stakeholder of the financial data's proper interpretation and context (e.g., any structural constraints the business operates within, such as tolling agreements).

Transfer Pricing Methodology

Additionally, companies are required to provide a clear and full explanation of it and its Affiliates' transfer pricing methodology, so as to enable an industry stakeholder to understand as much as can be reasonably expected about the transfer pricing methodology adopted. The explanation should describe:

- the allocation of financial risk between group companies and / or business segments (e.g., treatment of internal tolling agreements or capability/capacity payments;
- how the methodology relates to an arm's length measure, for example open market prices and/or comparable third party costs such as broker fees; and
- the treatment of allocated costs and corporate charges (e.g., head office charges).

Treatment of Joint Ventures and Associates

Lastly, companies must ensure that the information provided in the CSS includes its share of revenues, costs, profits and volumes of any Joint Ventures and Associates, and account for them as follows:

- the share of revenues of Joint Ventures and Associates to be included within revenue;
- the share of the profit before tax of Joint Ventures and Associates to be included with Earnings Before Interest and Taxes (EBIT) and Earnings Before Interest, Taxes, Depreciation and Amortisation (EBITDA); and
- the share of the generation volumes of Joint Ventures and Associates to be included within the generation volumes.

For each of the items, the company's share of the income and expenses of a Joint Venture or Associate should be combined line by line with similar items in the company's CSS or reported as separate line items in the company's CSS.

Appendix 2

Appendix 2 of the guidelines provides a template for indicating where particular functions, and profit and loss, reside within a company. Appendix 2 is represented below.

Business function	Generation	Supply	Not included in CSS
Operates and maintains generation assets			
Responsible for scheduling decisions			
Responsible for interactions with the Balancing Market			
Responsible for determining hedging policy			
Responsible for implementing hedging policy / makes decisions to buy/sell energy			
Interacts with wider market participants to buy/sell energy			
Holds unhedged positions (either short or long)			
Procures fuel for generation			
Procures allowances for generation			
Holds volume risk on positions sold (either internal or external)			
Matches own generation with own supply			
Forecasts total system demand			
Forecasts wholesale price			
Forecasts customer demand			
Determines retail pricing and marketing strategies			
Bears shape risk after initial hedge until market allows full hedge			
Bears short term risk for variance between demand and forecast			

Companies should indicate where functions reside by ticking the appropriate cell of the table. If profits or losses are not recorded in the same area, then an “F” is used to indicate where the function resides and a “P/L” is used to indicate where the profits or losses are recorded. If a payment is made or received by either generation or supply in lieu of a profit or loss, this is referenced by way of a footnote.

The “Not included in CSS” column includes entries if neither the Generation nor Supply Segments, are responsible for a particular function, but that function is undertaken by the Relevant Licensee or an Affiliate. If a function is not undertaken then no entry is recorded.

Access to companies’ historical CSSs in the UK is provided here:

https://www.ofgem.gov.uk/system/files/docs/2016/05/energy_companies_consolidated_sgmental_statements_css_gb.pdf

Appendix 3 Analysis of Customised Products (Confidential)

The following sections provide:

- a descriptive analysis of the RFQ Log for Customised Products;
- a review of whether the Standard Product market provides a pricing reference for the RFQ process, and the balancing and STEM markets through:
 - a comparison of executed Customised Product pricing to Standard Product Pricing, for contracts with equivalent terms, and to average balancing and STEM prices for the contract term;
 - a comparison of non-executed Customised Product pricing and Standard Product Pricing, for contracts with equivalent terms, and to average balancing and STEM prices for the contract term; and
 - a detailed look at pricing in response to RFQs submitted by [REDACTED] [REDACTED] and how this compares to Standard Product pricing.

Analysis of Customised Products

[REDACTED]

[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

[REDACTED]

[REDACTED]
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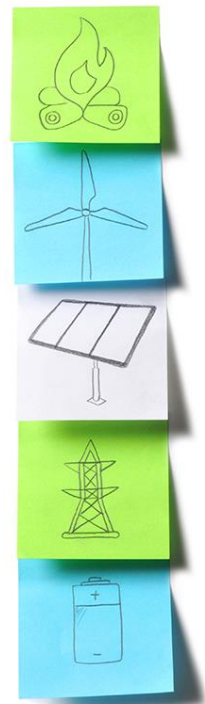
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Appendix 6 Deloitte Report

Standard Products Spread Review

Economic Regulation Authority

Final Report – 3 March 2016



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Executive summary

The Standard Products regime

The Economic Regulation Authority ('ERA') is conducting its yearly review of the Electricity Generation and Retail Corporation Regulatory Scheme. The ERA's findings will form a report to the Minister for Energy. One of the focuses of the ERA's review is the Standard Product arrangements, and more specifically, the level of the regulated bid-ask spread ('spread') on Standard Products.¹

Standard Products are off-the-shelf electricity futures with a bid and ask price. They complement retailers' and generators' long term bilateral contracts for electricity by providing small amounts of electricity with locked in prices and quantities—thereby removing or reducing these participants' exposure to the price variations on the Short Term Energy Market ('STEM') and balancing market.

Under the Standard Products regime, Synergy's Wholesale Business Unit ('WBU') must offer these products to the market. While Synergy's WBU decides the bid and ask price, the maximum spread between the two is regulated. The spread is currently set to not exceed 20%.²

Spreads typically represent the risk margin that traders receive to bear, and that market participants pay to avoid, spot price volatility. In the regulated setting the spread also ensures that Synergy cannot exercise market power and make Standard Products unattractive for the purpose of discouraging new retail and generation entrants. By way of example, the spread achieves this because if Synergy's WBU chooses to set a very low buy price (that would not be attractive to generators) it must correspondingly offer a low sell price at which it must sell electricity to the market.

The ERA has requested Deloitte Access Economics to outline an appropriate methodology for deriving the spread in the future.

Purpose of setting a regulated spread

The objectives of the Standard Products regime are to:

- Function as a price discovery mechanism
- Facilitate new market entrants via standard products that lower barriers to entry
- Enable market participants to rebalance their portfolios with simple products.

The objective outlined by the ERA for the broader Electricity Generation and Retail Corporation Regulatory Scheme of which the Standard Products regime is a part, is to:³

'mitigate the increased potential for exercising market power, which arises due to the merger of Synergy, by ensuring a level playing field for competitors and new entrants, in order to facilitate competition.'

To promote these objectives, over time the spread for Standard Products should reflect the spread that would prevail in WA if Standard Products were being offered competitively.

¹ ERA, 2015 Annual report to the Minister for Energy on the effectiveness of the EGRC Regulatory Scheme, Discussion paper, November 2015.

² Western Australian Government Gazette, PERTH, MONDAY, 19 MAY 2014 No. 73, Schedule, item 2.

³ ERA, 2015 Annual Report to the Minister for Energy of the Effectiveness of the EGRC Regulatory Regime, Discussion paper, November 2015.

Setting a competitive spread, however, does not necessarily mean that it should be set equal to the spreads that prevail in other competitive futures markets. Every market has unique characteristics that affect how they operate. Therefore, the spread should reflect a competitively set spread that would prevail in WA if the market for Standard Products was competitive.

The only way to test whether the regulated spread is right for the market is to examine the liquidity of Standard Products. Standard Products will only meet the regime's objectives (such as to function as a price discovery mechanism, or facilitate new entry) if they are transacted by the market, and hence reflect competitive outcomes.

There is no single theoretical approach to setting the spread that will reflect its objective

We have not been able to identify a single approach that will meet the objective of the Standard Product regime. As such, we have explored and outlined a number of possible approaches for setting the spread. We have then combined the most robust and relevant of these approaches into a single proposed methodology that we believe best meets the objective of reflecting a spread that would be set in a competitive market in WA.

Various approaches to determining the spread

The first approach is to set the spread with reference to the volatility of the electricity spot market. This represents the risk that the WBU incurs by offering spreads in an illiquid market where it cannot balance the sale of an electricity future by purchasing a corresponding future.

A primary assumption underpinning this approach is that historical volatility of the spot market is a good predictor of future volatility.

We have described this approach in full in the paper, but have undertaken only a high level calculation of the spreads for quarterly flat and quarterly peak products to illustrate the magnitude of the spreads that would prevail under this approach (we have not calculated the spreads for yearly products for this example). If the approach is adopted, the next step is to consider the model specification and treatment of factors that should be controlled for in the data such as:

- If the distribution is not normal, a different distribution may be used
- The time period of historical data—the relevant time period may depend on changes to the market and market conditions, or alternatively adjustments may be needed to account for these
- Removing one off impacts such as the carbon price.

We note, however, that precise data specifications are unlikely to be warranted given the context in which this approach is recommended be used (that is, as a starting point as discussed below).

In this paper we present the results using one and 1.5 standard deviations—representing the WBU having either a 69% or 77% chance of not losing on a trade. The number of standard deviations used would depend on judgment as to the appropriate level of risk for the WBU to bear.

The second approach is to set the spread with reference to the spread for the National Electricity Market ('NEM') electricity futures listed on the Australian Stock Exchange ('ASX'). This represents spreads in a competitive and liquid market. We have sought to take account of the lower price volatility (that typically narrows spreads), and lower liquidity (that typically widens

spreads) which prevails and is expected to continue to prevail in WA, by adopting the maximum rather than the mean spreads in the ASX.

The third approach is to set the spreads with reference to the maximum spreads for market makers in the NZ electricity futures market that are traded on the ASX. Market makers improve liquidity in markets by buying and selling products, and profiting from the spread. The WBU plays a similar role in the provision of Standard Products although it takes on more risk.

Other approaches that we have explored include examining the spreads for market makers in the UK; identifying spreads for similar products offered in WA by other traders; using the relationship between spreads and market factors that have been derived by academic and market practitioners; and basing the spread on the WBU's costs. These approaches, however, were impractical because they would create perverse incentives; would not have sufficient data to underpin their robust estimation; and would not account for all relevant market factors.

The implied spreads under the first three approaches are shown in the table below.

Table 1 Implied spreads for Standard Products (SP)

Product	Volatility approach				ASX benchmark approach			Market maker benchmark approach	
	Flat SP 1 stdev	Flat SP 1.5 stdev	Peak SP 1 stdev	Peak SP 1.5 stdev	Flat SP	Peak SP	Yearl y SP	Contracts under AU \$28	Contracts over AU \$28
Q2 2016	14.1%	20.5%	12.4%	18.0%	5.1%	8.1%		9.1%	4.8%
Q3 2016	14.9%	21.6%	15.6%	22.5%	5.1%	8.1%		9.1%	4.8%
Q4 2016	7.0%	10.4%	9.7%	14.1%	5.1%	8.1%		9.1%	4.8%
Q1 2017	6.2%	9.1%	8.3%	12.2%	5.1%	8.1%		9.1%	4.8%
Q2 2017	14.1%	20.5%	12.4%	18.0%	5.1%	8.1%		9.1%	4.8%
Calendar 2017							4.3%	9.1%	4.8%
FY 2017/18							4.3%	9.1%	4.8%

Source: Deloitte Access Economics analysis

Combining approaches into a single methodology

In illiquid markets, wider spreads are needed to compensate traders or market makers for the risk that they will not be able close out their position. However, in such cases it is often narrower spreads that would be needed in order to promote additional liquidity that would reduce this risk. The reinforcing relationship between liquidity and spreads is a key consideration in combining approaches into a single methodology.

