

ENERGY SECURITY BOARD
National Energy Guarantee
TECHNICAL WORKING PAPER

Qualifying Contracts

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Executive Summary

- Liable entities will require certainty about what contracts will qualify under the reliability requirement. The proposed framework for qualifying contracts is defined as “any wholesale contract with a direct link to the electricity market which a liable entity uses to reduce exposure to high spot prices”.
- The ESB proposes that liable entities calculate their net contract position in MW for the period of the “gap” in the relevant region and present this aggregated position to the AER.
- Liable entities would be responsible for considering, and appropriately adjusting for, the firmness of each contract used for compliance. This would be approximated by a “firmness factor” between zero and one for each contract.
- It is expected that the firmness factor, calculated by the liable entity, applied to each product, would consider characteristics such as strike price, volatility and likelihood of cover for the period of the gap.
- To provide assurance to the AER that the liable entity is reasonably adjusting its positions for firmness, it is proposed that the liable entity’s methodology for calculation of the aggregated net position would be reviewed and confirmed by an appropriately qualified, independent auditor.
- Triggering the reliability obligation should not adversely impact on liquidity, transparency and competition. To ensure adverse impacts are mitigated, the ESB has considered five options:
 1. Qualifying contracts must be centrally cleared.
 2. Qualifying contracts must be recorded in trade repositories, with appropriate reporting developed to facilitate transparency.
 3. Large, vertically integrated retailers are covered by a ‘Market Liquidity Obligation’ when the gap is triggered.
 4. A combination of options 1 and 2.
 5. A combination of options 2 and 3.
- The Market Liquidity Obligation would require large vertically integrated retailers to post bid and offer prices in the relevant quarterly flat and peak products, in the gap region on a daily basis. This would generally occur from the point of triggering the reliability obligation at T-3 until the compliance point at T-1. As well as providing price transparency, this proposal will ensure liquidity of contracts in the period of the gap when the reliability requirement has been triggered.
- The ESB’s preferred approach is to adopt the Market Liquidity Obligation in conjunction with a trade repository and reporting requirement. All contracts that qualify would need to be either centrally cleared or reported in a trade repository; including where vertically integrated retailers wanted to use their own generation. A key question for the ESB in finalising the detailed design of the Guarantee is whether the benefits of implementing the trade repository requirement would warrant the costs incurred by liable entities.

1 Introduction

On 20 April 2018, the Energy Security Board (ESB) presented the COAG Energy Council with a high-level design proposal for the National Energy Guarantee (the Guarantee). The COAG Energy Council agreed that the ESB progress the detailed design of the Guarantee for determination by the Council at its August 2018 meeting.

As part of the development process, the ESB convened Technical Working Groups to advise on certain detailed design elements of the Guarantee. The Technical Working Groups were comprised of a broad range of stakeholders with relevant expertise from more than 30 organisations.

The purpose of this paper is to outline options and preferred approaches relating to qualifying contracts under the Guarantee, in particular:

- what contracts will qualify under the Guarantee
- how will the “firmness” of contracts be determined
- how to ensure triggering the reliability obligation does not adversely affect transparency, liquidity and competition
- what approach should be taken for changes to contract positions after the compliance date, and
- what contracts will be subject to grandfathering for large customers.

These detailed design issues were considered by the Contracts Technical Working Group.

This paper provides additional detail and context to the [Draft Detailed Design Consultation Paper](#). Interested parties are encouraged to lodge a submission to the consultation by **13 July 2018** for consideration by the ESB prior to the publication of the final design of the Guarantee.

2 Overview of High-Level Design

If the reliability requirement is triggered, liable entities will be required to enter into sufficient qualifying contracts for capacity (including demand response) to cover their share of system peak demand at the time of the reliability gap.

Liable entities will need certainty as to what instruments will qualify for compliance under the reliability obligation. Retailers currently manage the financial risks associated with the spot market using a combination of standardised and bespoke products traded both on the ASX and over-the-counter (OTC).

There are a range of existing contracts, such as swaps and caps, which expose the sellers to very high prices in the event generation or demand response is unavailable or doesn't perform as expected when the system needs it. These sorts of financial products are considered firm as they are defended by dispatchable generating capacity or demand response i.e. capacity that can respond to a request from AEMO to increase or decrease output over a specific time period.

However, there are some financial products that have no direct link to the electricity market or spot price, and thus do not necessarily provide the seller an incentive to generate or adjust energy consumption in periods of high prices and/or high demand.

Retailers will use a different combination of these various financial products to manage their individual financial risks associated with selling electricity, according to each businesses' risk appetite and financing arrangements.

The design of the Guarantee should ensure it enhances rather than undermines the liquidity, transparency and level of competition in the retail and wholesale electricity markets while ensuring that compliance options remain flexible. This also includes the consideration of how demand response products may qualify to ensure the reliability obligation is met at least cost.

