



NATIONAL ENERGY GUARANTEE

CLEAN ENERGY COUNCIL SUBMISSION TO CONSULTATION PAPER

FINAL

March 2018

EXECUTIVE SUMMARY

The National Energy Guarantee (NEG) consultation paper is a welcome step forward in the dialogue on the hard policy issues needed to overcome the chronic long-term uncertainty confronting Australian energy investors. As clearly identified by the Finkel Review into Energy Security, it is only once this uncertainty is resolved that we can expect investments in sufficient new capacity that will deliver more affordable, reliable and lower-emission electricity.

The clean energy industry remains open-minded about the potential of the NEG. As outlined in the consultation paper, there remain crucial questions to be resolved before investors will have the confidence to commit the significant levels of private capital necessary to ensure sufficient new supply to maintain reliability, drive down wholesale power prices and achieve the decarbonisation of the energy sector. The CEC supports the intent to integrate energy and climate policy and achieve this in a manner that can finally overcome the continued politicisation of energy policy in Australia. However, this will only occur if the NEG is designed and implemented in an effective manner.

While private sector investment in new energy generation has been booming recently behind the Renewable Energy Target, the lack of a coherent and bipartisan national policy beyond 2020 puts further growth in doubt over the long-term. This consultation paper has begun to provide some much-needed policy detail and presents a good opportunity to commence serious consultation and design of the policy.

The clean energy sector assesses new policies against the following criteria, and these have informed our feedback on the NEG:

- Provide long-term policy stability that will deliver new investment and lead to lower wholesale and retail electricity prices
- Constrain high-emission generation resulting in reduced output and timely closure
- Deliver a long-term investment signal that supports financing of new energy generation capacity
- Positive interaction with or transition of RET and other existing renewable energy schemes
- Public and political acceptance
- Leverage current policy framework with a smooth transition
- Managed transition considering supply security and local community and workforce transition.

A number of policy options exist to facilitate investment in new low-emission capacity to replace high-emission generation in advance of its closure. While we acknowledge that this may not be a central objective of the NEG, it is crucial at a minimum that the NEG is not designed and implemented in a manner which explicitly or implicitly extends the life of existing fossil fuel based assets.

The following is a summary of key issues raised by the Clean Energy Council (CEC) in this submission:

New investment is critical: The NEG's central objective should be to provide long-term stability to deliver a sufficient level of new investment in the most appropriate forms of new generation. The CEC is committed to energy policy that addresses the energy trilemma: delivering an affordable, secure and environmentally sustainable supply of electricity. This outcome will only be achieved if Australian energy policy can deliver a sufficient level of new investment in energy generation, in an appropriate form, location and time.

New investment will require a strong and enduring abatement target and an efficient and scalable policy mechanism: Strong, clear and long-term emission abatement settings will be essential to provide the necessary level of incentive for new clean energy projects, which will also ensure new power supply to drive down wholesale power prices. Given the extraordinary technological and economic development of clean energy this decade, the Australian energy sector now has the potential to achieve much greater emissions abatement at lower cost than many other sectors of the Australian economy. A strong and enduring abatement target will be crucial to achieve this, along with an efficient and scalable policy mechanism which will deliver investment certainty far beyond 2030 and can be scaled up over time.

The NEG must consider the range of other substantial market reforms under consideration and design: While the NEG may have the potential to enhance energy reliability, it will not be the panacea to delivering a robust and modern energy system. The CEC supported the recommendations of the Finkel Review and believes that the 49 reforms supported by the Federal Government are extremely important and should continue to be accelerated in parallel with the consideration and design of the NEG. At the same time, we would caution the ESB that there is a danger that the reliability obligation simply doubles up on other reforms underway. The institution of rule changes and reforms resulting from this process are likely to largely resolve concerns around ensuring a secure and reliable energy system as renewable energy increases its share of the market. These include rule changes for the notice period for plant closure, the requirement for TNSPs to procure minimum levels of inertia and also maintain system strength, and potential further reforms such as a market for fast frequency response, the institution of a strategic reserve and a market in demand response. Given these major reforms, the reliability obligation may provide limited further improvement in the NEM's ability to avoid outages, while adding considerable additional complexity and costs.

Interaction with existing renewable energy policies is crucial: The Renewable Energy Target (RET) has been the central – and, in fact, only – enduring energy policy delivering new investment in clean energy generation over much of the last 15 years. The NEG must be very carefully designed to interact with the RET and existing state-based schemes in a manner that doesn't negatively impact existing investments made in good faith, stall the pipeline of new

projects being pursued under these policies or undermine confidence in the secondary markets associated with these renewable energy measures.

Competition and market design must be enhanced: The NEG must enhance the current design of the National Energy Market and, in particular, contribute positively to greater competition across all aspects of the energy sector. Anything which could lead to the further concentration of market power or introduce barriers to new entrants as a result of the introduction of the NEG must be fully considered and avoided through the design phase.

Allowing carbon credits will extinguish the investment signal for new generation and result in higher power prices: If the NEG is to positively contribute to the trilemma of affordability, reliability and sustainability of the energy system, it must enhance investment confidence in the sector. The inclusion of Australian or international carbon credits in the NEG would dilute this investment signal and confidence, resulting in a reduction in new investment that would ultimately detract from the reliability of the energy system and lead to higher power prices because of the reduced supply of generation.

The risk of complexity: The very high level of complexity of this policy means policy design is critical, and the chances of unintended consequences is high. This reinforces the need for an extensive consultative and design process, with careful implementation and continuous refinement should the NEG be progressed.

The clean energy industry is looking forward to further developing the design of the NEG and working closely with the Energy Security Board, the COAG Energy Council and the Federal Government.

The CEC's response to the consultation paper has been divided into two parts. Part 1 articulates some of the priority issues that need to be addressed in any further development of the NEG. Part 2 then delves down into more detail addressing many of the specific questions within the consultation paper and examining some of the more technical issues related to the functioning of the policy initiative.

PART 1 – KEY PRIORITY DESIGN ISSUES

Modernising Australia’s energy sector to achieve reliability, affordability and low emissions

As the Finkel Review clearly set out, Australia’s energy system is in need of modernisation. Australia has one of the most carbon-intensive electricity generation sectors in the world, with over 70 per cent of our existing coal-fired generators at or beyond their planned operational life.