We do not recommend applying benchmarks of spreads from competitive markets immediately. This is because there is no guarantee that lower spreads will improve liquidity, such that the WBU is able to manage its risk. If a narrowing of the spread does not promote liquidity, this would indicate that Standard Products are not widely required by the market.

Therefore, we suggest a cautious approach—tighten spreads to a lower level to improve liquidity, but ensure that the WBU's risk position is reasonable. This is done by observing liquidity. If liquidity improves then this implies:

- There is a market for this product
- The WBU can manage its risk.

If liquidity is observed to improve, the lowering of spreads can continue until they reflect competitive benchmarks.

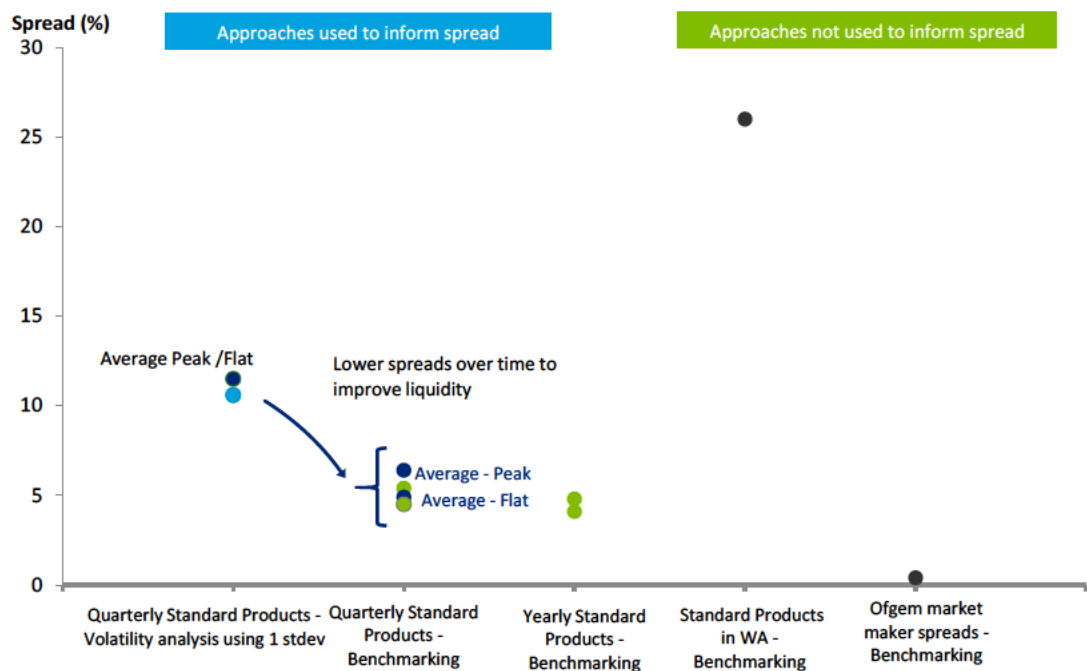
To effect this change, we suggest that the spreads initially be set via the application of the first approach, which provides the WBU with a reasonable chance to profit from its trades in a relatively illiquid market.

As noted, different levels of risk for the WBU to bear can be selected (as measured by the standard deviation). A trader in a competitive market would expect to profit from offering electricity futures meaning that the WBU should be afforded a greater than 50% chance of making a profit on any single trade. Our analysis indicates that spreads in WA currently provide the WBU with around an 84% chance of making a profit, which is also the chance of the market losing on a trade. The high chance of the market losing on a trade is likely to be a significant driver of the Standard Products market's current illiquidity. In our judgment, using one standard deviation, providing the WBU with a 69% chance of making a profit, is reasonable as a starting point.

If liquidity improves, the spreads could be lowered to the benchmark spreads found in competitive markets (adjusted for specific WA market characteristics where possible). During the period over which spreads are lowered, the operation of the futures market should be monitored. This would allow the ERA to test whether lower spreads lead to a more liquid market and whether the WBU has more opportunities to balance its trades.

The spreads implied by this methodology are shown in the figure below.

Figure 1: Implied spreads under proposed methodology⁴



Source: Deloitte Access Economics analysis

⁴ For the volatility approach, the average of the spreads for quarterly flat and quarterly peak products are shown in this figure.

1 Introduction

As part of the merger arrangements for Verve Energy and Synergy on 1 January 2014, the Electricity Generation and Retail Corporation Regulatory Scheme was put in place to impose requirements on the merged entity, Synergy.⁵ By imposing ring fencing, business segregation, transfer pricing and non-discriminatory wholesale electricity trading arrangements, the scheme seeks to ensure that Synergy cannot limit competition in the electricity generation and retail markets.

One element of the scheme is the Standard Products arrangements, which require Synergy's ring fenced Wholesale Business Unit ('WBU') to make available a minimum amount of electricity for sale or purchase, with a delivery date in the future. The bid-ask spread ('the spread'), as defined as $(ask\ price - bid\ price) / (ask\ price)$, for these products is regulated, which helps to ensure that Synergy does not treat its own generation and retail arm more favourably than other market participants and that the spread mirrors a competitive market outcome.

As required by the Electricity Generation and Retail Corporation Regulatory Scheme, the Economic Regulation Authority ('ERA') is undertaking its yearly review of this scheme. The ERA's findings will form a report presented to the Minister for Energy. One of the focuses of the ERA's review is the Standard Products arrangements and more specifically, the level of the spread.⁶ The ERA has requested Deloitte Access Economics to outline a methodology for deriving the spread.

1.1 Our approach

We have examined several approaches to setting a regulated spread. Broadly, these approaches are based on measuring market volatility and benchmarking the spread against spreads in competitive markets, while having consideration of specific WA market factors.

We have then taken the relevant information that these different approaches provide and combined it into an overarching methodology that is consistent with the theoretical underpinnings of a spread in a competitive market.

This remainder of this paper is structured as follows:

- Chapter 2 – Introduces the operation and objective of the Standard Products regime and presents background on the WA electricity market
- Chapter 3 – Examines possible approaches to setting the spread, and discusses the strengths and weakness of adopting each
- Chapter 4 – Discusses how the different approaches to setting the spread can be combined into a single methodology
- Chapter 5 – Analyses force majeure clauses that apply to Standard Products and examines whether they could be clarified.

⁵ ERA, The Electricity Generation and Retail Corporation (EGRC) Regulatory Scheme.

⁶ ERA, 2015 Annual report to the Minister for Energy on the effectiveness of the EGRC Regulatory Scheme, Discussion paper, November 2015.

2 Background

2.1 Overview of the Standard Products regime

On 1 January 2014 Synergy and Verve were merged to become the Western Australian State owned retail generation and retail electricity provider, named Synergy. The newly merged Synergy consists of four ring fenced units; the Generation Business Unit ('GBU'), WBU, Retail Business Unit ('RBU') and shared service operations.

The WBU is a ring fenced unit that acts as the broker between the GBU and RBU, and the GBU and the rest of the market. Its functions include managing the transfer pricing process between the GBU and RBU, establishing bilateral trading agreements, operating wholesale supply contracts and managing the Standard Products regime.⁷

A WA Government Gazette to the *Electricity Corporations Act 2005* outlines the Standard Products regime whereby Synergy's WBU must make available a minimum amount of energy for sale or purchase.⁸ The purpose of these Standard Products, when the regime was established, was to:⁹

- Function as a price discovery mechanism
- Facilitate new market entrants via standard products that lower barriers to entry
- Enable market participants to rebalance their portfolios with simple products.

Under the regime, the spread must not currently exceed 20%.¹⁰ Spreads typically represent the risk margin that traders receive to bear, and that market participants pay to avoid, spot price volatility. In the regulated setting spreads also have the effect of ensuring Synergy cannot exercise market power and make these products unattractive for the purpose of discouraging new retail and generation entrants, or from rent seeking by setting high Standard Product prices. By way of example, the spread achieves this because if Synergy's WBU chooses to set a very low buy price (that would not be attractive to generators) it must correspondingly offer a low sell price at which it must sell electricity to the market.

The 20% spread was set based on:¹¹

- The average spreads in the Short Term Energy Market and Futures Market (NEM)
- Anticipated activity within the regime
- Synergy's risk exposure
- A judgement-based decision taking into account that less liquid markets tend to have wider spreads.

Under the regime, the Standard Products include flat quantity and peak quantity (8 am – 10 pm on business days) electricity in increments of 0.5MWh per trading interval. These must be offered over a number of periods (e.g. Q2 2015, Q3 2015 etc.).¹²

⁷ Synergy, Annual Report 1 July 2013 – 30 June 2014.

⁸ Western Australian Government Gazette, PERTH, MONDAY, 19 MAY 2014 No. 73, Schedule, item 2.

⁹ PUO, Standard Product Regime, Market Participant briefing, 9 April 2014.

¹⁰ Western Australian Government Gazette, PERTH, MONDAY, 19 MAY 2014 No. 73, Schedule, item 2.

¹¹ Public Utilities Office, Standard Product Regime Market Participant Briefing Merger Implementation Group, 9 April 2014.

2.2 The objective of the regulated spread

The spread should promote the objectives of the Standard Products regime. Additionally, as the Standard Products regime is part of a broader the *Electricity Generation and Retail Corporation Regulations 2013* that impact Synergy's operations, the spread should meet the objective of these regulations as developed by the ERA during its 2014 report to the Minister to guide its assessment, being:¹³

‘mitigate the increased potential for exercising market power, which arises due to the merger of Synergy, by ensuring a level playing field for competitors and new entrants, in order to facilitate competition’.

In the context of the Standard Products regime, these objectives are all underpinned by spreads that mirror the outcomes of competitive electricity futures markets. For example, both sets of objectives seek a level playing field that facilitates new entry which requires Standard Product prices that reflect efficient and competitive outcomes. Additionally, in order for the regime to act as a price discovery mechanism, the spread must reflect the forward prices that would prevail if the market was competitive.

However, setting a spread in WA is not necessarily a matter of immediately adopting the spreads that prevail in other competitive markets because:

1. There are differences in the WA market when compared to other markets (that may change only over the long term), which means spreads may not be the same as those markets
2. Current market conditions (that could change in the short term) need to be considered or Synergy would be undercompensated for the risks it currently faces.

These are described below.

