



MACQUARIE

National Energy Guarantee

Macquarie Group submission to
the Energy Security Board

8 March 2018



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1. Submission to the ESB

1.1 Introduction

Macquarie Group (**Macquarie**) welcomes the opportunity to provide this submission to the Energy Security Board's (**ESB**) consultation on the design of the National Energy Guarantee (**NEG**).

Macquarie supports the objectives of the NEG to provide a framework for the electricity industry to achieve the policy goals of emissions reductions while maintaining security and reliability of the physical grid. Macquarie welcomes the consultative approach being taken with industry and a broad range of stakeholders.

We would like to highlight that the electricity industry comprises a diverse range of participants beyond generators and retailers. The diversity of energy sector participants – including intermediaries, funds and insurers – is a potential area of policy strength. In our submission, we have suggested that continued recognition of this diversity of interests in this sector would promote efficient and effective policy outcomes.

1.2 Macquarie's participation in the Australian energy sector

Macquarie participates in the energy industry in various capacities as principal and in support of clients, including as: an electricity retailer to very large energy users such as industrial and manufacturing operations and market participant in the National Electricity Market (**NEM**); a financier for, and investor in, and developer of, renewable energy assets and infrastructure behind and in front of the meter; and a financial intermediary and provider of over-the-counter (**OTC**) electricity derivatives products in the electricity contracts market as well as a major clearing broker for ASX electricity futures contracts.

1.3 The electricity contracts market

Financial electricity hedge contracts are important to the operation of the NEM and make a substantial contribution to supporting the objectives of the physical market. As noted in the ESB consultation paper, the NEM is a spot market intended to resolve the supply and demand equation between generators and consumers of electricity in real time, with NEM participants exposed to financial risk of variable spot market price outcomes.

Financial risks in the spot market are managed by NEM participants through the use of electricity contracts. Trading in OTC electricity derivatives products on a bilateral basis or through brokers, and exchange-cleared electricity contracts through the ASX, enable NEM participants to manage their exposure to these variable price outcomes and achieve greater certainty about expected revenue or energy costs.

Investment in energy infrastructure, lower costs of capital, and an observable basis for retail pricing for consumers are fostered by a transparent and liquid financial market that provides for efficient risk transfer between market participants. Given these outcomes are compatible with energy policy objectives, we suggest consideration of the impact of the NEG on transparency, liquidity and efficient risk transfer in the electricity contracts market.

1.4 The role of intermediaries

Intermediaries support the ability of physical market participants to manage their risk portfolios and contributes to an active and functioning wholesale market.

Intermediaries have a longstanding, varied and active role in energy markets. Intermediaries serve a wide range of market participants in trading and wholesale risk management, as well as broader financing and credit support requirements. Often intermediaries fulfil a need that physical market participants, such as generators, may not be able to address for reasons such as:

- constraints around physical assets – a generator may limit the volume of hedge contracts it will sell due to the maximum generation capacity of a generation asset, the maintenance schedule for that asset, or the need to make allowance for operational factors;
- internal policies on trading in regions without assets – a generator may limit trading in a state where it does not have generation assets or limit the risk of exposure to variation in prices between regions;
- limitations on the ability to deal with a counterparty on credit or other commercial terms – a physical market participant may not be able to trade with another market participant because of credit limitations or the parties cannot agree on terms;
- timing of hedging decisions – physical market participants may choose to come to market at different points in time, and intermediaries support the liquidity of the market to meet those requirements on a daily basis; or
- an inability to provide a tailored risk management product for strategy or risk related reasons.

In such circumstances, intermediaries contribute to the efficient operation of markets by absorbing and managing risk in their books. This contributes to the liquidity of the market, the visibility of pricing, and the development of new products.

Intermediaries are not aligned with specific generation assets which enables them to provide a broad range of products and services across the market and interact with a broad set of counterparties. This independence can also enable intermediaries to provide additional flexibility in the types of products and services that are provided and customise products to meet end-customers' requirements rather than being shaped around the capabilities of the physical asset they are written against.