In the last four years the consequences of a confused and disjointed climate and energy policy framework have become increasingly evident. Investment in new capacity slowed, while existing fossil fuel based plant continued to close, often at very short notice. The end result is that the market has been caught unprepared, losing large amounts of generation capacity with insufficient time to replace it with new plant. With supply tightening in some parts of the NEM, the inevitable result has been large spikes in power prices.

Substantial investment in new forms of electricity supply is required over the coming decades. Given the cost and other limitations of other forms of new electricity generation, the vast majority of this new investment in generation capacity will come from renewable energy sources. At the same time, these new forms of generation are highly sophisticated, with continued innovation that is allowing it to play an ever-greater role contributing to grid stability and reliability. The adoption of single axis tracking for large scale solar, pilot trials of synthetic inertia for wind farms and the integration of battery technology are just a few examples of this innovation that is occurring across the sector.

Investments in electricity generation assets typically have investment horizons of several decades. Transforming Australia’s energy sector therefore requires both long-term planning and a stable and sustained policy platform. This should ensure investment decisions do not lock in an unnecessarily high emissions profile, and that this transition takes place in a timely manner. Most of the existing fossil fuel generators were built and funded decades ago by state governments and are now fully depreciated. Consequently their output is priced on short-run costs (primarily fuel costs). This contrasts with new investments that must recover all of their costs over the life of the investments, which remain a significant barrier to the deployment of new low- or zero- emission generation.

Ensuring a smooth transition to a low-carbon future for Australia’s electricity sector requires that clean energy generation must be in place before the most inefficient and polluting generation can be phased out. This is not a new concept, and one of the primary objectives of the National Electricity Market is to ensure supply in excess of demand to avoid blackouts caused by a major plant failure. Moreover, the express purpose of the Renewable Energy Target (RET), legislated in 2000 and again in 2009, was to encourage the introduction of new clean technologies to transform Australia’s energy generation into one less reliant on fossil fuels.

It is clear that decarbonising the electricity sector is imperative to meeting medium and long-term emissions targets. Based on current scientific consensus the electricity sector will need to be at

or close to zero emissions by 2050, and many countries have made statements in support of that principle.

Clear long-term energy and carbon policies will provide the framework to achieve this goal while making the structural adjustments that will ensure Australia remains internationally competitive in a low-carbon world. The design of the NEG must anticipate this inevitability for Australia and therefore be scalable over time.

The following sections set out the key issues that the NEG design must address.

An emissions target that is durable and scalable and that accommodates state governments' ambitions

The Federal Government's proposed emission reduction target for the NEG (that NEM emissions in 2030 be kept 26 per cent below NEM emissions in 2005) represents only a minor reduction from what is expected under business as usual (excluding any impact from state government promises beyond the renewable energy reverse auctions already in train).

This emissions target is problematic for the following reasons:

- 1) It is unlikely to encourage sufficient new investment in generating capacity and therefore undermines the intent of the NEG to address the energy trilemma of reliability, affordability and emissions.
- 2) It is inconsistent with achieving the government's emission commitments under the Paris climate accord
- 3) An emissions trajectory ending in 2030 does not provide the long-term policy certainty for large capital investments that have an investment life of some 15-30 years.

Encouraging investment in new capacity

As previously outlined, the challenge facing investors in any form of new generation is that it is not viable at the short-run marginal cost of an existing coal plant. Without a policy measure that either circumvents that cost gap or provides some degree of assurance in advance about the timing of future coal plant closure, investors will tend to delay commitment to new generation capacity. While increasing statements and commitments from the existing coal generation owners is helpful, this uncertainty and absence of clear policy settings creates a lingering challenge for new investors.

The current abatement target proposed under the NEG is unlikely to provide that long term investment signal for a sufficient level of new generation. To keep power prices at moderate levels and avoid sudden supply shortfall shocks – like Australia experienced with the closures of Hazelwood and Northern power stations – substantial investment is required well in advance of coal plant closures. It is crucial therefore that the NEG be designed in a manner that can anticipate and accommodate stronger abatement targets in the future.

The proposed emission target is not consistent with achieving the Paris Climate Agreement targets

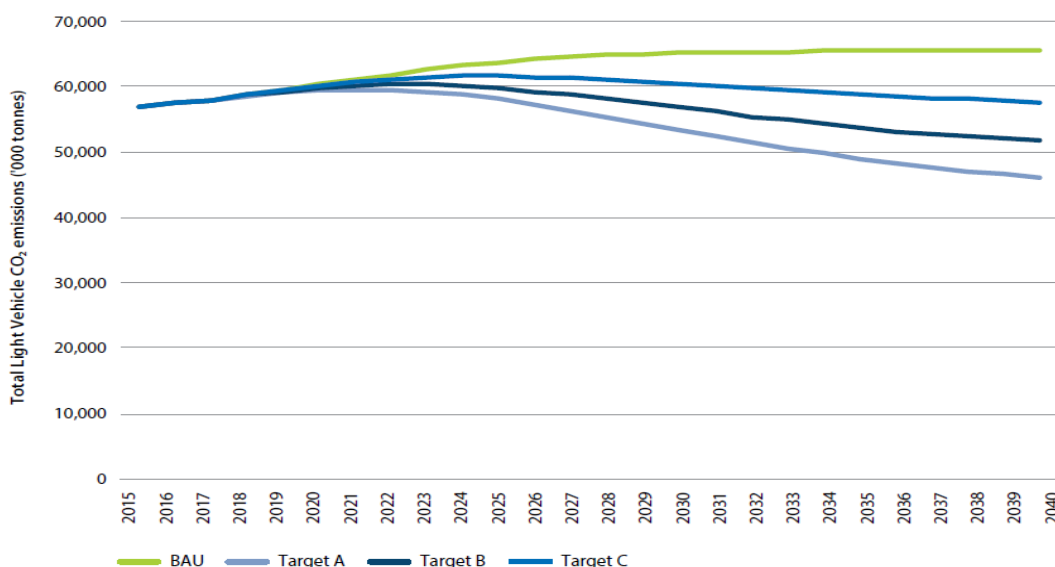
A range of publicly available analysis has revealed that the current proposed emissions target for the NEG falls well short of what is required to meet Australia's commitments for 2030 under the Paris climate agreement. The current target is not considered as durable by investors, based on an assumption that it will have to be increased and extended relatively soon. Given this, even if the NEG adopts a sound design for managing the achievement of emission goals, investors will remain hamstrung by uncertainty.