2.2.1 Market differences

The spread in WA should not necessarily be the same as the spread in any competitive futures market. This is because every market has unique characteristics that affect how they operate. Therefore, the spread should reflect a competitively set spread that would prevail given the unique aspects of the WA market and Standard Products regime (these are discussed in more detail in section 2.4), which include:

- The WA wholesale and retail markets are relatively small meaning liquidity may never be as high as in (for example) the NEM futures markets
- Electricity price volatility is lower than in the NEM futures market.

As such, spreads in a competitive WA market may be higher than in the NEM. As such, in this paper where benchmark approaches to setting the spread are considered, adjustments are made to reflect these market differences where possible.

2.2.2 Current market conditions

As a result of current market conditions in the WA futures market, it may not be appropriate to immediately adopt competitive spreads. Doing so would undercompensate Synergy for the risk it bears from providing Standard Products. Current market conditions include:

¹² Western Australian Government Gazette, PERTH, MONDAY, 19 MAY 2014 No. 73.

¹³ ERA, 2015 Annual Report to the Minister for Energy of the Effectiveness of the EGRC Regulatory Regime, Discussion paper, November 2015.

- Even for the given size of the wholesale and retail markets in WA, the WA futures markets is currently illiquid, which may be driven by high spreads (as compared to benchmarks found in this paper)
- Synergy is currently required to offer standard products whereas in most markets traders are only incentivised to offer standard products.¹⁴

In this paper, while we note that the objective is to set a spread that would prevail if the WA futures market was competitive, moving immediately to competitively priced spreads would undercompensate for the risks that Synergy's WBU currently face in offering Standard Products in an illiquid market.

2.2.3 Testing spreads

Given market differences, the only way to test whether the regulated spread is right for the WA market is to examine the liquidity of Standard Products. As spreads narrow, market liquidity can be expected to increase as the 'cost' of purchasing Standard Products is reduced. Similarly, a competitive market will allow the WBU to balance its trades and therefore will support the narrower spreads. In this way, liquidity and spreads have a reinforcing effect on each other, which is discussed more throughout this paper. If the liquidity and spreads do not move together, then it is possible that:

- The spreads are sufficiently narrow so that the market is liquid and mirroring competitive outcomes
- The Standard Products are not required by the market and the market will remain illiquid regardless of the narrowness of the spread.

2.3 The role of Synergy's WBU in mirroring a competitive market

A spread in a competitive (or relatively competitive) market may represent:

- The difference between the price at which buyers are willing to buy and sellers are willing to sell¹⁵
- In many markets including futures, market makers are contracted and incentivised to buy and sell the product in order to provide liquidity to the market. The spread that they offer represent a part of their fee and compensation for risk.¹⁶

In a competitive market, a trader or market maker is compensated for the risk it takes. In the electricity futures market, this is the risk of not being able to close out a trading position and being subject to spot market volatility to balance trades (the size of this risk as it relates to the market's liquidity is discussed in 2.4).

While conceivably the WBU risk is lessened because of Synergy's generation position—potentially allowing the WBU to avoid transacting in the spot markets—there are strong reasons why this should not be used to justify a narrower spread.

¹⁴ This could alternatively be classified as a 'fundamental market difference' if it is assumed that this regulatory design characteristic will not change in the future.

¹⁵ Fletcher J Strum, Trading Natural gas: A non technical guide 1997, p. 33

¹⁶ ASX market maker arrangements, ASX market making 2016 <<http://www.asx.com.au/products/equity-options/market-making.htm>>

Firstly, Synergy's WBU is a ring fenced entity. It is responsible for:¹⁷

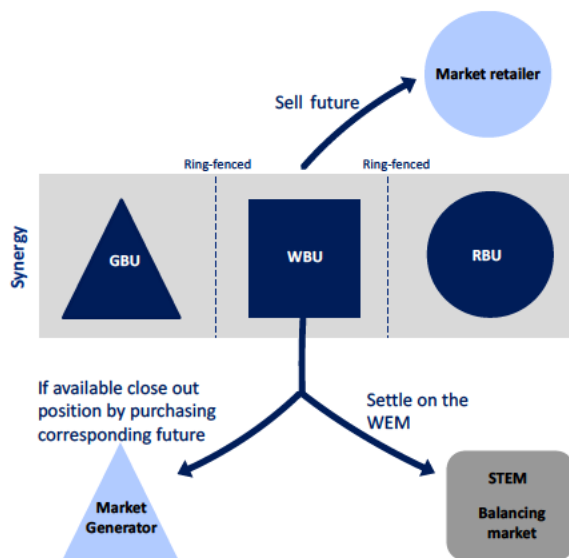
- Operations involving the wholesale acquisition or supply of electricity (including pricing in respect of such acquisition or supply)
- Operations involving the acquisition or supply of wholesale products (including pricing in respect of such acquisition or supply).

As a ring fenced entity responsible for pricing, the WBU should be treated as its own profit making entity that cannot rely on the GBU to balance its trades.

Furthermore, even if a trader is asset backed (i.e. a generator) and could supply from its own generation rather than needing to purchase electricity from the spot market, its spread would not be materially different from a standalone trader. Having asset backing is the price that this trader has paid to avoid the spot price risk. When selling an electricity future in a competitive market, this trader would still expect to receive a market price for selling its futures that would take account of spot price risk, rather than a price that is based on its cost of generation alone.

The diagram below demonstrates the WBU's options to settle its trades if it sells an electricity future.

Figure 2: WBU options to balance the sale of a future



Source: Deloitte Access Economics

In the diagram:

- The WBU sells an electricity future
- To meet its obligation it will purchase a corresponding electricity future from a market generator, if a future is available
- If the WBU cannot buy a future, it must purchase electricity on the spot markets when the future that the WBU sold reaches delivery date.

Allowing the WBU to be compensated for the risk of an unbalanced trading position is consistent with OFGEM's treatment of regulated futures providers. OFGEM's Market Maker obligations (discussed in section 3.4) require a number of vertically integrated gentailers¹⁸ to

¹⁷ WA Electricity Corporations (Electricity Generation and Retail Corporation) Regulations 2013.

¹⁸ OFGEM, Wholesale power market liquidity: final proposals for a 'Secure and Promote' licence condition, 12 June 2013.

offer electricity futures in small sizes. Nevertheless, OFGEM noted in respect of these obligations:¹⁹

‘When a firm has open positions it will incur the risk that the price changes in the meantime – the cost associated with this will arise from holding an amount of risk capital’

And:²⁰

‘it potentially exposes S&P licensees to a risk from holding an open position, for example from having procured 5MW in order to service a 0.5MW trading request. In cases where the price moved unfavourably before being able to close their open position, proposed S&P licensees would make a loss on SMA trades. We have therefore revised the pricing rule to allow licensees to add an objectively justifiable risk premium to cover the risk associated with trading in small clip sizes.’

2.4 Factors influencing competitive spreads

There are a number of factors that influence spreads in a competitive market. The table below outlines some common factors that have been observed by academics and market practitioners, and which have general consensus in academic literatures, as affecting spreads.

Table 2 Factors influencing the spread

Factor	Relationship	Intuition
Price Volatility / inventory carrying cost ²¹	Positive	Compensation for the price risk borne by the market maker while the security is held in inventory ²²
Liquidity / volume / market value of the firm ²³	Inverse	Similar to volatility, a less liquid market increases the risk of an unbalanced trade position and price risk. The value of the firm reflects the depth of the demand for the stock, reflecting liquidity. ²⁴
Adverse selection costs / disagreement amongst market analysts regarding the firms' earnings ²⁵	Positive	Market makers may trade with individuals who are better informed about the expected price movement of the underlying security ²⁶

¹⁹ OFGEM, Wholesale power market liquidity: statutory consultation on the 'Secure and Promote' licence condition - Impact Assessment, 20 November 2013.

²⁰ OFGEM, Wholesale power market liquidity: statutory consultation on the 'Secure and Promote' licence condition, 20 November 2013

²¹ Zhanga M, Russell R, Determinants of Bid and Ask Quotes and Implications for the Cost of Trading, 2007.

²² Journal of Financial Economics, Modelling the bid/ask spread: measuring the inventory-holding premium, Nicolas P.B. Bollena, Tom Smith, Robert E. Whaley, 2004

²³ Zhanga M, Russell R, Determinants of Bid and Ask Quotes and Implications for the Cost of Trading, 2007.

²⁴ Grefouriou A, Ioannidis C, Information asymmetry and the bid-ask spread: evidence from the UK, Brunel University, 2002.

²⁵ Grefouriou A, Ioannidis C, Information asymmetry and the bid-ask spread: evidence from the UK, Brunel University, 2002.

²⁶ Journal of Financial Economics, Modelling the bid/ask spread: measuring the inventory-holding premium, Nicolas P.B. Bollena, Tom Smith, Robert E. Whaley, 2004

Abnormally high trading volume / securities increasing in value ²⁷	Positive	Provides market makers with the ability to charge more
Number of market makers	Negative	The more competition the lower the spreads ²⁸

It should be noted that:

- The factors outlined have been observed to influence the spreads on a range of exchange traded products (such as gold, silver, other metal, oil and gas) rather than specifically observed to influence the electricity market. In addition, the studies that identify these factors have not all been undertaken in Australian markets.

However, it is likely that commodity markets behave in similar ways given that the same fundamental principles apply, and that the same traders are likely to operate in many markets. Although the magnitude of these factors on spreads may differ, it is not likely that the factors in one market affect a different market in a contradictory way.

- The factors have been observed as affecting a commodity itself, rather than a commodity's future.

However, there is information to suggest that the spreads on futures are similarly affected by these factors. In the UK, OFGEM notes the link between electricity futures' liquidity and spread. Similarly via their influence on the underlying commodity, these factors influence the futures market as discussed in the following sections.

The two most relevant factors to the electricity futures market—liquidity and volatility—are discussed in more detail below.

2.4.1 Liquidity

Liquidity and spreads have a re-enforcing effect on one another. In illiquid markets, wider spreads are needed to compensate traders or market makers for the risk that they will not be able close out their position. However, in such cases it is often narrower spreads that would be needed to promote additional liquidity that would reduce this risk. As outlined by the NZ Electricity Authority:²⁹

‘Liquidity is self-fulfilling: the easier it is to trade in a market, the more attractive it is to participate, and hence the more liquid it becomes.’

Liquidity in WA compared to the NEM

To form a view on the level of liquidity in WA we have compared the liquidity—as measured by the number and volume of futures trades—in the WA futures market to the liquidity in the NEM futures market.

From July 2014 since the repeal of the carbon tax, there have been only 15 trades (of 5 MW each) which would total approximately 410 GWh across all of the WBU's Standard Products.³⁰ This compares to over 44,000 trades (of 1 MW each) with a total volume of around 123,800 GWh in the NEM futures market over the same period.

