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The National Energy Guarantee

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The National Energy Guarantee (NEG) was recently announced by the Federal Government as a major reform of the National Electricity Market (NEM). The policy aims to improve system reliability, reduce greenhouse gas emissions and lower electricity costs for consumers. There are separate reliability and emissions targets which are to be achieved by regulating the wholesale electricity purchases of retailers to ensure they meet minimum requirements.

The new reliability requirements will commence in 2019 and the emissions guarantee is to start in 2020. Emissions targets are to be set by the Federal Government. Information currently available on the policy is limited to the advice the Energy Security Board provided to the government on 13th October.

1 Reliability Guarantee

The reliability guarantee will set the amount of firm generation that must be purchased by an electricity retailer. The required levels will depend on the total peak electricity load of the customers supplied. The existing Reliability Standard will determine the percentage of load requirements that are to be met by firm generation and how much capacity each retailer needs to procure. The specific settings for each region are to be determined by the Australian Energy Market Operator (AEMO). It is unresolved as to how many of the Finkel Review reliability recommendations will be replaced by the NEG.

The reliability target will need to be set at least two or three years in advance given that new large generators can't be realistically built in a shorter period. The guarantee will require accurate long term forecasts of customer demand. Over the last ten years the market operator has shown how challenging it can be to forecast consumer demand in the NEM. In its 2008 forecast AEMO predicted that the NEM would supply more than 240 TWh of electricity in the 2017 financial year. The actual figure was closer to 191 TWh.

If the demand forecast used for the NEG turns out to be too high then retailers will purchase more contract cover than they need and the costs of supplying electricity to consumers will increase. If the forecast is too low it could mean that not enough firm generation will be built and available for retailers to purchase as contract cover. However in this situation it's more likely that there will be no change to the current procurement activities of retailers and the guarantee won't drive any noticeable change in contracting. After all, retailers make their own forecasts to ensure that they are adequately hedged.

There are already incentives in place for retailers to procure energy from reliable generation sources. As part of supplying electricity to their consumers, retailers either purchase their wholesale requirements using contracts or have access to their own generators. The portfolio procurement exercise involves an element of risk given fluctuating customer demand. A retailer ensures it has adequate coverage to meet the requirements of its customer portfolio by making a probabilistic assessment of future demand. If retailers didn't do this they would be exposed to volatile NEM prices. Every megawatt-hour (MWh) not covered by a contract is paid for by the retailer at the prevailing wholesale spot price. These spot prices and can reach levels as high as $14,000 per MWh (they are normally around $80 per MWh). This explains why contracts for firm energy already attract a premium to non-firm alternatives. Wind farm generators (for example) are less likely to succeed in obtaining an offtake agreement with a retailer given their intermittent energy output. Some wind farms have been built without an off-take contract with a retailer.

The Energy Security Board advice says that the introduction of the guarantees will improve competition. However, increasing the portfolio cover required by retailers favours

the retailers who own their own power stations and already have access to firm, dispatchable generation. The natural incentive for retailers to contract for firm supply tends to fall away as a retailer becomes vertically integrated with a generation portfolio. It improves the ability to manage wholesale price increases and volatility. Vertical integration and market concentration is a significant feature of the market and can contribute to higher consumer costs. Incentives to improve competition are required and it is not obvious how the NEG will support this objective.

Smaller retailers will have to procure contract backing for their entire customer portfolio from the wider market. This is already challenging in some NEM regions such as South Australia where contract liquidity is poor. A very real possibility is that small retailers will be unable to purchase adequate firm capacity to meet this requirement. The NEG proposes to deregister any retailer that consistently fails to comply with the guarantee for firm supply. This could reduce competition and deter new retailers from entering the market. Exemptions from the guarantee may be necessary for smaller retailers.

Imposing additional contract requirements on retailers for reliability won't remove the occurrence of unplanned generator outages and associated equipment failures. One example is on 10th February 2017 when two major NSW generators incurred unplanned outages on a day with unusually high customer demand. Both generators were gas turbine stations which can usually be expected to provide firm capacity. Predicting when unplanned outages occur is not possible but they remain a very real feature of the daily operation of the market.

An increasing number of households and businesses now have small generation facilities such as rooftop PV installed on site. If combined with a battery these behind-the-meter installations could contribute to both the reliability and emissions guarantee. Aggregation of large numbers of these small sites improves the proportion of generated energy that can be considered as firm and contractible.

2 Emissions Guarantee

The emissions guarantee mandates an amount of renewable or low emissions generation that must be procured by each retailer from the wholesale market. The policy anticipates that in 2030 the generation mix will be made up of 28-36% renewables and consist of both intermittent and dispatchable sources.

Trade exposed emissions intensive businesses represent some of the largest electricity users in the NEM. They are exempt from attracting an emissions liability under the guarantee which means they will avoid incurring any additional costs from their retailer. Retailers will be faced with either absorbing these costs from the emissions guarantee or passing them through to other customers such as households and small businesses. A similar subsidisation across electricity users occurs for the Renewable Energy Target.

It is not yet clear how the emissions guarantee will interact with the ambitious Victorian and Queensland renewable energy targets. The Victorian scheme is already legislated and the future of the Queensland scheme will depend on the outcome of the state election to be held in November. If these state schemes are implemented in full then it would be relatively straightforward for the NEM to achieve its share of Australia's emissions target. The emissions guarantee would be more likely to have an impact retailer contracting activities if the two state schemes were either dropped or substantially amended.

Another unresolved question is how the emissions guarantee will interact with the reliability guarantee. The energy provided from standalone intermittent sources (such as wind generation) supports emissions but not the reliability guarantee. If the two guarantees aren't complementary then a retailer could end up procuring surplus contract cover to ensure it meets both requirements. One option is that the retailer contracts for hydroelectric and gas fuelled generation as these technologies could satisfy both guarantees. But neither offer an unlimited source of new capacity, each for its own reason. It may be necessary to prioritise one guarantee ahead of another to avoid over hedging and additional costs being passed through to consumers.

The NEG doesn't introduce financial penalties for retailers who don't comply with their share of the emissions guarantee. Under the current Renewable Energy Target a retailer must pay $65 for each certificate that it hasn't procured. The penalties under the emissions guarantee appear to be far less onerous. If the regulator determines that a retailer hasn't fulfilled its requirements it will be given an opportunity to achieve its requirement at a later stage. This arrangement is probably too flexible and may not be adequate to ensure that emission targets are met.

3 Conclusion

The NEG involves a direct intervention by government in the electricity market but the extent of its impact is not yet clear. It will depend on how much additional contract cover retailers are required to procure under the two guarantees. The consultation and design of the NEG should consider

how the guarantees will interact. Its success requires long term and stable targets for the whole market. The targets cannot be set in isolation – they will increase a retailer's contracting costs if they are set too high or are subject to constant amendment. A NEG with soft targets will drive no changes to the existing activities of retailers and no improvement in emissions abatement or system reliability. A greater consideration should also be given to the potential impacts to competition and whether smaller retailers are adversely affected under the policy.

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