According to modelling of the NEG by Frontier Economics, it can be expected to reduce emissions from the NEM in the year 2030 by less than 10 million tonnes of CO₂ compared to business as usual. By comparison, according to the government's 2017 emissions projections, Australia is currently on track to exceed its economy-wide 26 per cent reduction target by 128 million tonnes.

This presents a material challenge for Australia, particularly when considering the constraints in achieving cost effective abatement in other sectors of the economy such as:

- The regulatory impact statement released in December 2016 outlined three potential options for motor vehicle standards, with their impact on light vehicle emissions illustrated in the figure below. Even the most ambitious proposal for reducing motor vehicle emissions is estimated to deliver 11.7m tonnes of emissions reduction by 2030.

Emissions from light vehicles under different proposed vehicle emission regulation standards



Source: Australian Government (2016) *Improving the efficiency of new light vehicles - draft regulation impact statement*

- In terms of industrial process emissions, the government has announced its intention to phase out the use of high global warming potential refrigerant gases known as HFCs. If

these were completely phased out by 2030 (actual phase out date is 2036), it would deliver at most another 15.4m tonnes of abatement by 2030.

- The challenges of achieving meaningful abatement from the agriculture sector are well known and understood.
- The National Energy Productivity Plan is yet to provide any hard quantification of the emissions abatement it will provide. As a lot of its impact will be in electricity consumption across the NEM, this is unlikely to make any contribution to reducing emissions beyond what is already targeted by the NEG.
- The safeguard mechanism is another possible source of abatement but there is now a consultation process underway that might weaken the degree to which these emission baselines apply a hard quantitative constraint on facilities' emissions.

The above constraints combined with the extraordinary cost reductions in clean energy in past years, lead to an obvious conclusion that the energy sector is capable of delivering more than its proportional share of the national abatement commitment. This would clearly be a more cost effective approach for the Australian economy, and the design of the NEG should anticipate this.

If the government wishes to have a cost effective and credible policy framework to achieve its 2030 Paris commitments, it will have to substantially increase the stringency of its NEG emission target. Ideally the government should also look to expand the scope of the NEG emissions obligation to all electricity generation in Australia, not just the NEM. Until such time as the government implements emission targets consistent with its international commitments, prospective investors in the power generation sector are likely to delay or withhold some level of investment. This adds to the challenge of delivering reliable, affordable and low-emission electricity.

Further, investors in energy generation assets are looking for policy certainty well beyond 2030. Energy generation assets have long investment lives that require policy certainty for more than 15 years. Given the current abatement commitment extends only to 2030, this becomes problematic for investors expected to take a long-term approach when assessing the viability of new projects. The clean energy industry therefore urges the Australian Government to consider abatement target commitments well beyond 2030 as soon as possible to give greater investor certainty and underpin optimal investment decisions.

Accommodating state government emission reduction initiatives

Clearly there is a preference for a single national emission target under the NEG. However the clean energy industry supports the recognition of additional commitments, targets and policies from state and territory governments throughout Australia. These additional and complementary policies have proven to be very effective in delivering substantial new and additional energy investment and employment, as well as supply that has lowered wholesale power prices in these markets.

The best way to ensure efforts are unified and harmonised through the NEG will be for the mechanism to accommodate and support the ambitions of state governments to grow clean energy and address climate change.

An enforcement regime that provides unambiguous, predictable and respected methods of ensuring compliance

At present the consultation paper proposes two elements that pose a risk of undermining compliance of the emissions obligation and also undermine the predictability of the policy measure. These are:

- allowing the regulator too much discretion in how it enforces the obligation
- allowing for retailers to defer 20 per cent of their liability.

Given that non-compliance with the emissions obligation can be precisely quantified and demonstrated in a court of law, there appears very limited rationale to provide the regulator with what the consultation paper proposes as “graduated compliance framework”. As currently proposed, compliance with the NEG is unlikely to result in differing legal interpretations.

Further, particularly given the current proposed abatement target, there appears no basis for allowing retailers to shift a large proportion of their emission obligation to future years. Achievement of this target can be expected to be relatively easy for retailers. In this context a proposal to defer 20 per cent of their obligation to a subsequent year appears unwarranted and problematic as far as encouraging new and timely investment in low- and zero-emissions energy generation.

To support both high levels of compliance and also underpin investment and trading decisions, the consequences of non-compliance need to be clear and unambiguous. The design of the emissions obligation should therefore involve either:

- a straight financial penalty applied to retailers for each tonne of CO₂ in excess of their obligation, or
- that the regulator be required to make good on any exceedance of the target and be empowered to recover the costs of this from non-complying retailers.

A smooth transition for participants in existing renewable energy measures

Given a range of technological advancements and significant cost reductions, renewable energy now represents (in conjunction with energy efficiency and demand side response) Australia’s most important means for cost-effectively achieving Australia’s emission targets. At the same time, given Australia’s wind, solar, hydro and bioenergy resources are some of the best in the world, these technologies now represent the country’s best hope of regaining its edge in low-cost electricity supplies.

At present the investment climate for renewable energy is very buoyant, but also very fragile. Unfortunately participants in the RET have been subjected to repeated policy review and change that have resulted in lasting damage to Australia’s reputation as a destination for renewable energy investment.

The RET has been central and crucial to the investments in renewable energy in Australia, and the transition of the energy sector. Given this, the ESB needs to be extremely cautious that it does not design the NEG in a manner which yet again undermines confidence for both renewable energy investors and participants in the RET market more generally, as well as the various state and territory-based reverse auction schemes.

The market in LGCs has become a means by which a number of participants can trade several years in advance to manage price risk and also deliver on voluntary abatement commitments. While some participants may be able to act to mitigate any transition between the RET and the NEG via contracts, this is not the case for all, particularly those participating in the secondary market for LGCs.