²⁷ Zhanga M, Russell R, Determinants of Bid and Ask Quotes and Implications for the Cost of Trading, 2007.

²⁸ Wang G, trading volume, bid-ask spread, and price volatility in futures markets, Journal of Futures Markets, 2000.

²⁹ Electricity Authority, Hedge Market Development: Enhancing trading of hedge products, 21 July 2015.

³⁰ Based on the assumptions that there are 91 days in a quarter for flat products and 65 weekdays per quarter for peak products. Synergy, transactions <<http://wholesale.synergy.net.au/SitePages/Transactions.aspx>>

WA's futures market is very illiquid, which indicates both that its current spreads should be set relatively wide to compensate for the risk of an unbalanced trading position, and that the WBU's spreads will need to narrow over time to promote a more competitive and liquid futures market.

2.4.2 Price volatility

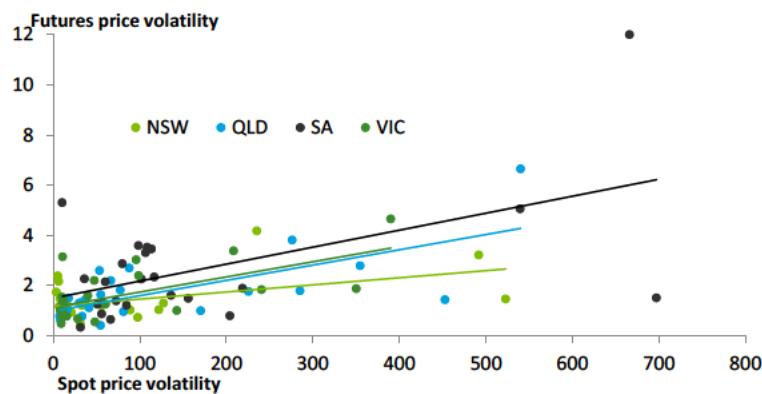
Higher price volatility for a commodity tends to widen its spread. When volatility is high, traders face a greater risk of large adverse price movements in the commodity before they can close out their trading position. This relationship (in the reverse) is noted by OFGEM which states:³¹

‘The lower level of price risk perceived [in the spot market] by participants tends to cause them to trade and hedge less’

Rather than examining the volatility of the futures market directly, we have considered it indirectly via the volatility of the underlying spot markets. This is due to the small number of trades that have taken place in the WA futures market.

Volatility in electricity prices affects futures market spreads in two ways. Firstly, in an illiquid market such as WA, futures trades need to be settled in the spot markets meaning its volatility affects the risk of entering into the futures trade. Additionally, as shown in the figure below, there is a relationship between volatility in electricity prices and the volatility of futures prices.³² This typically occurs because electricity retailers tend to purchase more futures when electricity prices are volatile.

Figure 3: Relationship between spot price and futures prices volatility (standard deviation) with one quarter to deliver



Source: Deloitte Access Economics analysis, AEMO market data—spot prices, ASX futures price data

As such, electricity price volatility affects futures price volatility, and futures price volatility affects futures spreads.

Volatility in WA compared to the NEM

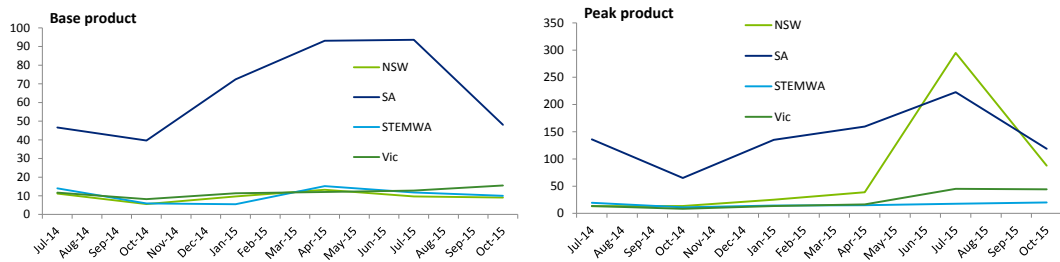
To form a view on the volatility in WA futures, we have compared the volatility—as measured by standard deviation in price—of the WA electricity spot markets to the volatility in the NEM spot market.

The figure below shows electricity price volatility for times corresponding to the WBU's base and peak future.

³¹ OFGEM, Wholesale Power Market Liquidity: Annual Report 2015.

³² Volatility is measured by the standard deviation of price. In South Australia the relationship displayed only holds true when the future nears its delivery date.

Figure 4: NEM electricity price volatility (standard deviation) by quarter



Source: Deloitte Access Economics analysis, AEMO market data—spot prices

The volatility in the STEM is low when compared to the volatility throughout the NEM. This is likely to be driven by:

- Price caps in the STEM (\$253/MWh or \$377/MWh when liquid fuel is required³³) are significantly lower than in the NEM (\$13,800/MWh)
- WA spot markets are energy only markets (where bids are purely based on short run marginal cost) whereas in the NEM prices are not purely based on short run marginal cost, but vary depending on fundamental supply and demand (competitive) conditions.

The relatively lower price volatility in WA generally indicates that spreads in WA would be expected to be lower than in the NEM.

2.5 The role of Standard Products in the WA energy market

The Standard Products regime applies to the South West Interconnected System ('SWIS'), which includes Perth and stretches out to Kalbarri, Kalgoorlie and Albany. The SWIS has an installed capacity of around 6,000 MW and represents 90% of the Western Australian energy market.

The SWIS consists of a capacity market and an energy market. The capacity market provides incentives for long-term investment in generation capacity and the energy market facilitates the buying and selling of electricity. The focus of this report is the energy market rather than the capacity market—which is not further discussed in this report.

Standard Products represent one of four ways to procure electricity in WA, which are:

- Bilateral contracts with generators
- The day ahead Short Term Energy Market ('the STEM')
- the on the day balancing market
- off-the shelf electricity products (which include the WBU's Standard Products).

Most electricity is traded via bilateral contracts between generators and retailers, which usually lock in supply volumes and prices. Market participants must inform the Independent Market Operator ('IMO') of their contract position.

There are two spot markets in WA—the STEM and the balancing market. The STEM is a day ahead market that allows market participants to change their overall trading position from that set by bilateral contracts. Prices are set via an auction based on participants' electricity supply

³³ EMO/IMO, 'Price limits' <<http://wa.aemo.com.au/home/electricity/market-information/price-limits>>

and demand curves, subject to a price floor and two price caps. The combination of a market participant's bilateral contract position and STEM position determines their net contract position.

The balancing market is a gross energy pool which determines the physical dispatch of generators.³⁴ Prices are set via a merit order whereby the lowest generator bids are dispatched first (unless intervention is required to maintain network stability).

Retailers can also purchase off-the-shelf electricity products offered by Alinta, and, under the Standard Products regime, by Synergy. These off-the-shelf products are effectively an energy future with a bid and ask price. The Standard Products allow retailers to rebalance their portfolios without engaging in negotiations for bilateral contracts and to some extent without needing to be exposed to the risk of spot prices.

The size and availability of Standard Products are relatively small meaning they are not a good alternative to bilateral contracts for large retailers. Standard Products are an alternative to purchasing electricity in the STEM or balancing market, and hence trading in this market avoids the associated price uncertainty. In this paper we have typically considered that retailers would prefer to purchase electricity from the STEM than the balancing market because they can plan their purchases and buy electricity based on their bids, and in 2015 the STEM mean prices and volatility were lower than in the balancing market.³⁵

³⁴ IMO, Submission response to the electricity market review discussion paper.

³⁵ IMO data, data available for three first 6 months of 2015 only.

3 Possible approaches to determining the spread

3.1 Historical volatility – approach 1

WA's Standard Products market is illiquid. This means that the WBU (as a ring fenced entity) will be unable to close out its futures trading position via a counterbalancing futures trade. This approach is based on first principles and asks the question, if the WBU cannot close out its Standard Products trade, then how will it supply it meet its futures obligations?

If the WBU cannot close its trading position with a counterbalancing trade, it must purchase or sell electricity on the spot market.

The WBU's risk of making a profit or loss on the trade therefore depends on the prices and volatility of the spot markets. As such, the historical volatility of the spot market can be used to determine a spread that would provide the trader with a reasonable opportunity to profit on a trade.

Table 3 Applicability of approach to WBU

Relevance of approach	Weaknesses with approach
<ul style="list-style-type: none">The approach is based on WA's market characteristics	<ul style="list-style-type: none">Sets an appropriate spread for a relativity illiquid market, which reflects WA's prevailing market conditionsData limitations and the need to select an appropriate level of risk for the WBU to bear

This approach assumes that the WBU would price futures at the mean spot market price plus a risk margin to account for the spot market volatility. The primary assumption underpinning this approach is that historical volatility of the spot markets is a good predictor of future volatility.

The spot market volatility can be translated into a spread for quarterly futures by determining the historical average spot price and historical average spot price quarterly volatility. The average price is the price at which the WBU could price its futures and expect to make no profit or loss. Assuming a normal distribution and pricing futures at ± 0.5 standard deviations around the mean (1 standard deviation in total), the WBU would have a 69% chance of not losing money on any one trade (and a 77% chance using 1.5 standard deviations). The choice between using different numbers of standard deviation depends on judgment about the appropriate risk for the WBU to bear.

The mean and volatility should be measured over the time period that corresponds to the duration of the future being examined. For example for a quarterly product, the WBU's risk is the spot market price volatility that is experienced in that quarter compared with the prices that typically prevail in the quarter.

The resultant spreads are those that should prevail in a futures market that is illiquid and provides few, if any opportunities to make counterbalancing trades. As such, this approach sets a maximum risk adjusted spread.

The calculation under this approach is outlined in more detail in Appendix A.

3.1.1 Results

To estimate the spread under this approach some choices about the data used need to be made. For example:

- The time period of historical data—the relevant time period may depend on changes to the market and market conditions, or alternatively adjustments may be needed to account for these
- Removing one off impacts such as the carbon price
- If the distribution is not normal, a different distribution may be used.

We note, however, that precise data specifications are unlikely to be warranted given the context in which this approach will be used—particularly that the spreads in this approach represent a starting point spread in our suggested overall methodology (discussed in chapter 4).

We have undertaken a high level calculation of the spreads for quarterly flat and quarterly peak products to illustrate the magnitude of the spreads that would prevail under this approach (we have not calculated the spreads for yearly products for this example). We have:

- Used quarterly means and volatility to calculate spreads for quarterly flat products³⁶
- Used STEM data from the beginning 2011 to the end of 2015
- Made a high level adjustment for the carbon price
- Assumed a normal distribution
- Allowed one and 1.5 standard deviations—providing a 69% and 77% chance that the spreads will allow the WBU to profit on a trade respectively.

STEM price means and volatility differ depending on the quarter of the year being considered. Therefore different spreads could be applied to Standard Products that correspond to different quarters.