3 Framework for qualifying contracts

3.1 Prescriptive versus framework approach

A design decision is required regarding what approach to use to identify qualifying contracts. The two options are either a:

1. Prescriptive approach, or
2. Framework approach.

Prescriptive approach

A prescriptive approach to assessing the eligibility of qualifying contracts would provide clarity to liable entities by removing any doubt about what specific contracts would qualify. For example, a prescriptive approach could list specific contracts, such as ASX and OTC futures and \$300 caps, load following hedges, options with reasonable strike prices, etc. All other products would be excluded.

While each of the prescribed products would support reliability, they limit the flexibility of participants to innovate and develop new products. To alleviate this concern, a review process could be utilised to allow new products to be considered for qualification, (such as the new solar derivative and wind firming contracts being developed and used by market participants), however, this could be a disincentive to innovation if there's a lengthy consideration process.

Limiting the contracts available to liable entities may also have the perverse outcome of stifling liquidity in developing contract markets where products offered would support reliability. Restricting innovation may also hamper competition from new entrants.

Framework approach

A framework approach could provide a flexible option for consideration of qualifying contracts. This approach could be adopted by setting broad principles that contracts are expected to adhere to in order to qualify, such as a demonstrated link to the spot price. The design of the framework could support the innovative and flexible approaches to hedging that participants currently adopt.

This approach could be designed to accept a wide variety of contract products, provided any overarching principles are met. This would facilitate flexibility in contracting for compliance purposes, as well as managing a liable entity's financial risks.

Preferred approach

- A framework approach provides flexibility to liable entities, including small liable entities and new entrants, to purchase a range of products to meet their compliance obligations if the reliability obligation is triggered.
- This approach will continue to allow the market to innovate and develop new contract products as new technologies enter the market and approaches to risk evolve.

- The flexibility offered by a framework approach will see the reliability obligation met at least cost to consumers.

3.2 Definition of the framework for qualifying contracts

The goal of the framework for qualifying contracts is to offer certainty to market participants as to what types of contracts would qualify for compliance under the reliability requirement.

The recommended framework for qualifying contracts is any wholesale contract with a direct link to the electricity market which a liable entity uses to reduce exposure to high spot prices.

The reliability requirement is based on the premise that for the period of an identified reliability gap, if the shortfall were to occur, that this would result in high spot prices. Consequently, requiring qualifying contracts to be based around financial or physical contracts that provide the financial incentive to make available existing or new resources to close the gap is consistent with this assumption. Therefore, any contract must have a direct link to the electricity market to be a qualifying contract.

Preferred approach

- Simple, high level framework which defines qualifying contracts as, “any wholesale contract with a direct link to the electricity market which a liable entity uses to reduce exposure to high spot prices”.

3.3 Compliance with the framework for qualifying contracts

Each year, as part of its Electricity Statement of Opportunities (ESOO) process, AEMO will assess whether the NEM reliability standard will be met and if not whether a ‘material’ gap in capacity exists over the forecast horizon. If the material gap persists three years out from the relevant period the reliability obligation will be triggered and liable entities may be expected to demonstrate future compliance with the reliability obligation by securing sufficient qualifying contracts to cover their share of peak system demand.

Liable entity calculation of a firmness-adjusted net position for compliance

If the reliability requirement is triggered and persists, it is proposed that liable entities calculate their net position in MW for the period of the gap in the relevant region and present this aggregated position to the AER at T-1. Consideration is required as to whether contracts would be required to be separately aggregated for supply-side contracts and demand-side contracts. At a time of possible reliability issues, separate reporting of each liable entity’s aggregate demand-side position could assist AEMO with forecasting.

Liable entities would be responsible for considering, and appropriately adjusting for, the firmness of contracts used for compliance. This could be approximated by a “firmness factor” between zero and one for each qualifying contract. The firmness factor that applies to each contract would consider characteristics such as strike price, volatility and likelihood of cover over the period of the gap. The firmness factor is conceptually similar to the traditional financial markets definition of

a derivatives “delta”¹ for the purposes of compliance, though this approach may need to be adapted in the case of some contracts.

A liable entity would determine its net position by aggregating all qualifying contracts which have been bought and sold in the relevant region and cover the period of the reliability gap. This means all trades are aggregated regardless of how a liable entity designates each contract, for example, as a hedge in a “hedge book” or an opportunistic trade in a “trade book”. This approach is intended to avoid gaming of the obligation.