It is crucial that the design of the NEG avoids potential harmful impacts on those who have made investments and entered into long-term transactions under the RET and other state and territory renewable energy schemes. The CEC would welcome further consultation and consideration of this complex and very important issue.

The importance and challenges for new investment based on a central-planner's forecast of reliability requirements

Part 2 of our submission highlights a range of challenges the ESB will need to resolve in designing the reliability obligation.

One of the key points of emphasis is that the level, nature and timing of new investment will be highly dependent on the forecasts and transparency of the agencies charged with this task – a sometimes fraught and incredibly complex challenge.

Forecasting the growth, change and trends in the Australian energy sector over the past decade demonstrates just how difficult this task is. Undue emphasis was often given to reliability without regard to cost, and there are examples of transmission planners substantially over-estimating electricity demand growth. The result of this was billions of dollars of over-investment in electricity network capacity. This was the primary cause of a doubling in residential electricity prices over the transition to the national regulatory regime governing electricity networks.

Western Australia's SWIS provides another cautionary tale. Rapid advancements in energy efficiency and growth of solar PV resulted in substantial over-estimation of electricity demand growth. This has left WA consumers paying capacity payments to generators that were not needed to ensure satisfactory levels of reliability.

A central planning approach will inherently be biased towards conservative assumptions that excessively weight reliability over cost. On the other hand, the costs of an over-build of capacity are dispersed in small amounts across many, many consumers and can be difficult to isolate and quantify among an array of other factors driving electricity costs.

In the end the energy-only market we have in place provides high incentives to retailers – more than \$14,000/MWh – to ensure they have sufficient financial contracts in place to cover their customers' load. The ESB is yet to provide a thorough cost-benefit analysis to demonstrate the need for the imposition of further financial penalties on retailers to ensure the reliability standard is met. The beauty of the energy-only market design of the NEM is that the consequences of poor forecasting and investment decisions are borne by private sector participants, not consumers. The imposition of the reliability requirement runs the risk of unwinding this.

The primary problem inhibiting timely investment in new capacity that ensures ageing generation is replaced is the lack of a long-term, durable policy for emission reductions. That should be the overriding focus of both the ESB and Governments in order to ensure continued system reliability.

Keeping compliance costs low through using the registry of megawatt-hours and emissions to assess compliance

As the consultation paper rightly recognises, the NEG will spur an array of retailer contracting models to comply with its obligations. The history of the national electricity market illustrates that the means by which retailers manage procurement of energy and financial risks can take a wide array of forms. Attempting to disentangle these contracts to link a given contract to a specific generation source and its associated emissions, while avoiding any possible double-counting, could get extremely complicated.

The regulator should not be required to undertake a comprehensive review of the assorted contracts that retailers, generators and other market intermediaries will sign onto as they seek to manage both their customers' need for energy and the NEG emissions obligation (something which is likely to be an incredibly complex auditing and reconciliation process). Rather, this can be readily managed by the MWh-emissions registry that the consultation paper acknowledges needs to be put in place. Indeed this registry will be an essential part of underpinning an effective contract market for the NEG by providing a clear line of ownership custody between buyers and sellers of MWh and their associated emissions – such that the same megawatt-hour and its associated emissions (or lack thereof) can't be sold to two separate entities.

With this registry in place, the regulator can avoid getting mired in sorting through the intricacies of how energy is purchased to ensure the mixture of electricity a retailer has procured meets the emissions intensity target. The registry will provide an accounting system for all the megawatt-hours of electricity produced and their associated emissions. Each power station will have an assigned owner when it is registered in the registry by the regulator (presumably the registered owner with AEMO). This power station owner would be the assumed owner of its assigned MWhs and emissions and can then be left in control to transfer the ownership of the megawatt-hours and associated emissions in the registry to whomever it wishes via whatever contract form it sees fit. Of course, eventually it's likely that the MWhs will end up transferred in the registry to a power retailer or other liable entity, but it shouldn't be dictated that they are the only potential owner of registry MWhs and the associated emissions, because this could hinder market liquidity and efficiency.

For retailers to comply with the emission obligation, rather than present the regulator with what might be quite complicated and highly varied commercial contracts or power station ownership structures, they would instead simply point to which of the megawatt-hours (with their associated emissions) in the registry they are the registered owner of. They would then submit these to the regulator to extinguish so that they couldn't be used more than once to meet the emission obligation.

PART 2 – DETAILED RESPONSE

Managing the mechanics of the emissions obligation and assessing compliance

The CEC is concerned that the consultation paper is proposing a range of measures that are overcomplicating the NEG emission obligation. These risk increasing administrative costs and hindering market efficiency. This submission therefore proposes a series of recommendations below that will enhance the effectiveness and efficiency of how the NEG operates, while greatly simplifying and reducing the administrative burden faced by the regulator, retailers and other participants such as generators.

Section 3.2.1 Entities covered by emissions requirement

Question addressed: What are stakeholders' views on whether the compliance year should be a calendar year or a financial year, noting that EITE exemption processes under the RET use calendar years, whereas emissions reporting obligations relate to financial years?

Ideally both emissions reporting and compliance under both the RET and the NEG would be harmonised. The clean energy industry does not have a single view on the compliance year period, but wishes to note:

- The NEG's likely interaction with the NGER's framework which operates on a financial year basis.
- The NEG's potential interaction with the RET which operates on a calendar year basis. However, the clean energy industry is strongly of the view that the RET legislation not be changed in any way, including to align the compliance period with a financial year.

Section 3.2.2 Calculation of load

Question addressed: What are stakeholders' views on the process to calculate a retailer's load.

The NEG consultation paper has presented a process for calculating a retailers' load that is missing some important components. These are detailed in the two sections below.

Managing EITE exemptions

If EITE loads are excluded from liability then these will need to be reapportioned to the remaining liable load in order to ensure an overall balance between MWh generated and MWh that are required to meet the emissions intensity target. If this does not occur, there will be a shortfall of several million megawatt-hours of electricity generation that isn't captured by the emissions obligation, without any responsibility nor incentive to reduce the emissions associated with the EITE load at lowest possible cost.