Intermediaries also fill a role in the market as providers of financing facilities and structured funding solutions. For instance Macquarie is an active provider of reallocation to retailers in the NEM to support their prudential obligations with AEMO. Being active in the trading market enables intermediaries to make lending decisions with the benefit of a stronger understanding of the market and provide innovative solutions that accommodate customers' financing and trading requirements. Intermediaries can also extend appetite and capacity for financing into structured hedging solutions for customers to meet specific requirements that arise in their underlying businesses.

1.5 Supporting a competitive energy market

The NEM's participants are diverse in terms of market role, size and incumbency. We are supportive of a NEG that fosters a competitive environment with opportunities for different players to participate.

The NEM's diverse participants include:

- vertically integrated 'gentailers';
- large and small retailers;
- intermediaries including banks, funds and insurers;
- generators that are fully contracted under Power Purchase Agreements (PPAs), or have some form of retail channel to market, as well as a small number of merchant assets; and
- technology players developing the market in new areas such as demand side management and batteries.

We believe the current design of the NEG could have the unintended consequence of raising barriers to entry for new competitors. For example, requiring retailers to enter into contracting arrangements that support a desired mix of generation assets in the physical market could lead to suboptimal outcomes compared to a situation where financial products can be utilised, wholly or partially, to manage these risks.

The ability of small to mid-tier participants to support physical generation assets

Contracting arrangements to support the participation of physical generation assets in the market tend to be highly structured and long-term in nature, placing them beyond the financial and operational capacity of a number of existing and prospective market participants to transact. Long-term transactions favoured by asset developers and owners contrast with the natural contracting horizon for retailers, which is driven by their underlying customer base.

For example, new-build renewable assets in the NEM have almost exclusively been supported by PPAs provided by large investment-grade counterparties. This is not surprising given these entities are best positioned to enter into these sorts of arrangements by virtue of their size and capability, credit rating, and position in the market with a stable customer base. In contrast, newer players may not have the same financial capacity or certainty of customer load profile to enter into these sorts of arrangements and thus rely on other means of managing their risk profile.

Small to mid-tier participants and customer volatility

Small to mid-tier retailers also tend to experience higher volatility in customer numbers than large retailers due to differences in the relative size of their business and changes in strategy owing to competitive pressure and opportunities in different market segments. This higher variance in customer numbers and load makes long-term forecasting difficult and poses a barrier to entering into long-term transactions.

Technology as an enabler of market development

In addition, technology in the NEM is rapidly evolving which should prompt new retailers to enter the market with new products and solutions for customers as well as facilitating new product design by existing retailers. For example, the deployment of demand-side management and batteries, the ongoing rollout of behind-the-meter solar PV in the residential

and increasingly the business customer market, and the direct contracting for PPAs means the products used by customers will continue to evolve beyond the fixed price, variable volume retail supply arrangement that has been historically dominant.

Policy design

We believe there are opportunities to design a NEG and a flexible market structure that: recognises the difficulties energy companies may have in executing complex contractual requirements; encourages the development of new products and solutions for customers; and encourages competition.

The AEMO-led central book-build model suggested in the consultation paper could be a preferable approach to implementing the reliability mechanism. A central book-build model would enable AEMO to co-ordinate reliability requirements across each node and the collective market and integrate it with existing processes, such as the Electricity Statement of Opportunities, to provide a common 'reliability gap' forecast to the market of physical market requirements that need to be met for a particular period.

If the market does not independently respond to meet the reliability gap, AEMO could manage an auction or contracting process that enables the cost of incremental capital expenditure for that capacity to be socialised across all energy users in the market, rather than obligating retailers to enter into contracts for that capacity (and potentially be penalised for non-compliance) and then instituting a procurer of last resort framework.

This framework would enable the requirements of the physical market to be resolved while allowing financial markets to function efficiently. It would:

- avoid the tiering of financial market contracts;
- allow all participants to continue to exchange and manage risk in an appropriate manner;
- allow for the market to respond in a faster timeframe to a reliability gap. This is due to elimination of the time needed for a reliability requirement to be allocated across retailers, and for retailers to respond, prior to an AEMO process being initiated.