Assurance of the liable entity’s firmness-adjusted net position

It is proposed that the calculation of the firmness factor for each contract would be based on a documented and prudent approach to measuring risk as determined by each individual entity. This may be similar to the manner in which a liable entity currently determines its position for risk reporting purposes. However, to provide assurance to the AER that the liable entity has adopted a reasonable and widely accepted approach to measuring firmness, it is proposed that the liable entity’s methodology for calculation of the aggregated net position would be reviewed by an appropriately qualified independent auditor appointed by the liable entity. The auditor’s role would be to assess whether the position has been calculated with reasonable assumptions and consistency and that the contracts included are qualifying contracts. The auditor’s assurance would be provided to the AER at the same time as the liable entity presents its net firmness-adjusted position.

Analysis

This proposal produces a net position specified in MWs which aligns with the period and magnitude of the gap. It is also largely consistent with liable entity’s existing internal processes and the methodology for calculating its contract exposure. The proposal does not require the liable entity to supply detailed contract information to the regulator, avoiding unnecessary costs being imposed on industry and unnecessarily burdening the AER with coordinating resources to monitor compliance if the obligation is triggered.

It is possible that the calculation of firmness for certain contracts may not be consistent across liable entities. This is impossible to control given differing understandings of the period to assess volatility, capacity factor calculations, etc. The significance of the variation will be constrained by the auditor’s role in judging the “reasonableness” of a liable entity’s calculations. For example, if an auditor calculates volatility to be 18 per cent, then a liable entity’s use of 17 per cent or 19 per cent would be reasonable but 5 per cent would be unreasonable. The onus is on the liable entity to demonstrate to its auditor, and if requested, the AER, that all contracts used in the calculation of net position are qualifying contracts and that the assumptions used to adjust for firmness are reasonable.

The AER may need to run a process to recognise auditors qualified to assess compliance with the reliability obligation.

¹ A derivative’s delta measures the sensitivity of the derivative’s price to changes in the underlying asset’s price, and ranges in value from 0 (no response to changes in underlying price) to 1 (a one-for-one response).

Preferred approach

- Liable entities are responsible for appropriately adjusting their positions for “firmness” and aggregating them to provide a net position for compliance.
- The liable entity’s calculation methodology must be assessed by an external auditor as “reasonable” to provide assurance to the AER that reported positions are realistic and include only qualifying contracts.

3.4 Generation within vertically integrated retailers

The ESB has considered whether allowing vertically integrated retailers to use their own generation (that is an internal contract) to meet their reliability obligation is appropriate. Vertically integrated retailers have evolved from both generators developing retail subsidiaries in order to diversify their channels to market as well as retailers developing or acquiring generators in order to secure generation cover for their retail load. In both cases these businesses have an interest in physical generation capability which supports reliability. In addition, some vertically integrated retailers have invested in peaking generation (such as gas-fired generation) an asset critical to supporting reliability at times of highest demand.

It is therefore the ESB’s view that the generation from vertically integrated retailers should count as a qualifying contract for the purposes of the reliability guarantee. In alignment with other qualifying contracts, this “contract” would need to be firmness adjusted taking into consideration factors such as the capacity factor of the generator/s, the alignment of its availability to the time of the reliability gap, etc.

Preferred approach

- Internal contracts, created from the generation of vertically integrated retailers be acceptable as a qualifying contract.

Refer to section 5 for the ESB’s approach to ensuring liquidity, transparency and competition when the reliability requirement is triggered. The ESB has recommended a trade repository obligation which implies these contracts (along with all other types of qualifying contracts) will need to be entered into trade repositories.

3.5 Grandfathering of arrangements for large customers who are liable entities

The ESB has considered whether arrangements some potentially liable large customers have in place, which cover the period of the gap, should be grandfathered. The ESB has further considered its approach to grandfathering.

In deciding whether to grandfather existing contracts, the ESB must weigh up the intent to support reliability through firm contracts versus the imposition of a change in regulations for liable large customers with existing arrangements in place.

On balance, the ESB considers that existing arrangements of liable large customers that

- the liable large customer uses to reduce their exposure to the spot price
- are executed prior to the release of the High-Level Design (20 April 2018), and
- cover the period of the reliability gap,

will be qualifying contracts (up to the load covered by the contract) and need not be firmness-adjusted (see section 3.3) for the purposes of compliance. This includes retail, wholesale and demand response contracts.

For example, a liable large customer, with an existing retail or wholesale contract covering all of their load at the time of the reliability gap has met their obligation for compliance with the reliability guarantee regardless of the firmness of the contract.

Another example is a liable large customer which has a retail or wholesale agreement (such as a power purchase agreement) that covers one quarter of its liability, will be able to use this contract, without adjusting for its firmness, for the purpose of the reliability guarantee. As the grandfathered contract covers only one quarter of the liable large customer's load, additional qualifying contracts would need to be acquired to ensure compliance with the reliability obligation.