The total EITE load could be reapportioned by adding it back on an equal pro-rata basis across the remaining liable MWhs. This is the approach currently adopted by the RET and its treatment of exemptions for EITE activities.

Embedded generation and self-supply

A large and growing proportion of NEM electricity supply comes from generators that are not captured by AEMO's wholesale electricity market metered data, including solar PV. For the emissions obligation to represent a comprehensive and effective measure for containing emissions, these generation sources need to be captured in calculating the overall system load as well as the generation emissions profile.

At the same time these sources of generation are usually lower emission sources of electricity than the pool average that will make it easier and less costly for retailers and customers to meet their emissions obligation.

To keep compliance costs tolerable, CEC suggests that systems less than a megawatt in size could participate in an opt-in basis to the National Energy Guarantee, while those larger than a megawatt could be expected to have the systems and metering in place to participate on a mandatory basis.

With smaller systems an opt-in basis will probably still result in a high level of participation because most of these generators will be zero-emission solar systems and so any extra liability would be outweighed by the benefit of being able to sell their excess low emission megawatt-hours to other liable entities. Also because there is a large and growing number of embedded rooftop solar systems participating in the LRET, the systems and capability to manage their involvement in the NEG at reasonable administrative cost is now possible.

By deducting exported generation from total generation of the embedded power generator it will be possible to estimate the extra liable load. To manage the liability associated with this extra load there are three options:

- 1) It could be apportioned to the retailer who is responsible for the National Metering Identifier associated with the embedded generator. This is technically possible because the Clean Energy Regulator's registry is now designed to collect the NMI associated with a rooftop solar system. This is not a preferred approach. This is because it creates an extra administrative process for customers and retailers to co-ordinate between themselves to manage compliance, with many retailers not currently collecting data on the amount of generation that customers self-consume from their embedded power stations.
- 2) The regulator develops a generic method that allows the owner of the generator or their assigned agent to calculate how many of the generated MWhs will need to be forfeited to ensure the extra load meets the emissions intensity target, with the remainder of the generated MWh being able to be sold to other liable entities to help meet their emission obligation.
- 3) In cases where the embedded generator is quite small (say below 100kW consistent with the SRES threshold), the regulator could develop a generic factor across all systems that would provide an averaged amount of annual generation that could be expected to be generated per kilowatt of capacity and an amount of that generation that could be expected to be self-consumed on average.

An even playing field for batteries

We understand that AEMO has an interim process in place that requires batteries above 5 MW to register as both a market customer and scheduled generator. It is important that in designing the NEG, batteries are treated consistently, irrespective of how AEMO might define them in the future. A level playing field is necessary that does not penalise early movers that are currently registered as market customers.

Sections 3.2.3 to 3.3.5 and 3.6.2 to 3.6.3 – Why the current proposed approach of auditing retailers’ contracts to assess compliance with the emissions obligation is unnecessarily complicated. Instead the registry can be used to make compliance vastly simpler, more efficient and more transparent.

Questions addressed:

- Section 3.2.3 - What are stakeholders’ views on how a retailer’s emissions should be determined? Section 3.3.1 - What are stakeholders’ views on the methods for determining the emissions to assign to contracts where the generation source is specified?
- If the contract specifies a portfolio of plants and the plants have differing emissions profiles (eg some are zero-emissions plants and some are gas plants, used for firming the variable renewable energy), how should the emissions per MWh under the contract be determined?
- Section 3.3.2 - What are stakeholders’ views on how to determine the emissions per MWh to assign to contracts that specify an emissions level but do not specify a generation source?
- What are stakeholders’ views on how the contract market may evolve to support this type of compliance with the emissions requirement?
- Section 3.3.3 - What are stakeholders’ views on 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 the liquidity and availability of those types of contracts?
- Section 3.3.4 What are stakeholders’ views on how to deal with internal non-contractual arrangements between the retail and generation arms of a gentailer, for the purposes of the emissions requirement?
- What are stakeholders’ views on how to determine the emissions level to assign to contracts between the retail and generation arms of a gentailer?
- Section 3.3.5 What are stakeholders’ views on how to determine the emissions level to assign to unhedged loads?
- Section 3.6.2 What are stakeholders’ views on the need for a compliance registry? What are stakeholders’ views on its design?
- Are there alternative schemes that would allow retailers to monitor and verify compliance with the emissions requirement? How could these alternative schemes work?
- Are there any additional features which the registry should have?
- Should any of the data in the registry be made publicly available?
- Section 3.6.3 What types of information are likely to be required to be entered into the compliance registry in order for retailers to monitor and assess their compliance with the emissions requirement?

- 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?
- Is there a need for retailers or generators to report contract pricing information as part of the input into the registry?

As discussed above, attempting to disentangle the array of market contracts to a specific generation source and its associated emissions while avoiding any possible double counting could get extremely complicated. The CEC is therefore proposing an approach which relies on the MWh-emissions registry that the consultation paper acknowledges needs to be put in place. As detailed above, the registry will provide an accounting system for all the megawatt-hours of electricity produced and their associated emissions.

In cases where the retailer was unable to point to megawatt-hours in the registry that were sufficient to cover its customers' load (entitled "unhedged load" in the consultation paper), it would then be assigned the megawatt-hours and averaged emission-intensity from those generators that were unable to sell or contract the electricity they produced. This uncontracted residual is likely to be from the highest-emitting generators which retailers will not wish to contract with. These high-emission generators would hinder, rather than assist them, to meet their emission obligation.

In cases where the generator produced electricity below the emissions intensity target however, they may wish to bank this to sell in a future compliance year. They should not be forced to surrender them to the uncontracted pool at the end of the year.

Creation of a bank of low emission electricity will assist liquidity and help to smooth out the year-to-year variation in generation between the mix of gas, hydro, coal, wind and solar that might occur. It should be noted that both hydro and gas generators are often subject to significant variation in output from year to year. If they are forced to sell their registry MWh-emissions in the year they are produced it could lead to noticeable volatility in the cost of complying with the emission obligation and the value of electricity from lower emission generators. This would likely also increase the cost to finance new power generators and deter entry of new capacity from non-vertically integrated generators. The entry of these generators will greatly assist in addressing concerns highlighted by the ESB in the past over insufficient levels of competition in the electricity market. In addition, by allowing lower-emission generators (not just retailers) to bank registry MWh and their emissions, it should build up a pool of uncontracted MWh that can be used to support new entrant retailers that may not be vertically integrated and in a commercial position to offer or underpin long-term contracts.

