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Consultation on Retail Reliability Obligation Detailed Policy Issues

AGL Energy (**AGL**) welcomes the opportunity to make a submission in response to the Energy Security Board's (**ESB**) draft Retail Reliability Obligation (**RRO**) Detailed Policy Issues (**Detailed Policy Issues**).

AGL is one of Australia's largest integrated energy companies and the largest ASX listed owner, operator and developer of renewable generation. Our diverse power generation portfolio includes base, peaking and intermediate generation plants, spread across traditional thermal generation as well as renewable sources. AGL is also a significant retailer of energy, providing energy solutions to around 3.5 million customers throughout eastern Australia.

In addition, AGL is continually innovating our suite of distributed energy services and solutions for customers of all sizes. These behind-the-meter energy solutions involve new and emerging technologies such as energy storage, electric vehicles, solar PV systems, digital meters, and home energy management services delivered through digital applications.

The Role of the Retailer Reliability Obligation

Prior to the October 2018 COAG Energy Council meeting, the ESB consulted on draft exposure legislation to form the National Energy Guarantee[1] (**Guarantee**) as well as alternate pre-conditions options to trigger the reliability requirement[2] prior to providing a final detailed design of the Guarantee to the Council.

The Guarantee was developed from recommendations in the Independent Review into the Future Security of the National Electricity Market (**Finkel Review**), which found that long-term investment certainty was required to increase supply in the wholesale market and drive an orderly transition to investment in the right mix of generation to replace aging thermal assets. Integrating new generation and managing the closure of large generation assets will remain a key priority for the National Energy Market (**NEM**) for many years to come.

Currently, some of the cheapest sources of electricity are large-scale wind and solar farms, which have zero short-run marginal costs and can therefore dispatch into the wholesale market at very low prices. However, renewable generation such as wind and solar does not by itself provide a firm source of electricity or the same levels of system inertia and ancillary services as synchronous thermal plants have traditionally provided to the NEM. Therefore, to maintain system reliability and security, the Finkel Review recognised that complementary market reforms would be required to drive both investment in new assets and the orderly closure of aging assets that have traditionally provided these services.

[1] AGL's response to this consultation is available here: https://thehub.agl.com.au/articles/2018/09/submission-in-response-to-the-energy-security-boards-consultation-on-neg-amendments
[2] AGL's response to this consultation is available here: https://thehub.agl.com.au/articles/2018/09/submission-in-response-to-the-neg-reliability-requirement-pre-condition-options-paper

As a result, the Finkel Review proposed a Generator Reliability Obligation (**GRO**) and investigation into the operation of a Strategic Reserve, in addition to a number of other recommendations to improve NEM security and reliability. In considering the Finkel Review recommendations and the GRO, however, the ESB considered that utilisation of the underlying financial markets that drive investment in the NEM would be the most efficient way of maintaining an adequate level of dispatchable and flexible resources, as dynamic efficiencies could be achieved by regulating contracting behaviour between parties to deliver specific outcomes.

The design of the reliability component of the Guarantee therefore proposed that retailers enter into firm contracts to meet peak demand in periods of forecast shortfalls, instead of requiring generators to ensure that the generation fleet as a whole met system reliability and security parameters. By mandating an obligation to contract to peak demand, retailers would be required to either contract with existing dispatchable resources or fund the development of new firm capacity to meet their obligations. It was anticipated that these dispatchable resources would therefore also incidentally provide additional benefits to the NEM in terms of security and reliability concerns at times of non-peak demand.

AGL was supportive of the Guarantee framework put forward to the ESB in August 2018, largely because of its attempt to integrate energy policy with emissions reduction targets, which we consider will be a long-term imperative for energy markets in Australia. We were also supportive of considerations as to how the system will continue to meet peak demand in an environment of increased variable generation.

The reliability component of the Guarantee was originally conceived to have a limited role in the overall operation of the NEM, as providing a backstop to significant forecast capacity shortfalls during the transition to increased interconnection and penetration of variable generation sources. While conceptually this would also assist in maintaining system security by improving the availability of firm generation sources, there is no direct requirement for dispatchable resources to remain available in the market during periods of medium or low demand, or to provide system security services in periods where the RRO does not apply.