Preferred approach

- Existing arrangements of liable large customers that
 - the liable entity uses to reduce their exposure to the spot price
 - are executed prior to the release of the High-Level Design, and
 - cover the period of the reliability gap,

will be qualifying contracts (up to the load covered by the contract) and need not be firmness-adjusted for the purposes of compliance. This includes retail, wholesale and demand response contracts.

4 Treatment of qualifying contracts under framework

4.1 Swaps and caps

Swaps and standard strike price caps are contracts that expose the seller to significant financial penalties if they are unable to be covered when prices are at or near the market price cap. In general, a liable entity would likely consider these contracts to be fully firm; however, it is expected that their firmness would be a function of their strike price. For example, it is expected that a "reasonable" assessment of a swap or a cap with a strike price at or very close to the market price cap would receive a firmness-factor close to zero.

4.2 Interregional contracts

Interregional contracts offer auction participants the opportunity to hedge outside of the region of their load, altering their spot price exposure to a spread between the spot price of two regions. For example, a liable entity with load in South Australia may hedge this exposure by buying a

Victorian contract. Hedging in this manner carries a higher level of risk as it relies on the operation of interconnectors to minimise divergence between the spot prices in each region. The participant takes on the risk that if the regions of interest separate, or its interconnectors bind, the assumed correlation between the spot price in the two regions may differ from expectations.

An interregional position could be covered or uncovered. A covered position occurs when participants match their interregional position with the purchase of Settlement Residue Auction (SRA) units across the relevant interconnector. SRAs provide the buyer with access to the value of flow across the interconnector thereby offsetting any difference between the spot price of the two regions. For the purposes of compliance, it is expected that a covered interregional position would receive a large firmness-factor, potentially discounted based on the historic performance of the interconnector. This is consistent with the fact that the demand (and therefore reliability) in one region is met not only by generators in that region but also possibly by generators in other regions, up to the capacity of the interconnectors.

An uncovered interregional position is where the participant does not reduce its exposure to the spot price differential by purchasing SRA units. In the situation of a reliability gap, it is difficult to see how an uncovered interregional position would enhance reliability in the region where there is a gap. It is therefore expected that these positions would receive a low firmness-factor for the purpose of compliance.

4.3 Load following contracts

Load following contracts offer liable entities a way to manage exposure to the shape of their load as the level of cover varies across a defined period in conjunction with their load requirements. These products are particularly popular with new entrant and smaller retailers. If the hedge cover of these contracts exactly matches the load at the time of the reliability gap, it is expected that a liable entity will consider these products to be fully firm for the purposes of compliance. Adjustments may be required however, if the contract contained terms which limited the coverage or otherwise reduced the incentive for a seller to “defend” the position.

4.4 Fixed shape swaps

Fixed shape swaps provide swap coverage for a set shape. The firmness-factor for these contracts will be related to the actual shape of the swap and its alignment to the reliability gap. For example, it is expected that an off-peak shape will receive a low firmness-factor if the reliability gap is forecast for peak periods.

4.5 Options

Options, such as swaptions and asian options, are instruments which participants (including retailers and generators) use as a legitimate least cost approach to hedging their position and managing financial risk. Their level of firmness would depend on the likelihood that they will be "exercised" or degree to which they can be considered to be "in-the-money". It is expected that a liable entity would use a standard financial markets delta adjustment process to calculate these positions.

For example a call swaption gives the option holder the right to buy a swap at a fixed price in the future. A call swaption with a strike price of \$50/MWh that covers the period of the reliability gap whose underlying swap value is \$70/MWh is likely to be exercised so it would receive a high firmness-factor. Conversely, a call swaption for the same period at \$100/MWh would not likely be

exercised, therefore would not provide cover for the gap period, so it would receive a low firmness-factor.

4.6 Weather products

“Weather products” is a term that is used to describe a variety of instruments with a weather-related component. These products may be structured as “insurance” products or “derivatives”. Some weather products settle against the spot price and some include insurance-type elements which limit exposure to the spot price such as deductibles and maximum payouts. These products are often managed by their providers with other contracts, such as caps, thereby enhancing reliability.

It is envisaged that liable entities would choose to use these products for compliance, discounting them appropriately based on their characteristics. For example a weather derivative that, once triggered, settled against the spot price is likely to receive a high firmness adjustment factor. However, a weather insurance product which settles against the temperature does not meet the framework of a qualifying contract (which requires a link to spot prices) and would therefore receive a low firmness adjustment factor.

4.7 Tolling agreements

Tolling agreements are a type of instrument which specifies the amount of a raw commodity to be supplied to a facility for the purposes of producing another commodity over a particular period. The buyer of the product provides the raw commodity to the seller and seller provides the buyer with the commodity produced using the raw commodity. For example, natural gas supplied by a gas producer to a gas fired generator over a week which is used to produce electricity which the gas producer can use to offset their load requirements. The level of firmness of this type of contract would be a function of the characteristics of the agreement and degree of confidence the buyer has that they will be provided with the electricity contracted to them at the time of a reliability gap.