This may mean that in some years, particularly at scheme commencement, there could be less megawatt-hours available for sale than the amount of liable load (although this will ultimately be mediated by price). This could be managed through several means:

- Firstly, as the consultation paper suggests in section 3.3.5, the megawatt-hours that retailers failed to contract for, and for which there was insufficient generation in the uncontracted pool, could be assigned a default emissions level. We would suggest that this be set at the emissions per MWh of the highest-emitting plant operating in the NEM.
- The scheme could allow for the use of banked renewable energy LGCs created in years prior to commencement of the NEG which have not been surrendered to meet RET liabilities. According to a February 22 announcement from the Clean Energy Regulator,

the large-scale RET has a “more than adequate surplus of certificates through to 2020”. This surplus of renewable energy MWh could provide a useful supply buffer to support liquidity in the early years of the NEG.

- As we explain in further detail in our response to section 3.6.4 on enforcement tools, as an alternative to imposing financial penalties, the regulator could manage non-compliance via a make-good cost recovery system. In advance of scheme commencement, the regulator could be empowered to contract for a compliance buffer or reserve of low emission megawatt-hours. In the event that a retailer falls short of their obligation the regulator could use this buffer to make good on the retailer’s exceedance of the emission obligation. The regulator would then act to recover the costs incurred in procuring these MWh plus an administrative fee to cover the regulator’s administration costs and cost of funds and to provide a deterrence against ongoing non-compliance. This buffer could assist with supporting market liquidity, while also ensuring the scheme is effective in countering non-compliance while avoiding the need to use onerous penalties.

Each of these different approach will require further consideration to ensure their impact and merit is more fully understood.

Collection of information on the contracting positions of generators and retailers, and contract pricing in the registry, is unnecessary

The use of the registry would avoid the need to resolve the array of issues flagged in consultation questions about how to deal with different types of contracts. This also avoids the issues outlined in section 3.6.3 on whether it is necessary for the regulator to keep details on the contracting positions of retailers and generators in order to avoid double-counting or the attribution of MWh to a retailer which wasn’t entitled to claim ownership over them.

Also, in relation to section 3.6.3 there seems to be no rationale for pricing information to be collected in the registry in order to effectively manage compliance with the emission obligation.

Allowing registry data to be publicly accessible is vital to public trust and therefore the durability of the NEG policy as well as market efficiency that should help to contain costs.

In terms of section 3.6.2 there are very good reasons to make the registry data publicly accessible.

The emissions obligation is a product of government policy. Consequently key stakeholders, as well as the general public more widely, will want and deserve to be able to scrutinise how this policy is being implemented and complied with to ensure it is delivering what it is supposed to. If registry data is obscured or only revealed at the whim of the regulator, it runs the risk of fostering distrust and misinformation about the emissions obligation. This could ultimately act to undermine political support for the NEG leading to ad hoc and difficult to predict changes that will undermine investor confidence in new power plants.

We note that the high levels of transparency in the REC registry have set a precedent of what stakeholders expect is reasonable and achievable. The REC Registry allows any member of the public to identify the transaction history of each individual certificate under the scheme,

including which generator produced it, who has owned it over time and who has ultimately used it to comply with the scheme. If the NEG does not provide a similar level of transparency many key stakeholders – such as consumer and environmental representative groups – will become suspicious about the integrity and effectiveness of the policy.

In addition, making registry data publicly available will improve market transparency that will support better informed decision making by market participants and therefore greater market efficiency. Greater transparency about market information will also enhance understanding about the functioning of the market and therefore support greater investor confidence. Such market transparency will be particularly important for new entrants and therefore will help enhance levels of market competition. This should all act in combination to reduce the economic and consumer costs of the NEG.

3.4.1 Carrying forward over-achievement

Questions addressed:

- Should the emissions requirement allow for unlimited carry-over of overachievement or specify limits on the carry-over of overachievement?
- 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 limits are to be specified, how should overachievement in excess of the limits be treated? Should there be a process by which it is offered to the market?

The Clean Energy Council supports the principle of allowing retailers to carry forward any overachievement on their emission target to subsequent years. However, as highlighted in other sections of this submission, retailers should not be the only market participant that can bank compliance assets such as lower-emission megawatt-hours from one year to another.

3.4.2 Deferring compliance

Questions addressed:

- What are stakeholders' views on the deferral of compliance?
- Should all retailers be able to carry forward a fixed amount or should it be set proportionally to a retailer's load? This could give more flexibility to smaller retailers than large ones. If so, would any provisions need to be introduced to prevent large retailers re-organising themselves as several smaller retailers in order to gain the benefit of the higher limit?
- 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?

Allowing retailers to defer their liabilities into future years – especially when also proposed with giving the regulator substantial discretion over how they discipline non-compliance (see response to section 3.6.4) – creates a serious risk of undermining the credibility of the NEG as a

durable and meaningful measure. By providing generous allowances for non-compliance it risks underpinning the signal for new investment that is essential to addressing the trilemma of affordability, reliability and emissions reduction. This could create a pattern of behaviour where some retailers see compliance as whatever they can get away with. Once this occurs it can be very difficult for the regulator to turn things around because it becomes widespread due to competitive pressures between retailers to minimise costs.

In particular, the canvassing in the consultation paper that retailers might be allowed to defer a fifth of their liability into future years is problematic. Given the government has already proposed an emission target that represents far less than a 20 per cent emission cut from business as usual levels, a 20 per cent deferral could seriously undermine any material new commitment in generation. It would likely lead to the NEG's emissions obligation being seen by liable parties and power plant investors as nothing more than a token initiative.

Given the government has proposed an emissions target that represents little change from business as usual there seems to be little need to provide any flexibility to retailers in deferring their liability to future years. Given the Clean Energy Regulator expects a healthy surplus of renewable generation beyond that required under the 2020 RET, retailers should be expected to have no difficulty obtaining the mix of MWh required to meet the Federal Government's current proposed emissions target.