Additionally, placing the obligation to source emissions-related contracts on generators rather than retailers could be an alternative approach to managing the NEG's emissions requirement. Doing so would align the incentives within the NEG to those that have the greatest control over the emissions of generation assets. Generators are also uniquely placed to utilise their assets in conjunction with renewable generators to manage swings in production that result from intermittent assets and provide combined solutions to the market.

The absence of a direct price signal to asset owners provides a potential loophole that allows continued dispatching into the NEM without triggering consequences under the NEG. This leads to a policy anomaly as the retailer may not have direct influence over the generation asset. Some retailers could provide financial incentives for the asset owner to change that behaviour however not all retailers could do so, and there are more direct ways to achieve the desired policy outcome.

1.6 Wholesale market liquidity

We are supportive of a NEG framework that balances the need to optimise the performance of the physical market with preserving liquidity in the financial market and the speed and efficiency with which participants can exchange risk on agreed parameters.

The financial market plays a critical role by enabling energy market participants to manage and exchange risk on a dynamic basis. Financial markets provide risk management alternatives such as ASX Futures, OTC broker markets, and bilateral trading and relationships across a range of parties. It facilitates risk transfer with standardised contracts as well as customised transactions to manage more complex risks.

Liquidity is fundamental to an effective financial market, and it provides parties with certainty about their ability to transact when needed. Market liquidity is supported by a market structure that facilitates the participation of a wide range of parties, and balances the benefits of centralising open interest around standardised products and terms with the need for the products provided to meet the underlying requirements of the parties involved. Market liquidity also benefits from observable prices for standardised contracts, as is currently available from the ASX and OTC broker markets.

For example, the design of the NEM to create a single regional reference node for each state that acts as a price point for all power produced and consumed in that state is beneficial as it consolidates the risk management requirements of the market around a single point, rather than a nodal pricing approach which may see participants needing to carry potentially significant amounts of basis risk in their portfolio. The use of loss factors to adjust the volumes of energy sold by generators and bought by retailers enables the requirements of the physical market to be met while also supporting a healthy financial market and risk transfer between participants.

Crucially, market participants need to access risk management products on an ongoing basis. Portfolios are constantly adjusted for all manner of changes in the underlying business and at all tiers in the market. Market participants need not only to be able to make these changes at times of their choosing, but also have the confidence they will be able to make further changes in the future and make decisions to both rotate in or out of risk or retain risk at different points. Market liquidity and the ability to exchange risk in an efficient manner through standardised dealing terms is critical to this process.

The current design of the NEG segments financial markets contracts into tiers based on capacity rights and emission intensity. Doing so could increase financial risk and operational risk in participants' hedging portfolios. It would also impact the overall liquidity of the market as it creates a divided market structure where participants' natural underlying interest is forcibly spread across a number of contract types, and increases the complexity and potential variability of the terms of those contracts.

Another possible consequence of the segmenting of financial contracts into separate tiers that should be considered is the impact on accounting standards relating to reporting of the fair value of derivatives in financial statements. Complexity in the underlying instruments may

create uncertainty in valuing the contracts and the segmentation may also limit the ability to net or offset positions in an energy company's accounts.

It would also impact the ability of the NEM to foster competition and new entrants, as many new retailers typically manage their risk through the use of financial contracts such as those traded on the ASX and OTC markets. Losing access to those contracts could reduce the ability of these entities to participate in the market.

There is a risk in the design of the NEG that by adopting a bilateral contracting solution to solve a physical market issue, the same issues of opaque pricing benchmarks will arise in the electricity market. A useful contrast to consider is the domestic gas market which does not have a well-developed financial market, meaning contracting between parties is largely restricted to the physical market, with complexities and time required in negotiating the particular requirements of individual transactions on a case by case basis, and the lack of a visible forward curve to participants in the market as well as the wider public.

Some moderate adjustment of the policy design foreshadowed in the consultation paper could result in a NEG design structure that meets the aims of the policy and the needs of the physical market while positively addressing the potential implications for the financial market highlighted above. This in turn would support the ability for all participants to conduct trading and risk minimisation in an efficient manner and consistent with the policy objective. For instance, managing potential for a capacity gap centrally through a book-build process conducted by AEMO, and managing emissions requirements at a generator level discussed above are possible approaches in this regard.