4.8 Power purchase agreements

Power purchase agreements (PPAs) are contracts for physical sale of energy between a buyer of electricity and a seller of electricity which has a direct linkage to the power produced by a specific generator which is physically connected to the electricity market. The level of firmness of this type of contract would be a function of characteristics of the agreement and degree of confidence the buyer has that they will be provided with the electricity contracted to them at the time of a reliability gap.

In determining the firmness-factor to adjust their position, the participant is likely to consider the capacity factor of the generator and the correlation of the output of the generator to periods of high demand. Adjusting for the firmness of these generators and including these contracts as qualifying contracts is consistent with AEMO’s inclusion of these generators in their projections of forecast demand, and therefore their calculation of the gap.

4.9 Demand response products

Demand response products provide the owner with the ability to reduce their exposure during peak demand periods. These products could be financially or physically structured for example,

demand response products may link to retail or network prices. See the *Technical Working Paper on Demand Response* for further discussion on demand response.

When firmness-adjusting a demand response product, the liable entity is likely to consider the probability of response, the duration of response and other terms in the contract.

4.10 Fixed payment products

Some products are structured as fixed payment products where the buyer pays a fixed payment to the seller (who could be demand response, generation, battery) in return for the right to call a MW response. The buyer may even register this capacity with AEMO in order to directly capture the spot price exposure. It is likely that the holders of these products will use them to manage their exposure to high spot prices.

4.11 Existing arrangements of liable large customers

See section 3.5 for discussion of the grandfathering of existing arrangements.

4.12 New retail contracts

Retail contracts are not wholesale agreements so do not meet the requirement for qualifying contracts. This applies regardless of whether the retail contract is a spot pass-through agreement or not. For liable entities that are customers (rather than retailers), this implies that as part of their retail contracting activity the customer will need to transfer their reliability obligation to the retailer (through an Obligation Transfer Notice).

This is consistent with current practice where regardless of the reliability obligation, after signing new customers, retailers will seek to reduce their exposure to the customer's load in the spot market. It is this wholesale spot price linked contracting activity that enhances reliability.

4.13 Book build retail contracts

Book build retail contracts are contracts which allow the customer to a retail contract to progressively secure their hedge volume across a specified period. The term "book build" in this context is different to the "book build" proposal as part of the Guarantee. The book build retail contract allows the customer to average their retail price across the specified period thereby avoiding a concern that they may be contracting all their volume at the peak. When the customer advises the retailer to secure a portion of the total volume on their behalf, the retailer will secure this volume for them at the prevailing market price, e.g. 5 MW of a 10 MW total volume.

Book build retail contracts are not wholesale agreements so do not meet the framework for qualifying contracts. It is expected as part of their retail contracting activity the customer transfers their reliability obligation to the retailer.

4.14 Internal contracts of vertically integrated retailers

Internal contracts are an agreement between a generator and a retailer within a vertical integrated retailer. The retailer purchases the generation from the generator/s at a notional price. These contracts are qualifying contracts as discussed in section 3.4. Refer to section 5 for the ESB's approach to ensuring liquidity, transparency and competition when the reliability requirement is triggered. The ESB has recommended a trade repository obligation which implies

these contracts (along with all other types of qualifying contracts) will need to be entered into trade repositories.

In determining the firmness-factor to adjust their position, the participant retailer is likely to consider the capacity factor of the generator/s and the correlation of the output of the generator/s to periods of high demand.

5 Ensuring liquidity, transparency and competition are not negatively affected by the reliability obligation

In the High-Level Design Document, the ESB committed to manage stakeholder concerns about the liquidity and transparency of contract markets and the level of concentration in the electricity market more broadly. The approach proposed was to only allow those contracts bought from centrally cleared trading platforms and/or reported to centralised trade repositories (exchange traded or over-the counter) to qualify.

If the reliability obligation has been triggered, liquidity, transparency and competition could be supported through the following approaches:

- central clearing – all qualifying contracts must be obtained from a centrally cleared trading platform
- trade repository – all qualifying contracts must be reported into centralised trade repositories
- trade reporting – public reporting of trade data in trade repositories or other reporting
- Market Liquidity Obligation – large vertically integrated retailers are required to support markets (i.e. submit bid offer spreads) for the period of the gap, or
- a combination of the above options.