We would suggest that if the ESB were concerned about the possibility of the market encountering periodic short-term low-emission supply shortfalls, this would be better dealt with via the regulator building up a buffer or reserve of low-emission megawatt-hours via direct contracting with low-emission plant.

We explain in our response to section 3.6.4 below that this buffer can be employed to make-good on retailers' compliance shortfalls as an alternative to imposing penalties. Such a mechanism is superior to allowing deferral because it discourages a situation where retailers in financial difficulty might accumulate large shortfalls which they then subsequently fail to make up. It also provides the regulator with their own window on the market that allows them to better evaluate any claims that might come from obligated entities in the future that compliance is too difficult due to insufficient new sources of supply.

3.6.4 Enforcement tools for emission requirement

Questions addressed:

- What are stakeholder views on the proposed approach to compliance with the emissions requirement and particular:
- Whether this approach provides the appropriate drivers of compliance.
- The type of information the AER will need to access to ensure compliance.
- Other possible enforcement tools, such as increased prudential requirements or restrictions on accepting new customers while emissions requirements remain outstanding.

It is important to make clear that non-compliance with the emission obligation can be precisely measured and demonstrated in a court without any legal ambiguity via use of the registry (when employed as outlined earlier in this submission). This is inconsistent with the proposal to provide the regulator with a graduated compliance framework for enforcement that provides them with considerable discretion and scope for lenience.

This is not like other issues the AER may deal with. It is very different to a situation where it is trying to define whether bidding behaviour was or was not in good faith, or whether a network's costs are efficient. These issues may be subject to interpretation and court action could be expensive and the result uncertain.

By contrast, a retailer's load is measured by metering equipment that has been assigned to their customers. Its ownership of MWh is defined by what is in the retailer's account in the registry, and the emissions of that MWh have been measured according to the methods under NGERs, which has its own enforcement regime involving severe penalties for inaccurate reporting.

Proposing an ambiguous and discretionary enforcement regime in circumstances where it is unwarranted creates a series of problems. These issues could undermine the effectiveness of the NEG to resolve the problems raised by the Finkel Review:

- When combined with a weak emission reduction target and the potential for very lenient deferral of liabilities, it will leave market participants, investors and stakeholders sceptical about whether the government is genuinely serious about enforcing the emission obligation and tightening it over time consistent with its international commitments.
- This will then flow through to tempting retailers to actively consider non-compliance.
- It will leave investors reluctant to invest in new power generation capacity.
- Those participating in the buying and selling of megawatt-hours will be in a position where they have to second-guess the behaviour of the regulator and this will introduce significant uncertainty as to how the scheme might ultimately unfold.
- Lead some stakeholders to question NEG's environmental integrity and effectiveness with the result that they will push for additional, possibly overlapping emission reduction measures or even the wholesale replacement of the NEG with a different policy altogether.

This can be avoided by removing the ambiguity about how the emissions obligation will be enforced.

This could be done by setting a precise date for compliance where retailers must provide evidence to the regulator that they possess a blend of MWhs that matches their annual load while also complying with the emissions intensity target (with this being defined by what they hold in the registry and the uncontracted pool if this falls short of their load). If they fail to achieve this they will be fined. This fine will be applied on the basis of each tonne of CO₂ their blend of electricity exceeds their customer load multiplied by the emissions intensity target. The fine would be set at a level where it is far cheaper for the retailer or other liable entity to comply.

An alternative model to the use of financial penalties would be for the regulator to manage non-compliance via a make-good cost recovery system. In advance of scheme commencement, the regulator could be empowered to contract for a compliance buffer or reserve of low-emission

megawatt-hours. In the event that a retailer falls short of their obligation the regulator could use this buffer to make good on the retailer's exceedance of the emission obligation. The regulator would then act to recover from the non-complying retailer the costs incurred in procuring these MWh plus an administrative fee to cover the regulator's administration costs and cost of funds and to provide a deterrence against ongoing non-compliance. This buffer could assist with supporting market liquidity, while also ensuring the scheme provides an effective and unambiguous mechanism for countering non-compliance, such that emission reduction goals were met. It would allow the regulator to avoid the need to use onerous penalties or the need to resort to extreme and potentially disruptive measures like suspending or revoking a retailer's authorisation.

It may also be useful to augment this power by the AER to recover make-good costs with the ability to also impose increased prudential requirements or restrictions on accepting new customers while make-good costs remain outstanding as suggested in the consultation paper.

4.2.2 Form of the emissions target under the NEG

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

The Clean Energy Council is comfortable with either option of setting the emissions obligation in emission intensity terms or absolute emissions. The key issue will be that the method for how the absolute emissions reduction target is converted into an emissions intensity target is transparent and open to stakeholder input and scrutiny.

As an aside, while we have no issue with basing the NEG on an emissions intensity target, the contention in the consultation paper that an emissions intensity target provides some inherent clear advantages in coping with forecasting errors and would provide some kind of more "stable" transition is questionable.

Unforeseen large reductions in electricity demand under an emissions intensity target would provoke the same predictable and erroneous complaints that were also levelled against the fixed 41,00 GWh RET target. The suggestion that somehow the LRET target had to be reduced because electricity demand declined seems to completely ignore quantitative analysis from several highly credentialed analysts of what is required to deliver on the government's international commitment and also ensure enough new generation capacity to replace ageing coal fired generation.

It also ignores the lived reality that the Australian industry has demonstrated a remarkable capability to scale-up the construction of renewable energy capacity in a very short period of time.

4.2.3 and 4.2.4 How the emissions target is set and adjusted over time

- **Section 4.2.3 Whether, and in what circumstances, electricity emission targets already set should be adjusted.**
- **The process for making any such adjustments to electricity emissions targets.**
- **4.2.4 Stakeholder views are sought on the proposed timing for updating the electricity emissions targets, including a five-year notice period.**

The proposal to set the emission targets in blocks that would provide no more than 10 years of annual legislated targets – which would potentially decline to as low as five years – is concerning, given the investment lives of new power stations are 20 years or more. Such a short trajectory of legislated targets creates considerable uncertainty about the future commercial implications of the emissions obligation for new power project investments. This will make finance for new power projects difficult to obtain and push up the cost of capital considerably compared to longer-term legislated targets.