Application of different spreads under the volatility approach

Under the volatility approach, the spread of a Standard Product offered over the first quarter of 2016 would be different from the spread of a product offered over the second quarter of 2016. However, the spread for a Standard Product offered over the second quarter of 2016 would be the same as the spread for a Standard Products offered over the second quarter of 2017.

Below we present the spreads that currently prevail using the approach described above.

³⁶ For peak products only STEM data corresponding to peak times was used.

Table 4 Implied spreads using WA STEM price historical volatility

Quarterly products	Implied spread - 1 st dev		Implied spread - 1.5 st dev	
	Flat	Peak	Flat	Peak
Quarter 1	6.2%	8.3%	9.1%	12.2%
Quarter 2	14.1%	12.4%	20.5%	18.0%
Quarter 3	14.9%	15.6%	21.6%	22.5%
Quarter 4	7.0%	9.7%	10.4%	14.1%
Average*	10.6%	11.5%	15.4%	16.7%

* A simple average of the quarterly spreads to demonstrate the magnitude of spreads under the volatility approach. Should the ERA apply one spread to quarterly flat products and another spread to apply to quarterly peak products (i.e. not apply a different spreads to each quarter), rather than using this average, the ERA could calculate the average spread for quarterly products based on the quarterly volatility that prevails over the entire dataset used.

Source: Deloitte Access Economics analysis, IMO/AEMO STEM price market data

The current spread of 20% broadly equates to two standard deviations under this approach. As such, the WBU currently has around an 84% chance of profiting from a Standard Products trade, meaning this is also the chance of the market losing on a trade. The high chance of the market losing on a trade is likely to be a significant driver of the Standard Products market's current illiquidity.

The WBU should have a greater than 50% chance of profiting from a trade because in a competitive market a trader would otherwise not offer electricity futures. In our judgment, one standard deviation, providing the WBU with a 69% chance of making a profit, is reasonable as a starting point that may begin to promote more liquidity.

3.2 ASX electricity futures – approach 2

Electricity futures for the National Electricity Market ('NEM') are traded on the ASX. The retail and generation markets in the NEM, along with the futures market are competitive.

In this market the spreads represent the difference between the price at which buyers are willing to pay and sellers are willing to sell (there is currently no appointed market maker participant for this market, although applications are being sought³⁷). This could occur for example, because buyers consider the premium attached to the price of the futures being sold is too high compared to the risk of transacting on the spot market.

Table 5 Applicability of approach to Synergy

Relevance of approach	Weaknesses with approach
<ul style="list-style-type: none"> Demonstrates spreads in a competitive and liquid market, and considers some market factors which would result in different spreads in WA 	<ul style="list-style-type: none"> The WA market's spreads are not competitive in that they are not set by the buyers and sellers in the market, meaning the basis of the spread in WA and the on the ASX differs
<ul style="list-style-type: none"> The spreads in a competitive market represent the size of divergent views between buyers and sellers of futures prices that have been overcome (i.e. the spreads 	<ul style="list-style-type: none"> The spreads represent the periods of time when buyers' and sellers' views have not converged i.e. when trades did not take

³⁷ ASX, Market Maker Arrangements <<http://www.asx.com.au/products/market-maker-arrangements.htm>>

are not so large so as to prevent all place transactions from occurring)

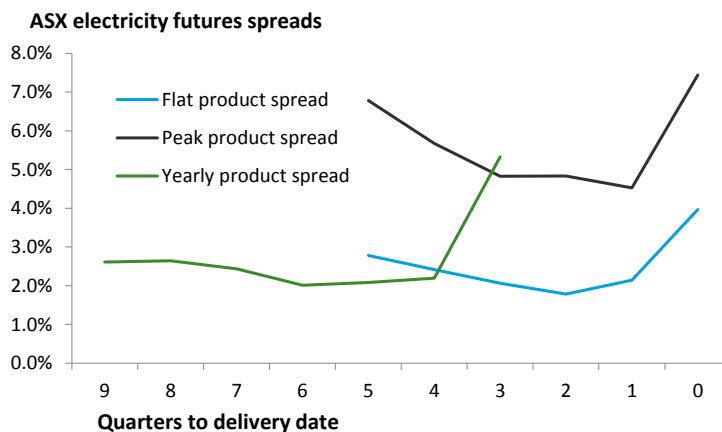
We have examined the average spreads for these electricity futures over time.³⁸ To do this we have:

- Taken each spread that has prevailed on the ASX futures market in Victoria, South Australia, New South Wales and Queensland
- Grouped the spreads for products that have the same delivery date (as measured by the number of quarters to the delivery date). As such, rather than showing the spread for a particular product, say Q2 2017, which would change over time, this method groups the spreads with 'x' quarters to delivery
- Calculated the average spread by quarter
- This was undertaken for the flat, peak and yearly products.

3.2.1 Results

The average spreads for electricity futures in the NEM that correspond to the products offered by Synergy's WBU are shown in the figure below.

Figure 5: Average spreads in the NEM



Source: ASX futures price data

Depending on the quarters to delivery, the average spread on the flat product ranges from 1.8% to 4%, on the peak product from 4.5% to 7.4% and on yearly product from 2% to 5.3%.

Until around two quarters to delivery, the spread narrows slightly as a product nears the delivery date. The narrowing spreads implies that there is more clarity about the market and the risk of transacting electricity reduces as the product nears delivery. There is also an increase in the spread in the periods immediately before the delivery date, which implies that the product is taking on spot price volatility.

The figure also shows that spreads on peak products in a competitive market are higher than the flat product, which could have implications in setting a regulated spread for the WBU.

In the table below we have calculated the average and maximum spreads on ASX listed energy futures for the equivalent products offered by the WBU.

³⁸ Tasmania has not been included in NEM analysis in this report.

Table 6 NEM futures spreads listed on ASX for the equivalent Standard Products offered by WBU

Quarters to delivery	Equivalent futures product	Flat product spread		Peak product spread		Yearly product spreads	
		Mean	Max	Mean	Max	Mean	Max
1	Q2 2016	2.1%	5.0%	4.5%	6.8%		
2	Q3 2016	1.8%	3.8%	4.8%	8.4%		
3	Q4 2016	2.1%	4.7%	4.8%	7.5%		
4	Q1 2017	2.4%	5.7%	5.7%	9.1%		
5	Q2 2017	5.3%	6.3%	6.8%	8.7%		
7*	Calendar 2017					2.4%	4.5%
5*	FY 2016/17					2.1%	3.8%
9*	FY 2017/18					2.6%	4.7%

*For yearly products, the quarter to delivery starts during the last quarter that the product spans as yearly products are traded throughout the year to which they apply.

The spreads can be thought of as the average and maximum spreads that have persisted in the market, but which have been overcome to facilitated trade. The spreads are not so great that they could not persist in a competitive market. As such, these spreads potentially represent a benchmark for Standard Products.

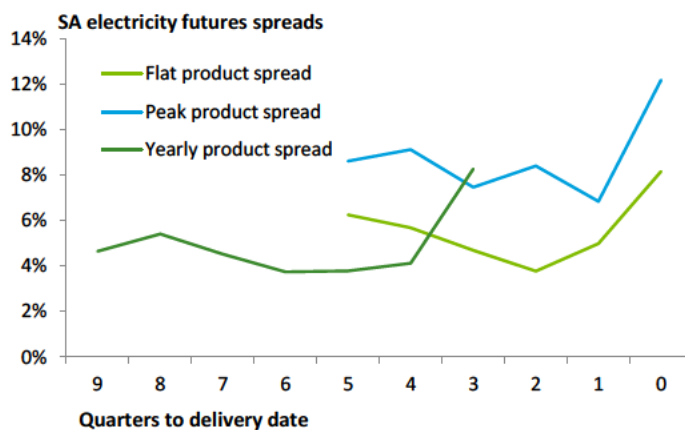
As noted in chapter 2, the liquidity and volatility in the NEM is significantly greater than in WA. This is a limitation to using the NEM results as a benchmark because it does not take account of factors specific to WA.

In an attempt to overcome some of the significant differences between the WA futures market and the NEM, and to provide another benchmark data point, we have also examined the spreads that prevail in the SA specific electricity futures market. We have selected SA in particular because its liquidity is relatively low compared to other NEM States and its electricity price volatility is relatively high. These factors may make it suitable as an upper bound spread benchmark.

3.2.2 SA results

The average spreads in SA are shown below.

Figure 6: Average spreads in SA



Source: ASX futures price data

The spreads in SA are significantly greater than in the rest of the NEM— the average spread on the flat product ranges from 3.8% to 8.2%, on the peak product from 6.8% to 12.2% and on yearly products from 3.8% to 8.3%. Further, of the 13 maximum spreads shown in table 6, 12 of them were set by the SA market.

3.2.3 SA Market factors

Liquidity

Significantly fewer trades have taken place in SA compared to the NEM. Since the carbon tax repeal there have been around 1,240 trades representing around 3,420 GWh being traded. This is still more liquid than the WA market (15 trades and approximately 410 GWh) but more similar than comparing the NEM as a whole.

Volatility

As already shown in figure 4, the volatility in SA is typically higher than in any other NEM state (with the exception of the NSW peak) and significantly higher than in WA.

3.2.4 Conclusions

NEM results

The approach indicates that the spreads for peak products should be higher than for flat and yearly products. However, given the differences that exist between the NEM and the WA futures markets are significant, the average spreads in the NEM are unlikely to provide a particularly good benchmark. Given the differences, we also examined the results for SA electricity futures.

SA results

SA's market is a somewhat closer comparator to the WA market than the NEM. While SA's liquidity is still greater than in WA (which would imply that WA would require a larger spread) SA's volatility was significantly greater than in WA (implying a narrower spread in WA).

To be conservative and to help ensure that spreads cover the WBU's risk in providing Standard Products we consider it reasonable to use maximum, rather than mean spreads as a possible benchmark for a competitive market based on WA's market factors. Further, adopting a conservative approach, we have used the maximum spreads of the ASX rather than those that prevail in SA. We also note that in the majority of cases it is SA's maximum spread that sets the ASX's maximum spreads.

Rather than relying on a single data point based on the maximum spread for each product (which could vary significantly over time), we have adopted the average maximum spreads.

The spreads under this approach are presented in the following table.

Table 7 Implied Standard Product spreads

Product	Max spread (ASX) base products	Max spread (ASX) peak products	Max spread (ASX) yearly products	Implied spread for flat Standard Products	Implied spread for peak Standard Products	Implied spread for yearly products
Q2 2016	5.0%	6.8%		5.1%	8.1%	
Q3 2016	3.8%	8.4%		5.1%	8.1%	
Q4 2016	4.7%	7.5%		5.1%	8.1%	
Q1 2017	5.7%	9.1%		5.1%	8.1%	
Q2 2017	6.3%	8.7%		5.1%	8.1%	

Calendar			
2017		4.5%	4.3%
FY 2016/17		3.8%	4.3%
FY 2017/18		4.7%	4.3%
Average	5.1%	8.1%	4.3%

Source: Deloitte Access Economics analysis, ASX futures price data

As shown in the table, the results from this approach are consistent with the findings that spreads for peak products should be greater than for flat products.