1.7 Conclusion

We applaud the efforts of the ESB to design a reform program that helps the market achieve the dual policy objectives of reducing emissions while ensuring reliability of the grid, and appreciate the policy consultation process that encourages collaboration across government, industry and other stakeholders.

2. Responses to specific questions

2.1 Section 3: Emissions requirement – Energy Security Board design elements

Section 3.2: Applying the Emissions Requirement

What are stakeholders' views on how a retailer's emissions should be determined?

As noted above, owners and operators of *carbon*-emitting generation assets are likely to make the most impactful contribution to the NEG's emissions goals as it would provide a direct signal to investors in generation. Retailing buying behaviour is an indirect signal and arguably a less efficient policy option.

Additionally, placing emission contracts obligations on retailers creates a potential policy anomaly where *generation* assets can continue to dispatch into the NEM with no price signal to change behaviour to meet the emissions outcome of the policy.

Section 3.3: Contracting and Emissions

What are stakeholders' views on:

- *the methods for determining the emissions to assign to contracts where the generation source is specified?*
- *how to determine the emissions per MWh to assign to contracts that specify an emissions level but do not specify a generation source?*
- *the appropriate emissions level to assign to contracts that do not specify an emissions level or generation source?*

What (if any) impact would these approaches to determining the deemed emissions level have on liquidity and availability of those types of contracts?

What are stakeholders' views on how to determine the emissions level to assign to unhedged loads?

Macquarie is supportive of potential emissions contracting obligations being as transparent and standardised as possible. This would minimise potential impact on the effectiveness of financial contract markets.

For example, the actual emissions for an asset may vary from the emissions level contained in a contract written by that asset owner because of differences in output, fuel mix or plant efficiency. The consultation paper anticipates that parties would need to negotiate on a case-by-case basis how this risk would be borne between them. This would almost certainly result in different outcomes in each negotiation, thereby reducing standardisation of contracting terms and having a detrimental effect on the ability of entities to efficiently transfer risk and enter into hedges in the market.

Another example would be the treatment of unhedged loads, where parties would need a mechanism for managing risk on their emissions without necessarily contracting for price at the same time.

What are stakeholders' views on how the contract market may evolve to support this type of compliance with the emissions requirement?

Macquarie supports standardising as best possible the emissions level across contracts to support the liquidity in that market.

Section 3.4: Flexible Compliance Options

If limits are to be specified, what should those limits be and how should they be designed? For example, should the size of limits vary inversely with the size of the retailer's load? This could give more flexibility to smaller retailers.

If the NEG required retailers to manage contracting obligations for emissions or reliability directly, Macquarie suggests implementing a minimum threshold level at which they come into effect. As discussed above, the financial and operational capacity of smaller entities to enter into these types of contracts is more limited and this has the potential unintended consequence of deterring new entrants into the market.

If the limit on deferral should be a static percentage of load (rather than varying), what percentage is appropriate? That is, what percentage would provide the necessary flexibility without substantially increasing the risk that the overall emissions reduction target would not be met?

Macquarie suggests implementing a threshold level so that entities have the required flexibility to balance emissions requirements across years, without unduly increasing the risk of the overall emissions reduction target not being met.

If offsets are permitted by the Commonwealth Government

- *Should limits on individual retailers' use of offsets be set at an absolute level, regardless of retailer size? An absolute limit would represent a greater proportion of a smaller retailer's emissions than a larger retailer.*
- *Or, instead, should limits on individual retailers' use of offsets be based on the size of retailers' loads, such that offsets represent the same proportionate share of retailers' emissions regardless of retailer size?*

Macquarie supports the use of offsets so that the NEG can promote lowest cost abatement. If a limitation on total offsets is incorporated we suggest that provides retailers of different sizes with critical mass of potential volumes they are purchasing from offset projects. An exemption or differential threshold on contracting requirements for the NEG for small-scale retailers with less than a certain amount of load would help mitigate any perceived issues about differences between large and small retailers on an absolute limit versus a percentage limit.

If limits on use of offsets are independent of retailer size, how should the risk of large retailers splitting into several smaller entities for the purposes of increasing their overall offset limit be addressed?