These principles are important to state prior to further discussion regarding the detailed design of the RRO. Elements of the detailed design will impact on the behaviour of market participants and the type of resources that will be incentivised in the market, as well as those that become increasingly underutilised and withdrawn from the market. In further examining the detailed policy issues, we therefore encourage the ESB to undertake further industry consultation on the proposed mechanics of the RRO beyond the current submission process, including facilitating working groups and technical discussions to be able to inform policy makers and relevant stakeholders accordingly of potential implementation risks and unintended consequences.

Changing dynamics in the NEM

AGL is acutely aware of the factors that may influence the dynamics of gas and electricity markets in Australia over the coming decade. The interaction between increasing variable renewable energy, new interconnection, gas availability, and progressive closure of existing coal and gas generation plant could feasibly lead to adverse unserved energy outcomes and system strength issues without an appropriate response from policy makers.

The dependencies between these factors have been clearly stated by a number of sources including the Finkel Review, the ESB's modelling for the Guarantee and the RRO, AEMO's annual Electricity Statement of Opportunities (**ESOO**) and Integrated System Plan (**ISP**), and projects such as ElectraNet's study to facilitate South Australia's energy transformation[3], which led to the proposed development of the NSW-SA

[3] See https://www.electranet.com.au/projects/south-australian-energy-transformation/

interconnector. These reports build on numerous studies that have also looked at the historic effect of subsidised renewable energy on electricity markets and the impact of rapid closure of thermal plant that was poorly forecast.[4]

Despite the challenges associated with integrating renewables into the grid, the consensus among these reports is that electricity will increasingly be sourced from variable renewable sources. To facilitate this uptake, the grid is forecast to become more interconnected to unlock the benefits of Renewable Energy Zones (**REZ**); areas where renewable generation is more efficient due to natural resource availability.

AEMO's ISP proposes a future model of the NEM that supports greater interconnection and access to REZ. In this model there are significant increases in renewable generation sources and associated storage, which displace thermal generation to provide an optimal mix of cheap low emissions-intensive generation to reliably support the NEM as a whole.

There is much potential to gain from the successful integration of these technologies. For example, the ESB's own modelling for the RRO predicts a BAU reduction in wholesale prices leading to a reduction of $400 per average bill over the 2020-2030 period compared to 2017 prices, based largely as a result of decreased wholesale prices from higher penetrations of renewables.

In a more detailed study concerning the market benefits assessment for the proposed SA-NSW interconnector, benefits to customers as outlined by ElectraNet are predicated on a reduction in wholesale market prices in SA due largely to an expected exit of gas plant and reductions in associated fuel costs, as renewable generation with low short-run costs displaces more expensive thermal generation.

However, proposed increases in variable renewable energy supported by greater interconnection will have significant impacts on how energy is sourced across the NEM and therefore the utilisation and load-factor of remaining thermal generation assets. Lower utilisation rates and suppressed wholesale prices affect the ability of assets with high input and operating and maintenance costs to remain financially viable.

As a result of the NSW-SA interconnector proposed in AEMO's ISP, for example, the SA market is forecast to become heavily reliant on interconnectors to ensure reliability of supply, as both the ISP and ElectraNet's proposals forecast that some gas generation will exit the market, being displaced by cheaper interstate sources. The potential exit of dispatchable plant may also have implications for regional system security and hedge market liquidity**.**

These outcomes are known to policy-makers and are factored into long-term plans for the NEM. However, planning documents such as the ISP and RIT-T proposals often do not forecast detailed impacts on metrics such as competition, market liquidity, and the availability of firm contracts, despite the improvement of these metrics currently being at the focus of market reform.

The displacement of firm generation by interconnection and renewables as predicted by a number of studies may therefore point to a need to support minimum levels of firm and synchronous generation to ensure system security and reliability outcomes are preserved, while also maintaining stability in the wholesale market. However, the level of support to meet these outcomes needs to be set at an efficient level for customers.