3.3 Market maker spreads – approach 3

Market makers operate in the ASX to facilitate liquidity. Market makers buy and sell products (such as electricity futures) with the spreads forming part of their fee.³⁹ The spreads compensate market makers for the risks they take. For example, market makers may buy (sell) an electricity future but then not be able to sell (buy) a corresponding future immediately, meaning they must carry the risk of their initial trade for a period of time. The risk is in the form of an adverse price movement within the carrying period. The spread also compensates market makers for order processing costs and adverse information costs (discussed in section 2.4).⁴⁰

We have examined the NZ electricity futures market maker spreads. Synergy’s WBU has similarities with a market maker as discussed in the table below.

Table 8 Applicability of approach to WBU

Relevance of approach	Weaknesses with approach
<ul style="list-style-type: none"> • Synergy’s role is similar to a market maker – it offers to buy and sell futures and profits from the spread • Market maker spreads were set by negotiation between the ASX and market makers, meaning the spreads could represent market maker spreads in a competitive market 	<ul style="list-style-type: none"> • Market makers are incentivised to trade whereas Synergy is forced to trade, increasing Synergy’s risk relative to market makers’ risk • NZ market makers operate under the threat of regulation meaning spreads may not reflect a competitive outcome, and the basis for setting the spreads is unknown

3.3.1 Results

There is not currently a market maker for electricity futures in the NEM. However, four market makers are present in the Auckland and Wellington electricity futures market.⁴¹ These market makers are NZ’s four largest electricity generators which are not required to act as market makers, but which do so under the threat of regulation.⁴²

³⁹ ASX market maker arrangements, ASX market making 2016 <<http://www.asx.com.au/products/equity-options/market-making.htm>>

⁴⁰ Grefouriou A, Ioannidis C, Information asymmetry and the bid-ask spread: evidence from the UK, Brunel University, 2002.

⁴¹ ASX, New Zealand Electricity <<http://www.asx.com.au/products/energy-derivatives/new-zealand-electricity.htm>>

⁴² Electricity Authority, Hedge Market Development: Enhancing trading of hedge products, 1 May 2015

We have examined the maximum spreads of quarterly base load electricity futures. These spreads were determined via agreement between the market makers and the ASX.⁴³

If a contract price is below AU \$28 (NZ \$30) a market maker’s offer must be no more than 10% above corresponding bid, and for larger contract prices offer must be no more than 5% above corresponding bid. Although these spreads were set via agreement with no clear basis, they still represent the maximum spreads in a non-regulated electricity futures market. The spreads, as calculated by $\frac{\text{ask price} - \text{bid price}}{\text{ask price}}$, that these requirements represent are outlined in the following table.

Table 9 ASX listed New Zealand electricity future market maker spreads

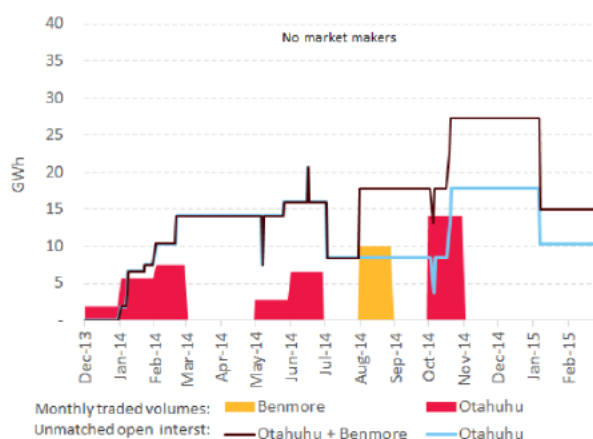
Contract price (AU)	Spread
Under \$28	9.1%
Over \$28	4.8%

Source: ASX market maker spreads

3.3.2 Market factors

We do not have detailed information on the NZ electricity futures market liquidity, however, information published by the NZ Electricity Authority indicates that it is not high, as shown in the figure below.

Figure 7: Unmatched open interest and trading volumes for the quarterly peak product on the ASX NZ market, since December 2013



Source: NZ Electricity Authority

There appears to have been no electricity futures traded from December 2014 to February 2015. As such, as an example of a relatively illiquid market, the NZ spread benchmark may be reasonable.

Another factor that needs to be considered is that market makers are given incentives to provide liquidity and transact. However, they are not required to transact. There may be times when market makers choose not to transact, typically nearing company announcements that affect share price, or in the case of electricity futures this may simply be when the perceived risk of offering futures is too high. The WBU is required to offer Standard Products by the Standard

⁴³ ASX, Market Maker Arrangements <<http://www.asx.com.au/products/market-maker-arrangements.htm>>

Products regime and as such, it bears a higher risk than NZ market makers.⁴⁴ This would imply a higher spread for the WBU compared to maximum market maker spreads.

3.3.3 Conclusions

NZ electricity futures spreads are set by agreement between the market makers and the ASX. While there is no specific justification for the selected value, it represents the spreads set in a non-regulated market. We have not specifically accounted for differences in NZ liquidity or volatility, however, considering that market making on the ASX is voluntary whereas it is not in WA would imply that the NZ spreads would be minimum spreads.

The spreads implied by this approach are outlined in the following table.

Table 10 ASX listed New Zealand electricity future market maker spreads

Contract price (AU)	Spread
Under \$28	9.1%
Over \$28	4.8%

Source: ASX market maker spreads

3.4 OFGEM regulated spreads

In March 2014, OFGEM applied a 'Secure and Promote' license condition, consisting of Supplier Market Access rules and Market Making obligations. The former requires certain generators to offer hedging products in small sizes to assist smaller market players overcome difficulties with trading agreements. In a bid to increase wholesale market liquidity, a subset of these generators is required to act as market makers in the wholesale futures market under the Market Making obligations. These obligations apply to six market participants.⁴⁵

Table 11 Applicability of approach to WBU

Relevance of approach	Weaknesses with approach
<ul style="list-style-type: none"> Like the WBU, market makers are required to offer electricity futures at a regulated spread The purpose of the regime is to ensure smaller participants can enter into the energy contracts they need to compete with the larger, vertically integrated businesses. 	<ul style="list-style-type: none"> Applies to the UK market, which has different characteristics to WA Market makers need not operate at all times

3.4.1 Results

The products required to be offered by market makers in the UK are similar to the Standard products in WA. The UK products are baseload (flat) Month+1 (i.e. electricity deliver in one month), Month+2, Quarter+1, Season+1, Season+2, Season+3, Season+4. The same peak products are offered with the exception of Season+4. These must be available in sizes of 0.5MW to 10MW.

⁴⁴ Western Australian Government Gazette, PERTH, MONDAY, 19 MAY 2014 No. 73.

⁴⁵ OFGEM, Wholesale power market liquidity: statutory consultation on the 'Secure and Promote' licence condition, 20 November 2013. We note also that Hydro Tasmania in Tasmania is required to offer standard electricity futures but not to buy them meaning there is not a regulated spread.

In order to ‘ensure that licensees are not able to frustrate the aims of the intervention by setting wide spreads between their bid and offer price, thereby eliminating opportunities to trade’, OFGEM sets the maximum regulated spread for these products. These spreads were set after considering:⁴⁶

- The spreads seen in other energy markets
- OFGEM’s assessment of a sensible aspiration for spreads in the wholesale electricity market
- These resultant spreads from the first two points were then slightly widened in recognition that it is the market spread and not the spread of each market maker that matters—given there are several market makers it was expected that market spreads would be smaller than individual spreads.

The spreads applied are outlined in the following table.

Table 12 OFGEM maximum spreads

Baseload	Spread	Peak	Spread
Month+1		Month+1	
Month+2	0.5%	Month+2	0.7%
Season+1		Season+1	
Season+2		Season+2	
Season+3	0.6%	Season+3	1%
Season+4			

Source: OFGEM: Wholesale power market liquidity: final proposals for a 'Secure and Promote'

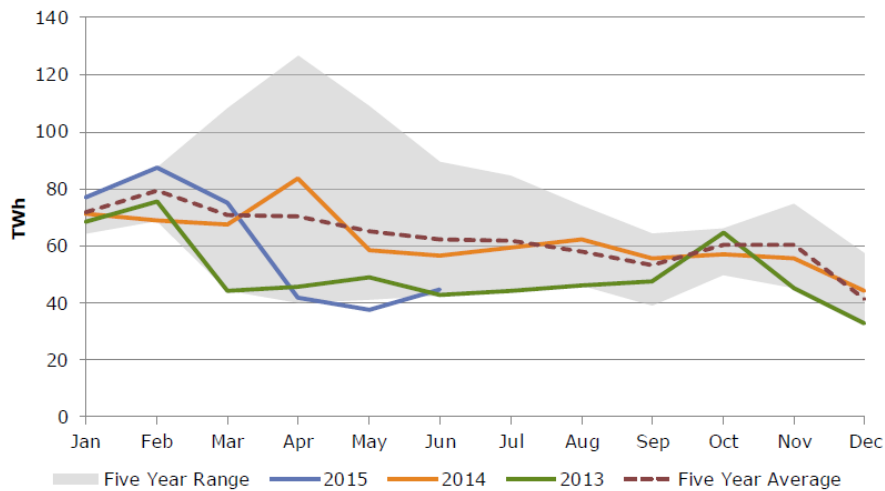
3.4.2 Market factors

Liquidity

The volume of futures trades in the UK (those that have a regulated spread and those that do not) is significantly greater than in WA and in the NEM. The figure below shows the volume of electricity future trades in the products for which the Market Making obligations apply (note that not all trades in these products are done under the market maker obligations which regulate the spread).