One option would be the licensing and regulatory process. For instance, the offset entitlement could be attached on a per licence basis rather than a per NEM Participant ID basis. In considering a request for a licence grant the Australian Energy Regulator and/or Essential Services Commission could consider whether they consider the application is for a new business rather than an attempt to avoid NEG obligations.

Alternatively the offset entitlement could be drafted so that it applies at a corporate group level rather than to an individual entity.

Macquarie notes that the Victorian Energy Efficiency Scheme has operated for some time with an exemption threshold for participation and this has not prompted any retailers to attempt to reorganise themselves in an attempt to obtain undue benefit from a higher offset limit.

Section 3.6: Reporting and Compliance

Is information on generators' contracting positions also required to be entered into the compliance registry, for the purposes of reducing the chance of either double-counting or attributing generation output to the wrong retailer?

Macquarie supports the provision of information that promote integrity in the design and operation of the policy, and support the ability of assets to obtain finance. A centralised registry would enable relevant stakeholders to assess the risk of an asset being over-contracted, bearing in mind that risk-sharing between parties on differences between contracted and actual generation in a given period may vary across different contracts.

Section 3.7 and 5.11: Other Considerations

What are stakeholder views on how the Guarantee may impact on competitive market?

As noted earlier in this submission, we request the NEG's design be sympathetic to a range of potential issues that could arise including: impacts on liquidity and transparency of markets; valuation of contracts and accounting issues that may negatively impact market participants; and potential tiering of contracts in the market, creating barriers to entities being able to manage risk and obtain finance.

We note asset ownership in the current market is highly concentrated. As such, policy objectives may be better achieved if impartial stakeholders, such as AEMO, managed policy or scheme requirements. An environment in which potential competitors are required to contract with each other would be less likely to achieve policy outcomes.

2.2 Section 4: Emissions requirement – Commonwealth Government design elements

Section 4.2: Setting the Electricity Emissions Target and Review Process

Stakeholder views are sought on options for setting the emissions targets under the Guarantee

Macquarie is supportive of an emissions target being set as a percentage of MWh sold, rather than an absolute level of MWh to be achieved.

Stakeholder views are sought on:

- *Whether, and in what circumstances, electricity emissions targets already set should be adjusted.*
- *The process for making any such adjustments to electricity emissions targets.*

Macquarie is supportive of maintaining a given emissions target (expressed as a percentage of MWh sold) over a period of time, for example a five-year window. This would provide the market with the certainty required to promote medium term contracting to achieve a desired level of abatement. Any variation in actual emissions achieved against target levels could be factored into the target for future emissions periods, with clear signals provided to the market about the desired emissions target in that forthcoming period and the impact of any under/over performance of emissions from the previous period in adjusting that target.

Stakeholder views are sought on the proposed approach to setting the electricity emissions targets under the Guarantee and interaction with state renewable energy schemes.
Macquarie supports measures that integrate state-based renewable energy schemes into the overall scheme design.

Section 4.4: External Offsets

Stakeholder views are sought on whether retailers should be allowed to use external offsets to meet a proportion of their emissions requirement. In particular, views are sought on:

- *Whether there is a strong rationale for the use of offsets within the Guarantee*
- *The impact allowing offsets would have on investment under the Guarantee*
- *If offsets were to be used to help achieve compliance with the emissions requirement, what would be an appropriate limit for their use?*

Macquarie supports the appropriate use of offsets in the NEG where those offsets are of equivalent abatement quality to emissions abatements obtained within the NEG, in order to support lowest cost abatement outcomes across the economy. For instance, the Australian Carbon Credit Unit (**ACCU**) scheme has given rise to a range of methods for achieving emissions abatement, and integrating that scheme into the NEG would help provide a new source of potential buyers for these units as the current Emissions Reduction Fund (**ERF**) funding allocation reaches full allocation.

The recent falls in the cost of renewable energy suggest that allowing offsets under the Guarantee is unlikely to crowd out investment in renewable energy projects that may not otherwise occur. The market would operate most effectively in a stable investment environment that has a defined role for offsets as part of the overall emissions policy objective.