5.1 Central clearing

Centrally cleared contracts are contracts that are traded and centrally cleared on an exchange (e.g. ASX Trade24 for derivatives including wholesale electricity contracts). To promote liquidity these contracts are standardised in their design. For example, the ASX currently lists \$300 caps in each region in the NEM (other than Tasmania) but not caps for other strike prices. To mitigate default risk these markets are managed through a central counterparty, backed by a diverse range of financial institutions and underpinned by a prudential and margining framework that is a party to all trades (i.e. they become the buyer to every seller and the seller to every buyer).

Industry feedback suggests that a central clearing-only approach would increase transaction costs and adversely affect smaller participants who have reduced capital budgets to fund margin requirements. Concerns have also been raised that the central clearing-only approach would restrict innovation and flexibility to hedge in an efficient manner. In this case central clearing-only would add costs without mitigating stakeholder concerns.

5.2 Trade repositories

Trade repositories are entities that centrally collect records of OTC derivatives. In 2009 at the G20 summit, Australia committed to practices to improve the transparency of OTC derivatives

and risk management practices in the wake of the global financial crisis. Electricity OTC derivatives are exempt from these requirements; however, some energy market participants currently use trade repositories to report their green and gas market exposures. This existing use of trade repositories could be leveraged to assist with transparency when the reliability obligation is triggered.

Under the current ASIC requirements, the choice of trade repository is up to the participant, and must be licensed by ASIC. Data in trade repositories is private and is accessed only by ASIC for the purpose of monitoring the risks of financial contagion.

Trade repositories can, in theory, generally capture any type of OTC contract, including electricity market contracts, providing participants with the flexibility to trade non-standard products and negotiate bespoke credit arrangements.

Trade repositories add to costs which must be considered against the benefits. In existing trade repositories, data must be updated daily to account for changes in the mark-to-market position of every open transaction plus the entry of new trades.

Trade repositories may require lengthy IT project lead times to establish. If a trade repository obligation is imposed as part of the Guarantee, some liable entities may consider the risk of a sudden requirement to trade report impossible to comply with when the reliability obligation is triggered. These liable entities may therefore begin setting up the systems for trade reporting immediately in anticipation of a requirement. If an industry-specific trade repository was preferred, it would also need to be developed up-front in anticipation of the reliability obligation being triggered.

Requiring qualifying contracts to be registered in trade repositories may not add to liquidity in the event of a reliability requirement being triggered. There is no requirement for participants to trade their positions in the market. Any transparency benefits of trade repositories are dependent on reporting requirements.

5.3 Trade reporting

For trade repositories to assist with transparency, a regulator (ASIC, AER) requires access to the data and must publish aspects of it, in some form. In New Zealand, every trade (standardised or not) is publicly reported.² This is a possible approach that could be taken under the reliability obligation. An alternative approach could require the regulator to provide reporting of aggregated summary positions for standardised products at set intervals.

In 2014-15, the Australian Financial Markets Report (AFMR)³ produced by the Australian Financial Markets Association identified that 16 per cent of surveyed electricity derivative volumes were traded 'OTC', with the balance traded on centralised exchanges. The AFMR ceased surveying the electricity market in 2014-15, but is understood to be re-instating the survey this year (including publishing data for all years since 2014-15). Anecdotally the percentage of 'OTC' volumes traded has not increased. As the OTC volumes include many bespoke arrangements, transparency of these transactions may provide benefits beyond existing

² <https://www.electricitycontract.co.nz/>

³ <https://afma.com.au/data/AFMR>

reporting. This may be particularly beneficial to smaller entities that rely on this style of arrangement.

Reporting requirements would need to be carefully designed to ensure they're useful, not misleading and do not distort competitive behaviour. For example, it can be difficult to accurately report all the terms of bespoke transactions, and when summarised for public reporting the resulting report may have the potential to misinform. For example, publication of the MWh quantity and price for a non-standard product (as in New Zealand) does not reveal critical factors that affect the price such as the shape of the transaction, the maximum volume, any callable elements, etc.

If trade by trade reporting was adopted, like in New Zealand, participants may be concerned about confidentiality. Although counterparty names would likely be withheld, sophisticated market participants may be able to identify structured hedges often used by new entrant retailers potentially impacting any competitive benefits of those deals.

A possible benefit of trade reporting from trade repositories is that it may reveal the transfer price between the generation and retail arms of vertically integrated retailers, without necessarily disclosing the party involved. However, without further rules around setting of prices for internal transfers, which would be intrusive, the value of this information would be questionable as transfers could be set at levels which provide the wrong impression of the true price of publicly available contracts. This would erode any potential transparency benefits for market participants seeking contracts and is unlikely to promote competition.