⁴⁶ OFGEM, Wholesale power market liquidity: final proposals for a 'Secure and Promote' licence condition, 12 June 2013. OFGEM, Wholesale power market liquidity: statutory consultation on the 'Secure and Promote' licence condition, 20 November 2013

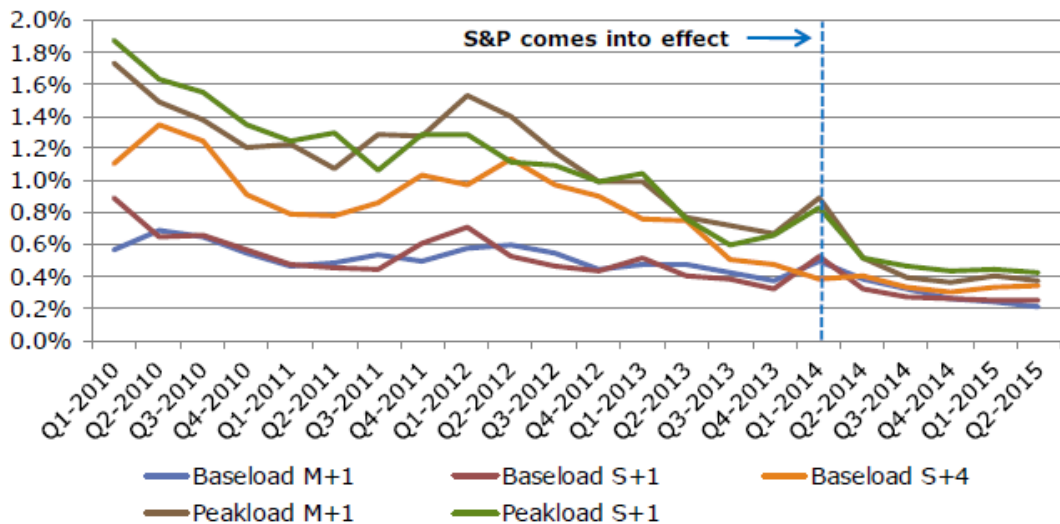
Figure 8: UK electricity future trades



Source: OFGEM, Wholesale Power Market Liquidity: Annual Report 2015

In April 2014, the volume of trades exceeded 80,000 GWh. In contrast the NEM electricity futures market trades totalled to only 123,800 GWh in the past 16 months. The additional liquidity that is apparent in the UK may be a reason why the spreads in the UK market are very low. These spreads are shown below.

Figure 9: UK electricity future trades



Source: OFGEM, Wholesale Power Market Liquidity: Annual Report 2015

The spreads for baseload (flat) futures in the UK are well below 1% (prior and post market maker regulation) whereas in the NEM the average spreads range from 1.8% to 5.3% as shown in Table 6. Whether or not these narrow spreads are a direct result of the liquidity is not clear, however, it is clear that the spreads are significantly lower than those experienced in Australia.

3.4.3 Conclusions

The narrowness of the spreads seen in the UK is unprecedented in the Australia context, even when compared to those spreads experienced in the competitive NEM futures market. As such, we do not consider that the UK market maker spreads provide a useful benchmark for the spreads in WA.

3.5 Other electricity futures spreads in WA

Synergy is not the only provider of electricity futures in WA (although it is the only provider required to offer them). Alinta Energy also provides futures, which demonstrates there is potential for this market to become competitive. The following table examines the applicability of using these spreads as a benchmark.

Table 13 Applicability of approach to WBU

Relevance of approach	Weaknesses with approach
<ul style="list-style-type: none"> Spreads are set by the market in WA 	<ul style="list-style-type: none"> Level of competition is very weak with only one energy trader offering products other than the WBU's regulated products Using the spreads of another WA energy trader as a benchmark could create perverse incentives in the market

3.5.1 Results

We have compared the published spreads of Alinta and Synergy's WBU as at 18 January 2016. Alinta's spreads apply to an average futures price of approximately \$55. The results are presented in the table below.

Table 14 Spread comparison

Supply period	Alinta		Synergy	
	Base/ Flat	Peak	Base/ Flat	Peak
Q1 2016	23%	31%	NA	NA
Q2 2016	26%	37%	20%	20%
Q3 2016	26%	21%	20%	20%
Q4 2016	27%	26%	20%	20%
Q1 2017	27%	33%	20%	20%
Q2 2017	NA	NA	20%	20%
Calendar 2016	24%	29%	NA	NA
Calendar 2017	27%	27%	20%	20%
FY 16/17	26%	28%	20%	20%
FY 17/18	NA	NA	20%	20%
Average	26%	29%	20%	20%

Source: Alinta Energy Exchange, Synergy Standard Products webpage

For all supply periods offered by Alinta and Synergy, Synergy's regulated spreads are lower.⁴⁷ This may indicate that Synergy's spreads are set on the low side, however, it is important to note that two providers of futures do not make for a competitive market, especially when the number of transactions that have taken place in WA is very few.

The spreads offered by Alinta should be considered with caution. Setting the WBU's spreads with reference to the only other futures provider could:

⁴⁷ This does not mean that all Synergy's products are always more attractive because this also depends on the absolute level at which the price is set.

- Enable Alinta to change its spreads for the purpose of influencing the WBU's spreads
- Discourage Alinta from trading if, for example, the spreads were set to be lower than Alinta's
- Alinta may stop offering its products for market reasons, meaning a new methodology to determine the WBU's spreads would need to be developed.

As such, these spreads are unlikely to be useful in developing a methodology for setting the WBU's spreads.

3.6 Other approaches considered

A number of other approaches to setting the spread were also considered. These are discussed at a high level below.

3.6.1 Using the relationships between spreads and market factors previously derived

A number of academics and market practitioners have derived models to explain spreads in competitive markets. Some of these models are discussed more in Appendix B. As such, these models could be used with WA specific data to estimate the spread. However, there are a number of weaknesses with this approach including:

- We were not able to identify a directly relevant model (for electricity futures). Most models have been derived for stocks and metal commodities.
- The majority of the models have been derived using US or UK data and therefore may not be relevant in the Australian context.
- The relevant data to populate the models for the electricity futures market is either not available or does not exist because it is not relevant in the context of the electricity market.

As such, at this time we have not been able to implement this approach.

3.6.2 Examining Synergy's costs of providing Standard Products

A minimum spread could be set with respect to the WBU's direct costs for offering Standard Products. This method, however, would not account for the underlying drivers of spreads such as representing compensation for market makers for providing liquidity. Direct costs are likely to be immaterial in the context of the cost associated with the risk of offering the products. Therefore we consider this unlikely to be a useful benchmark.

4 Recommended methodology for setting the spread

We have not been able to identify a single approach that will meet the objective of the Standard Product regime as the characteristics of the WA market change over time. We have therefore considered how to set a spread by drawing on a number of approaches.

4.1 Spread methodology

We have determined that only three of the examined approaches are underpinned by relevant theory, provide reasonable spread figures in the Australian context and can be practically implemented. These are:

- Approach 1—set the spread with reference to the volatility of the spot market. This represents the risk that the WBU incurs by offering spreads in a market where it cannot balance the sale of an electricity future by purchasing a corresponding future. We have described this method in full in this paper, but have only undertaken a relatively high level of the prevailing spread and only for the quarterly flat product. If adopted, the next step in this approach would be to consider which market factors should be controlled for in the data.
- Approach 2—drawing on the spreads in the ASX electricity futures market. Based on the maximum spreads in the NEM, which are mostly set by the spreads that prevails in SA. SA is less liquid than the NEM, but still more liquid than in WA. To compensate for this market factor, we took maximum rather than mean spreads as the relevant benchmark.
- Approach 3—examining the ASX listed NZ market maker spreads. Accounting for market factors implies that these spreads should be minimum spreads—however, given that the ASX has not published information on the basis for these spreads, any adjustment for market factors may be imputing more precision on to these spreads than what actually existed in their development.

These three approaches imply the following spreads for WA.

Table 15 Implied spreads for Standard Products (SP)

Product	Volatility approach				ASX benchmark approach			Market maker benchmark approach	
	Flat SP 1 stdev	Flat SP 1.5 stdev	Peak SP 1 stdev	Peak SP 1.5 stdev	Flat SP	Peak SP	Yearly SP	Contracts under AU \$28	Contracts over AU \$28
Q2 2016	14.1%	20.5%	12.4%	18.0%	5.1%	8.1%		9.1%	4.8%
Q3 2016	14.9%	21.6%	15.6%	22.5%	5.1%	8.1%		9.1%	4.8%
Q4 2016	7.0%	10.4%	9.7%	14.1%	5.1%	8.1%		9.1%	4.8%
Q1 2017	6.2%	9.1%	8.3%	12.2%	5.1%	8.1%		9.1%	4.8%
Q2 2017	14.1%	20.5%	12.4%	18.0%	5.1%	8.1%		9.1%	4.8%
Calendar							4.3%	9.1%	4.8%

2017			
FY 2017/18		4.3%	9.1% 4.8%

Source: Deloitte Access Economics analysis

Based on this analysis we consider that there are strong reasons to adopt narrower spreads. None of the approaches we considered to be relevant imply spreads as wide as 20%. Furthermore, the basis for setting the 20% spread was vague and used the spreads on the STEM as the basis—the relevance of which to the futures market is unclear. This spread has not resulted in a liquid market, indicating that the spread is too wide.

The reinforcing relationship between liquidity and spreads is a key consideration in combining approaches into a single methodology.

We do not recommend applying benchmarks of spreads from competitive markets immediately. This is because there is no guarantee that lower spreads will improve liquidity, such that the WBU is able to manage its risk. If a narrowing of the spread does not promote liquidity, this would indicate that Standard Products are not required by the market.

Therefore, we propose a cautious approach—tighten spreads to a lower level to improve liquidity, but ensure that the WBU’s risk position is reasonable. This can be done by observing liquidity. If liquidity improves then this implies:

- There is a market for this product
- The WBU can manage its risk.

If liquidity is observed to improve, the lowering of spreads can continue until they reflect competitive benchmarks.

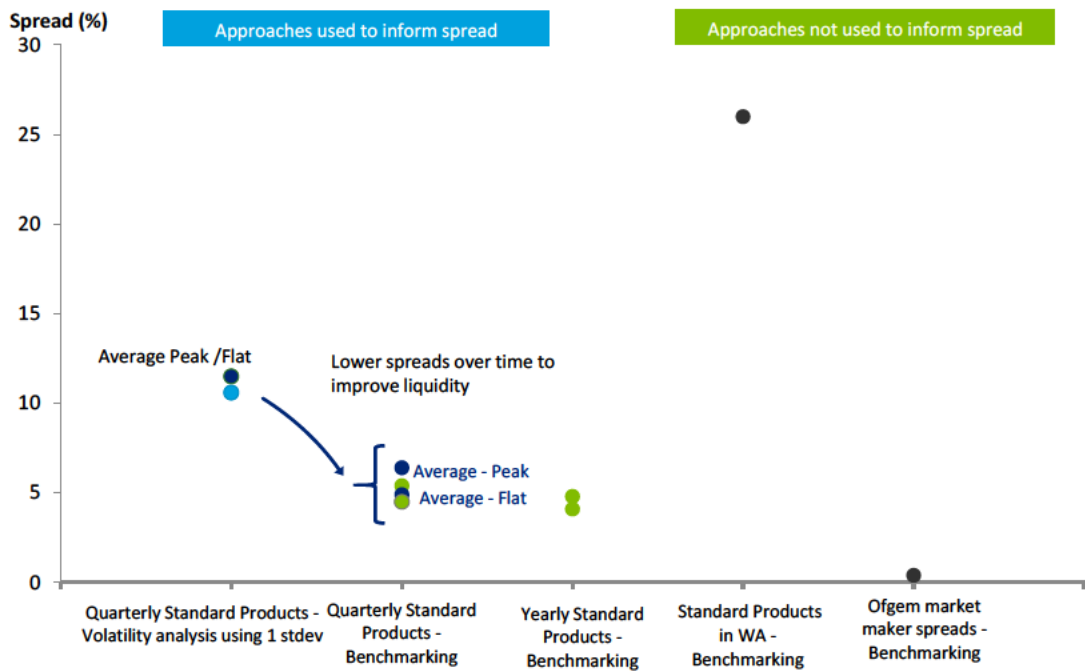
To effect this change, we propose that the spreads initially be set via the application of the first approach, which provides the WBU with a reasonable chance to profit from its trades in a relatively illiquid market.