Macquarie supports an allowable threshold being set at a level that provides smaller retailers with critical mass in their potential purchasing of offset emissions from projects, and ensure that both large and small offset projects can be considered by retailers so that smaller retailers are not disadvantaged by being unable to access large scale offset projects that may have lower costs by virtue of economies of scale. A potential threshold of 20% could be an appropriate level to consider in this context.

2.3 Section 5: Reliability requirement

Section 5.3: Forecasting the Reliability Gap

Should the existing ESoO and MTPASA forecasting processes be adapted for determining the gap, or should a separate bespoke process be developed?

Macquarie encourages the NEG reliability gap forecasting process to tie into the existing ESoO and MTPASA processes. This will ensure consistency of signals to the market on capacity and reliability requirements so that participants can respond accordingly.

Section 5.5: Triggering the Requirement

What is the minimum feasible time period for the market to alleviate a potential shortfall?

Macquarie proposes that a minimum period of 2 years would support a larger number of market participants to act and meet a reliability gap. This also matches with the timeframes for

entities making decisions on hedging and load forecasting and making risk management decisions.

Section 5.6: Qualifying Instruments

What are stakeholder views on the types of contracts that should be considered eligible for the purposes of the requirement?

Do stakeholders consider eligible contracts should be financial, or have a link to physical capacity?

What do stakeholders think of the approach to certify financial contracts back to a physical asset?

To what extent does the design choice about eligible contracts influence different types of retailers, and so market structure?

Macquarie would be supportive of an AEMO-led book-build process for meeting the reliability requirement as it would reduce the need for the market to rely on a designated reliability contract process.

Linking reliability contracts with physical assets can lead to a mismatch with the contracting approach used by asset owners for most scheduled generation assets. For instance thermal generators tend to hedge on a N-1 basis meaning that if a 2,000 MW station consists of 4x 500 MW units, then the generator may only make three of those units totalling 1,500 MW available to the contract market. This is to protect the generator from extreme financial risk in the event of a unit failure, notwithstanding that the physical market has that 2,000 MW of capacity available to it.

Requiring a strict link back to a physical asset may result in the total volume of contracts available to meet the reliability gap being fewer than physical assets in the market, as availability of “physically backed” contracts would be influenced by the risk appetite and strategy of the natural sellers of those contracts. This could create distortions in the efficiency of the reliability mechanism as the fundamentals of the reliability contract market do not align with the fundamentals of the physical market.

Section 5.7: Allocating the Requirement

What are stakeholder views on the proposed method of allocating the gap to retailers?

Macquarie supports the proposal of AEMO acting to book-build required capacity to meet a reliability gap, and socialise that cost across all market consumers. This would support market confidence in the reliability mechanism process and avoid potential competition issues identified above.

Should the gap be allocated based on AEMO’s forecasts or on the retailers’ own view of their hedge positions?

We are supportive of AEMO determining the gap and it being used as the basis for managing a book-build process as required. For the purposes of allocating costs where a gap is identified a more effective approach may be for AEMO to allocate the cost of that gap for a given period on a pro-rata basis across the actual usage of energy of users it invoices in that period. This would be simple to implement and already well understood by market participants to allocate other costs in the market.

Should a different level of compliance and/or reporting requirement be required for large energy users who are registered Customers?

Macquarie supports a single set of rules applying to all customers in the market. This would facilitate consistency in the contracting requirements of participants which in turn would maximise potential contracting liquidity.

What are stakeholder views on extending the reliability requirement to large energy users that are not market customers?

Macquarie believes obligations to meet the reliability requirements are best limited to market customers to reduce administration and implementation costs. Under the more efficient approach of an AEMO book-build, there would be little value in extending the reliability requirement as the usage of these customers would already be accounted for by AEMO in a whole-of-market approach.

Section 5.9: Procurer of Last Resort

What are stakeholder views on the including a procurer of last resort function in the reliability requirement?

As outlined above, Macquarie supports the reliability gap being met by an AEMO-led book-build process, with the cost of any capacity required for a particular period socialised across consumers of energy in that period. AEMO would act as a procurer of last resort in the event that following a reliability gap being identified the market has not developed the capacity of its own accord.

3. Disclaimer

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