5.4 Market Liquidity Obligation

Once the reliability obligation is triggered, transparency, liquidity and competition issues could be addressed through the implementation of a Market Liquidity Obligation. An example requirement could include the following features:

- Imposed on vertically integrated retailers with generation over a certain size in the gap region, for example, greater than a 15 per cent share of generation in the region.
- Obligated participants required to post bid and offer spreads for the quarterly flat and peak swap in the region of the gap covering the period of the gap (e.g. Q1).
- Maximum bid-offer spreads of 5 per cent in both products.
- Bids and offers to be provided on a centrally cleared platform⁴ for the duration of half an hour before market close.
- Minimum spread volume 5 MW bid, 5 MW offer.

The benefit of this option is that it promotes transparency, liquidity and provides access to qualifying contracts. This approach is broadly consistent with mechanisms used in other markets where liquidity and competition is a concern, such as the UK, New Zealand and Western Australia.

⁴ Consideration is required about the appropriate platform in Tasmania where a centrally cleared platform is not available and whether the size of the SA market warrants a different approach.

The disadvantage is that obligated participants may incur additional costs and the possibility of managing unwanted trading positions.

5.4.1 Vertically integrated retailer's generation concentration calculation

Analysis is required to determine the appropriate generation threshold. The calculation would need to consider whether to use the vertically integrated retailer's generators' registered capacity, historic capacity factors or forward-looking availability assessments, such as those provided by generators to AEMO's MT PASA process. The best approach appears to be a forward-looking calculation of generator concentration to account for circumstances where generators are retiring, undertaking long overhauls or mothballed. The downside of this approach is it requires re-calculation whenever the reliability gap is triggered.

As the majority of generators are vertically integrated (including AGL, EnergyAustralia, Origin, Snowy Hydro, Hydro Tasmania, Stanwell, CS Energy etc.), if triggered, the Market Liquidity Obligation would provide access to the majority of providers of generation in the region of the gap.

The generation concentration calculation could consider covering at least three corporations in the obligation. It could also consider a minimum retailer size to be covered by the obligation to avoid obligating generators who are market customers for their in-station load.

5.4.2 Quarterly flat and peak swap in the region and period of the gap

The appropriate contract periods and types for which the Market Liquidity Obligation could apply need to consider the period of the identified gap and the types of contracts commonly used.

Rather than requiring a market in the quarterly product, an argument could be made that the obligation should provide a market in the calendar swap (or equivalently the four quarterly swaps) thereby providing access to market across all quarters. While this would deepen liquidity across a whole year, it appears to extend beyond the goal of ensuring liquidity, transparency and competition for the purpose of the reliability obligation and is therefore not recommended. Similarly, we have considered that an obligation to make a market in any region where a reliability gap is not triggered extends beyond the intent of the obligation.

Alternatively if the gap is forecast to be in a specific month, then perhaps the obligated participants could make a market in the relevant monthly product rather than the quarterly product. Again this is considered inferior to the quarterly proposal as monthly products are generally illiquid. Illiquidity means obligated participants would face heightened risk from market-making in these products.

A requirement to make a market in the peak product as well as the flat product aligns with the assumption that reliability issues occur at times of high demand. The peak product covers the period from 7am to 10pm. This window could be narrowed to align with the forecast gap.

The existing centrally cleared platform also lists cap products and consideration was therefore given to whether the market marking obligation should apply to caps. Conceptually this makes sense; however, the ESB is aware of some concern that given the introduction of five minute settlement, caps may be difficult for conventional generators to defend. Therefore to avoid uncertain and possibly unreasonable risks to market makers, caps are not recommended to be included in the obligation at this stage.

5.4.3 Maximum bid-offer spreads of 5 per cent in both products

A percentage bid-offer spread is robust to changes in the actual price of the product over time. Experience in other markets where a liquidity obligation applies has shown the importance of tight bid offer spreads though the need for 'tight' spreads needs to be balanced against the likelihood that this creates risks and costs for the market maker in managing trading positions.

5.4.4 Centrally cleared platform for the duration of half an hour before market close

Use of a centrally cleared platform provides access to market for the majority of participants. Those without access to this market, due to cost or limited credit budget, will still benefit from the visible, tradeable market through intermediaries. With the backing of access to products and a clear market price, it is expected that intermediaries will enhance their offering of bespoke products.

The half hour before market close is currently the period when liquidity is greatest. The obligation to provide the liquidity at this time therefore builds on the market's preference for trading at this time. The obligation could apply for a longer period of time (such as all day or one hour etc.) but this is likely to be considered too great an obligation.

5.4.5 Minimum spread volume 5 MW bid, 5 MW offer

These parcel sizes are consistent with standard trade sizes and therefore will assist those under the Market Liquidity Obligation to manage their position. Although the bid and offered parcel size would be 5 MW, through the existing centrally cleared platform, small participants have the opportunity to trade in parcel sizes as small as 1 MW.

Consideration could be made as to whether the obligation should be limited by a total trade volume over a particular period. For example limiting the total volume traded over a particular period, such as a week, would help to support liquidity while mitigating concerns that large vertically integrated retailers may have about the size of the obligation.