The way the RRO is designed means that it may not incentivise this broad range of requirements. As currently designed, the RRO requires liable entities to enter into contracts to evidence cover for nominated peak demand periods. However, these peak periods do not necessarily coincide with periods where

[4] For example, Nelson, T., F. Orton, & T. Chappel (2018) 'Decarbonisation and wholesale electricity market design', *The Australian Journal of Agricultural and Resource Economics*, 62(4), pp 654-675 (Available at: https://onlinelibrary.wiley.com/doi/abs/10.1111/1467-8489.12275)

directions are called upon for firm generators to maintain system strength. The focus on peak demand means that the RRO does not support utilisation of assets in other periods to underpin investment in generation that could assist the system in periods of normal or low demand.

Other mechanisms may more directly incentivise and reward system strength services and drive greater efficiencies in the wholesale market. This requires a holistic view of the services required to remain in the NEM as a result of the transition to a more interconnected system with a greater dependence on renewables, and could consist of new and existing complementary markets for the provision of system strength and inertia (both from networks and competitive providers), frequency response and system restart capability, as well as reserve mechanisms, where all participants across the supply chain could equally compete for the provision of necessary wholesale market services at the lowest total cost to customers.

Detailed policy principles

Considering the above, we support design principles for the RRO that limit its application to very specific circumstances; namely, where a large forecast capacity shortfall has been identified and investors have not responded by developing new generation to take advantage of tighter demand-supply imbalances.

One of the key benefits of the RRO is that its application would be predictable and would therefore establish a degree of investment certainty for participants over time. By design, the more stable the settings of the RRO mechanism, the less likely it is to be triggered, as longer-term more accurate forecasts of tight supply conditions and risks as a result of market intervention will be more apparent to market participants.

The RRO will be a significant disruption to markets if it is actually triggered and will likely come with significant costs. To meet the objective of providing more certainty for investors over time, it must therefore only be triggered in clear circumstances where the benefit exceeds these costs, and not under normal market operating conditions.

Material Reliability Gap Definition and Communication

The ESB's draft design considers a range of ways in which the RRO could be triggered, with reference to objective metrics to support a materiality test. We support the use of an objective metric to trigger the mechanism as it provides more certainty for the market. In our view, the most appropriate metric for a mechanism that is aimed at addressing a capacity shortfall is likely to be a projection of significant unserved energy (**USE**) above that required by the reliability standard.

USE reflects both the volume and duration of capacity shortfalls under a range of scenarios, therefore providing the best indication of the materiality of any capacity shortfall in the market. The reliability standard, currently set at 0.002% USE, is the current benchmark for the operation of the NEM, which reflects the point at which the marginal benefits of increased reliability equal the marginal cost of the additional generation capacity required to achieve it, based on the value of reliability to customers.

While the reliability standard is a probabilistic calculation of unserved energy needs, the RRO seeks to require energy retailers to be hedged to one in two year (**POE50**) peak demand, to incentivise sufficient capacity being available to meet forecast peak demand periods. There is a disconnect between the stochastic nature of the USE calculation and the absolute requirements of the RRO, but all other things being equal, we do agree that probability of USE should be reduced with greater firm capacity available during peak demand periods.

While requiring retailers to be hedged to meet their peak demand may indeed incentivise the market for firm capacity contracts during those periods, it will not ensure that system reliability will be met at all times. For example, USE events may arise at periods that are not covered forecast trading intervals for the purpose of the RRO.

The focus of the RRO should therefore not be to eliminate all unserved energy events. Rather the RRO should only be triggered if a significant violation of the reliability standard is forecast that necessitates further market intervention beyond the existing drivers for investment in the market. In this context, the application of Option B as presented in the paper would be preferable, at the very least until the design of the RRO has been finalised and detailed modelling can be provided on the impacts of operation under various scenarios.