As noted, different levels of risk for the WBU to bear can be selected (as measured by the standard deviation). A trader in a competitive market would expect to profit from offering electricity futures meaning that the WBU should be afforded a greater than 50% chance of making a profit on any single trade. Our analysis indicates that spreads in WA currently provide the WBU with around an 84% chance of making a profit, which is also the chance of the market losing on a trade. The high chance of the market losing on a trade is likely to be a significant driver of the Standard Products market’s current illiquidity. In our judgment, using one standard deviation, providing the WBU with a 69% chance of making a profit, is reasonable as a starting point.

If liquidity improves, the spreads could be lowered to the benchmark spreads found in competitive markets (adjusted for specific WA market characteristics where possible). During the period over which spreads are lowered, the operation of the futures market should be monitored. This would allow the ERA to test whether lower spreads lead to a more liquid market and whether the WBU has more opportunities to balance its trades.

Therefore we propose that the spreads initially be set via the application of the first approach to reflect prevailing conditions. To promote liquidity over time, the spreads could be lowered to the benchmark spreads found in competitive markets. The spreads implied by this methodology are shown in the figure below.

Figure 10: Implied spreads under proposed methodology⁴⁸



Source: Deloitte Access Economics analysis

4.2 Transition

In addition to lowering spreads over time to reflect more competitive markets, the ERA may consider transitioning the WBU from the current spread of 20% to those spreads that prevail under the first approach based on volatility, in order to provide the WBU with time to adjust its Standard Products pricing.

⁴⁸ For the volatility approach, the average of the spreads for quarterly flat and quarterly peak products are shown in this figure.

5 Force majeure clause

Synergy's force majeure clause is outlined in its standard Bilateral Trade Agreement for Standard Products. This is done in accordance with, and reflects, the force majeure definition outlined in the Western Australian Government Gazette on Electricity (Standard Products) Wholesale Arrangements 2014.⁴⁹

Three stakeholders to the ERA's 2015 review—Community Electricity, Amanda Energy Solutions and Eureka Electricity (in an unpublished submission to the ERA's stakeholder forum)—raised issues around the majeure clause in Synergy's bilateral agreement for Standard Products. They consider the clause to be problematic, and limiting the usefulness and take-up of Standard Products.⁵⁰

At a general level, stakeholders are concerned that Synergy's force majeure clause could allow Synergy to call a force majeure event due to generator breakage, curtailment or interruption. Stakeholders consider these events to be within the control of Synergy, meaning that Synergy can in effect nullify a Standard Product contract it has entered into if the product becomes financially unattractive to Synergy. There is also a concern with the clarity of the force majeure clause due to issues of terminological circularity.

Submissions to the ERA appear do not appear to have adequately considered a key element of the force majeure definition in the bilateral contract. The clause mirrors that of the Gazette and states that the cause of any event or circumstance or combination thereof must be 'beyond the reasonable control of the person' and 'by which the exercise of due diligence the person is not reasonably able to prevent or overcome'.⁵¹ When this aspect of the clauses is considered, it is likely that planned maintenance and outages would be within the 'reasonable control' of Synergy. Thus in these circumstances, it appears that force majeure clauses would not come into operation.

In any case, we consider that the likelihood of Synergy using the force majeure clauses (which include a threshold of generation to be reduced by at least 20% or one generating unit to be completely curtailed or interrupted) opportunistically is extremely low.

With respect to drafting issues, we agree with stakeholders that the force majeure clause could be drafted more clearly to simplify its operation. However, in our view these drafting issues do not appear to provide a Synergy with any particular advantage, because when force majeure provisions apply they are caveated by indication that all causes of force majeure events must be beyond the reasonable control of the party in question.

Notwithstanding our views, stakeholders have cited the force majeure clause as leading to a reluctance to trade in Standard Products. Given that the Standard Products regime is mandated (in order to promote competition in the wholesale and retail markets) and may not otherwise exist, the ERA should have a role in ensuring the clause is clear and does not undermine the intent of Standard Products regime.

As such, in our view stakeholders have not adequately demonstrated that the clauses raise concern by allowing Synergy to opportunistically negate its contracts. Nevertheless, the ERA could seek to Synergy to clarify its force majeure clauses. This may increase the willingness of market participants to transact in Standard Products.

⁴⁹ Western Australian Government Gazette, PERTH, MONDAY, 19 MAY 2014 No. 73

⁵⁰ Community Energy, Submission in response to ERA Public Consultation. Amanda, Submission for the ERA Annual Review of the effectiveness of the WM to meeting market objectives, 21 December 2015.

⁵¹ Western Australian Government Gazette, PERTH, MONDAY, 19 MAY 2014 No. 73.

Limitation of our work

General use restriction

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Appendix A – summary of spread methodology

The spread methodology determined in this paper is to take the spreads calculated under Approach 1 to represent the current state of the WA market where liquidity is low. Over time, the spreads should move to reflect those that prevail under Approach 2 and 3.

Approach 1

Our approach to derive the spreads for quarterly products using spot market volatility is to:

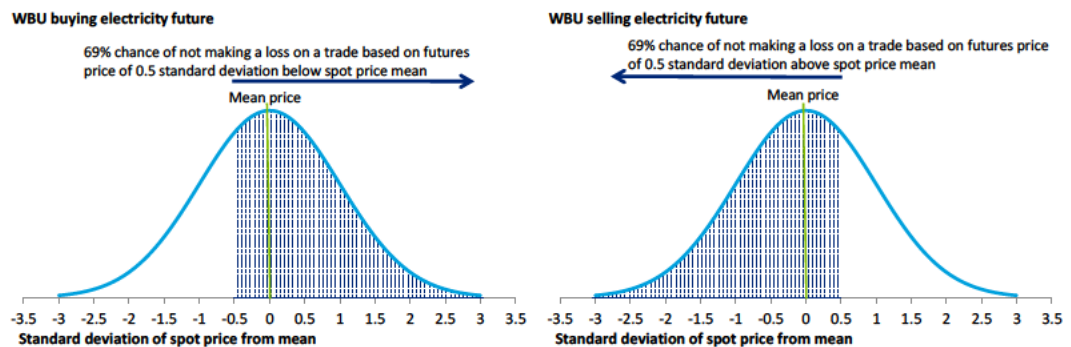
- Determine the mean quarterly spot market price from 2011 (in 2010 the Bluewaters and NewGen Kwinana facilities were completed and had a significant impact on 2010 prices⁵²).
- Adjust the spot prices for the effects of the carbon price using appropriate emission intensity factors.
- Determine the volatility of the first quarter prices, the second quarter prices etc. Quarterly volatility (rather than for example yearly volatility) is used to correspond to the quarter (and hence historical volatility) over which the future will be delivered. Yearly spreads can be determined by the same process by using yearly volatility.
- Determine the mean price for each quarter across years. This is average price is the price that the WBU could buy or sell an electricity future and have an equal chance of making a profit or loss. Yearly spreads can be determined by the same process by using yearly means.
- Select the desired number of standard deviations away from the mean. Selecting 1 standard deviation (± 0.5 deviation around the mean) would mean that the WBU would have a 69% chance of not losing money on a trade.
- Calculate the spread as the desired standard deviation divided by the sum of the mean and half the desired standard deviation.

For yearly products the yearly, rather than quarterly mean and volatility should be used. The spreads for peak products can be estimated via the same process but by using data between 8 am – 10 pm on business days. Also note that the balancing market data as well as the STEM data could be examined to inform the spread under this approach.

The approach is illustrated in the figure below.

⁵² IMO, Submission response to the electricity market review discussion paper.

Figure 11: Illustrative example - approach 1



Approach 2

- Take each spread that has prevailed on the ASX electricity futures market. The time period used in this analysis was 16 months, being the period after the carbon tax repeal. When applying this approach in the future the time period should remain reflective of current market conditions. As such, a rolling time period, perhaps of 16 months, could be applied. If the spread is updated annually, a 16 month rolling time period (rather than 12 months) may have the advantage of smoothing the resultant changes in spreads, making it easier for the market to adjust.
- Group the spreads for products that have the same delivery date (as measured by the number of quarters to the delivery date).
- For the equivalent Standard Products offered by Synergy (i.e. separate by time to delivery and flat/peak products), find the maximum spreads that prevailed in the NEM.
- Take the average maximum spread of the flat, peak and yearly products. These spreads represent the spreads derived under this approach.

Approach 3

- The ASX market maker spreads for electricity futures market that apply to contracts of the relevant size in WA.

Appendix B – spread estimation models

In these models, bid-ask spreads represent a degree of liquidity in the market. If a "true" price of a security exists the bid-ask spread represents the premium associated with trading (sell or buy) immediately. In markets with a market-maker, bid-ask spreads are often decomposed to a set of a cost-factors for market makers, specifically:

- Order processing cost
- Adverse information
- Inventory holding cost

The nature and magnitude of these cost factors has been examined in related sets of academic literature. Order processing costs tend to be directly observable and are often related to the exchange or platform used to execute trade.

Adverse information (sometimes referred to as asymmetric information or market making with traders with heterogeneous information) has also been studied in a set of papers that includes Glosten and Milgrom (1985) and Kyle (1985). These papers look at how costs for market makers in the form of potential adverse information, leads to a bid-ask spread.

The inventory holding costs of market makers are investigated in a related set of literature that includes Amihud and Mendelson (1980) and Shen and Starr (2002). These papers examine how market makers attempt to offload positions either through asymmetrically adjusting prices around the "fundamental value-price" of a security or through offloading positions to other dealers within the market.

Several statistical techniques have been used to investigate the magnitude of these cost factors.

One set of papers examines trade indicator models which use a theoretical construct of an unobservable "fundamental value" of a security to examine the use of a bid-ask spread around that price. An example of this model would be Huang and Stoll (1997).

Refinements and variations on this model have proliferated with adjustments required to account for other related factors such as correlation between adverse information events and trading volume. (Theissen and Zehnder, 2014)

An alternative set of models seeks to explain the bid-ask spread through the use of serial covariance in observed transaction prices. Stoll (1989) provides a canonical example of such a paper.

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