5.5 A combination of the options

Some combination of a requirement for central clearing, trade repositories (with associated reporting) and the Market Liquidity Obligation may provide the best option to achieve the objectives of ensuring liquidity, transparency and competition are not negatively affected by the reliability obligation. Alternatively, just one approach may best achieve the objectives at minimum cost. The options below have been assessed and are summarised in the following table:

1. Central clearing only.
2. Central clearing or trade repositories (with reporting).
3. Trade repositories (with reporting).
4. Trade repositories (with reporting) in combination with a Market Liquidity Obligation.
5. A Market Liquidity Obligation only.

	Central clearing only	Central clearing or trade repositories (with reporting)	Trade repositories (with reporting)	Trade repositories (with reporting) and Market Liquidity Obligation	Market Liquidity Obligation only
Liquidity	<ul style="list-style-type: none"> Increased on central platforms in standard products. Increase in liquidity from vertically integrated retailer trading may not reflect liquidity available to all market participants. 	<ul style="list-style-type: none"> No expected change to liquidity as participants have the freedom to transact as they currently do. 	<ul style="list-style-type: none"> No expected change to liquidity as participants have the freedom to transact as they currently do. 	<ul style="list-style-type: none"> Tight Bid/Offer spreads and regular markets support the potential for increased liquidity. 	<ul style="list-style-type: none"> Tight Bid/Offer spreads and regular markets support the potential for increased liquidity.
Transparency	<ul style="list-style-type: none"> Increased liquidity provides increased confidence in market prices. Prices from vertically integrated retailer trading may not reflect prices available to all participants. 	<ul style="list-style-type: none"> Increased transparency through regulator reporting obtained from data in trade repositories. Usefulness of the reporting dependant on design. Transparency of vertically integrated retailer internal transfers likely to be unhelpful. 	<ul style="list-style-type: none"> Increased transparency through regulator reporting obtained from data in trade repositories. Usefulness of the reporting dependant on design. Transparency of vertically integrated retailer internal transfers likely to be unhelpful. 	<ul style="list-style-type: none"> Regular pricing provides greater confidence in market prices. Increased transparency through regulator reporting obtained from data in trade repositories. Usefulness of the reporting dependant on design. Transparency of vertically integrated retailer internal transfers likely to be unhelpful. 	<ul style="list-style-type: none"> Regular pricing provides greater confidence in market prices.
Competition	<ul style="list-style-type: none"> Small participants disadvantaged by 	<ul style="list-style-type: none"> Greater relative burden for small 	<ul style="list-style-type: none"> Greater relative burden for small 	<ul style="list-style-type: none"> Competition enhanced through 	<ul style="list-style-type: none"> Competition enhanced through

	centrally cleared margin requirements and lack of bespoke products	participants of costs of central clearing and/or trade repositories.	participants of costs trade repositories.	access to tradeable prices. <ul style="list-style-type: none"> Greater relative burden for small participants of costs trade repositories. 	access to tradeable prices. <ul style="list-style-type: none"> Smaller liable entities could access market offerings via secondary trades through larger entities, potentially alleviating some of the transaction and prudential costs associated with central clearing.
Cost	<ul style="list-style-type: none"> Transaction and margin costs likely to be higher for many participants compared with OTC transactions. Additional cost and risk of inefficient hedges. 	<ul style="list-style-type: none"> Central clearing and/or trade repositories will add additional costs for all liable entities. 	<ul style="list-style-type: none"> Trade repositories will add additional costs for all liable entities. 	<ul style="list-style-type: none"> Trade repositories will add additional costs for all liable entities. Providers of the Market Liquidity Obligation will face transaction costs and potentially unwanted positions as a result of providing the service. 	<ul style="list-style-type: none"> Providers of the Market Liquidity Obligation will face transaction costs and potentially unwanted positions as a result of providing the service.

Preferred approach

- The ESB's draft preferred approach is to adopt the Market Liquidity Obligation in conjunction with a trade repository and reporting requirement. All contracts that qualify would need to be either centrally cleared or reported in a trade repository; including where vertically integrated retailers wanted to use their own generation.
- A key question for the ESB in finalising the detailed design of the Guarantee is whether the benefits of implementing the trade repository and reporting requirement would warrant the costs incurred by industry.

A **Abbreviations and defined terms**

AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
ASIC	Australian Securities and Investments Commission
ASX	Australian Stock Exchange
COAG	Council of Australian Governments
ESOO	Electricity Statement of Opportunities
ESB	Energy Security Board
Guarantee	National Energy Guarantee
MW	Megawatt
MWh	Megawatt-hour
NEM	National Electricity Market
OTC	Over-the-counter
PPA	Power purchase agreement

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