We also strongly support a process where the AER (perhaps with assistance from the Reliability Panel) has discretion to not trigger the RRO even where the threshold has been reached, on the basis of an assessment as to whether or not the trigger would be in the best interests of customers in the long-term. The AER's discretion should be exercisable within a set tolerance level. In exercising this discretion, the AER should be provided with broad details from AEMO regarding the USE modelling, including risks as a result of lack of firm generation and allowing the AER an opportunity to assess the credibility of AEMO's input data.

Procurement of last resort

Where there are forecasts of USE exceeding the reliability standard by some margin, and where these forecasts have been assessed by the AER as being material and credible, the RRO could be triggered to drive a further incentive for the market to procure additional reserves, or as a last resort, require the procurement of reserves by a central authority.

To facilitate this outcome, reserves should only be procured to the extent that they bring the market back to normal operating conditions, otherwise, the RERT mechanism should be utilised under the principles established through the current enhanced RERT consultation. More information could be provided on how forecasts of USE will translate into material reserve requirements, given that USE is a probabilistic determination that can not be directly translated into long-term shortfall reserve requirements.

Compliance with shortfalls

Where the cost of procurement of last resort is subsequently assigned to a non-compliant entity, it is unlikely that the assessment of shortfalls will be as simple as the examples presented in the ESB's paper. In reality, both the costs of procurement of last resort and liable entities' hedge cover is likely to be much more complicated. In the case of AGL, as a vertically integrated retailer with significant load and multiple generation assets in each state, our portfolio to cover hedging to POE50 is likely to comprise of a broad range of derivative products with different conditions as well as contracts with a number of generation assets including vertically integrated generation.

Availability and dispatch payments for varying levels of last resort supply may be similarly complex to assess, as evidenced by AEMO's recent report on the operation of the RERT during summer 2017-18, given that costs may be borne on an availability basis even if energy is not dispatched.

We also note that trading intervals are very likely to move to 5-minute settlement, starting 1 July 2021. This will further complicate the ex-post examination of contracts, bidding behaviour, generator performance, dispatch, and other interactions in the wholesale market.

In practice, shortfall assessment could potentially become onerous and particularly complicated under certain proposed methodologies. We therefore consider that as much as possible, assessment of a retailer's liability should therefore be made a simple as possible and on the balance of the options provided, we consider that aggregate non-compliance with a simple shortfall cost per MWh would appear to be the simplest and most equitable assignment of costs.

Concerns that penalties are unmanageable could be addressed by reference to the entity's conduct and the scope of non-compliance, taking into account the burden of the actual payment of costs in that

compliance year, under a methodology determined by the AER. However, we consider that in principle the penalty should be equal across liable entities regardless of their size or overall load, as the penalty relates to shortfalls that affect the market equally regardless of the non-compliant entity's load.

Principles for firmness adjustment of qualifying contracts

We agree with the broad criteria set out by the ESB in assessing the firmness of contracts, being: the strike price; the variability and profile of volume settled under the contract; the likelihood of the contract providing cover to the buyer during the reliability gap; and other contractual terms which limit the coverage or otherwise reduce the incentive for a seller to "defend" the position.

However, these principles should not stifle contracting innovation and the ability for market participants to dynamically manage their portfolio to reduce costs for customers. Firmness methodologies should also not directly or indirectly favour certain technologies. Principally, retailers should be able to manage their exposure to the wholesale market in a dynamic and efficient manner, rather than be subject to additional contracting requirements that will impose costs on consumers.

In particular, calculation of the firmness of a retailer's hedging portfolio needs to consider USE risks as a result of transmission outages in a highly interconnected NEM that will be increasingly dependent on variable renewable generation. Retailers are unable to influence interconnector availability and opportunities to access firm products may change as more energy is sourced from other NEM regions over time.

Next Steps

AGL remains committed to supporting policy that provides clear long-term investment signals for the electricity sector. We look forward to engaging further with the ESB to discuss market reform that could maintain system security and reliability at the lowest cost to customers.

Should you have any questions in relation to this submission, please contact Aleks Smits, Manager Policy & Research on 03 8633 7146, or myself on 03 8633 7252.

Yours sincerely,

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