The suggestion in the consultation paper that this short window of targets should be fine because it is superior to what is provided under the RET is incorrect. The RET in 2018 provides 13 years of legislated targets (including the 2018 calendar year). While there may be only two years of further increases in the size of the target, the investment decision hinges not solely on the years that the target increases, but rather the full period of LGC revenue to 2030. To provide something equivalent, the NEG needs to provide legislated targets for much longer periods, with flexibility to review and increase these targets periodically.

We appreciate that government needs a degree of flexibility to adjust emission targets over time in light of new information and international developments. Consequently, locking in a legislated set of annual emission targets that are guaranteed not to change for 20 or 30 years is not realistic. However, there are several options for how the government could provide longer-term guidance around emission targets while still retaining flexibility to adjust them over time.

One option that could improve investor confidence would be for government to legislate a default, minimum emission reduction trajectory to 2050. Such an emission trajectory would represent a level that the parliament would be very confident would not need to be scaled back given a wide range of conceivable changes that might occur in the future. Such a target would probably fall short of the optimum of limiting warming well below 2 degrees, but it would also be clearly described as a target that will almost certainly be upgraded over time. Such a long-term, bottom-end trajectory enshrined in legislation would provide a type of worst-case orientation point for financiers that would assist in evaluating power plant investments. In addition, it would prevent the NEG emission obligation from completely collapsing in the event of a parliamentary impasse that prevented the government of the day from legislating the five-year revisions of the trajectory that are proposed in the consultation paper.

The clean energy sector strongly believes that any legislated target should not be reduced at any time. The consequences of a reduction in the NEG abatement target at any point in time would be very problematic, creating a substantial sovereign risk for investors and seriously undermining long-term confidence in the policy.

4.4 Allowing carbon credits will extinguish the investment signal for new generation:

Questions addressed:

- 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 for 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?

Any reliance on carbon permits to meet Australia's emissions targets under the NEG will mean Australia does not adequately invest in domestic technologies, innovations and projects to transition Australia to a low carbon economy.

If the NEG is to positively contribute to the trilemma of affordability, reliability and sustainability of the energy system, it must enhance investment confidence in the sector. The inclusion of Australian or international carbon credits in the NEG would dilute this investment signal and confidence, resulting in reduced investment that would ultimately detract from the reliability of the system and lead to higher power prices because of the reduced supply of generation.

Given the modest nature of the emission reduction target the government proposes for the NEG, even a relatively modest allowance for offsets would largely remove any need for new plant to deliver the emission target.

Furthermore, there is no certainty over the extent to which other countries that are party to the Paris Agreement will recognise overseas carbon credits as a legitimate means of meeting our obligations. European countries, as well as South Korea and a range of US states that have emission reduction obligations in place, either don't recognise or very tightly constrain the use of international credits. The availability of such credits therefore does little to improve the attractiveness of investments in new fossil fuel capacity because it is impossible to be confident that cheap international credits can be banked for the life of the investment.

For these reasons the NEG would be best designed with focus solely on retailers contracting for MWh with steadily reducing emissions rather than carbon offsets.

RESPONSE TO CHAPTER 5: RELIABILITY REQUIREMENT

The reliability obligation risks adding substantial complexity to the current NEM and therefore has inherent risk. This is both in terms of the likely effectiveness of the reliability obligation, but even more importantly, risks fundamentally changing the NEM and interactions between market participants. Such change is likely to be accompanied by substantial unintended negative consequences even with the most carefully crafted design.

The CEC urges the ESB to undertake extensive consultation and scenario planning to fully consider and anticipate how the reliability obligation could work – and its potential consequences.

It is important to note that the Reliability Panel's own recent analysis indicates that the existing market frameworks are likely to be sufficient to ensure the reliability standard is not breached out to the end of their outlook timeframe (2023/24). In addition, AEMO's Electricity Statement of Opportunities also concludes there is sufficient capacity (even with the closure of Liddell) to ensure all regions do not breach the reliability standard out to the end of their outlook timeframe (2026/27).

The energy-only NEM market structure already automatically imposes very hefty financial costs on a retailer in an event they have failed to hedge their load and supply is close to falling short of demand – more than \$14,000 per MWh. The ESB hasn't provided detailed evidence for why it believes this very high price cap is failing to provide adequate incentive for retailers to contract and that further penalties are required to avoid reliability falling short of the reliability standard. This is an absolutely fundamental issue which the ESB must address before proceeding further with the development of the reliability obligation.

Interaction with existing market reform

While the NEG may have the potential to enhance energy reliability, it will not be the panacea to delivering a robust and modern energy system. The CEC supported the recommendations of the Finkel Review and believes that these crucial reforms should continue to accelerate in parallel with the consideration and design of the NEG.

The CEC agrees with the ESB on the need to implement new approaches to managing system security as the generation mix changes from centralised fossil fuels to decentralised renewable energy. Renewable energy technologies have to be integrated in a way that continues to deliver the responses needed to support a secure electricity system as conventional generation plant is replaced. A technology-neutral approach is preferred to achieve this, requiring the correct definition of the essential services that the system needs.

The AEMC's System Security Market Frameworks Review (SSMFR) is already progressing many of these recommendations, and the CEC is involved in this process.

Consequently the CEC:

- Supports the requirement for TNSPs to be responsible for securing minimum inertia levels, and that AEMO consider and provide advice on the extent to which Fast Frequency Response (FFR) can supplement physical inertia. Conditions of this support were outlined in our submission to the AEMC's SSMFR.
- Supports the requirement for FFR capability for new renewable generators.
- Supports a review of the National Electricity Rules' connection standards, in line with the changes underway in South Australia (via the Essential Services Commission of South Australia (ESCOSA)) and the SSMFR.
- Supports the disclosure of information by generators, but argues that AEMO must be specific about what information it requires.
- Supports ongoing review of the technical standards, noting that the technical standards have not had a comprehensive review since 2007 and there is dramatic technological change underway.

We would caution the ESB and governments that there is a danger that the reliability obligation simply doubles-up on these other reforms underway. The institution of rule changes such as the notice period for plant closure, the requirement for TNSPs to procure minimum levels of inertia and also maintain system strength, and potential further reforms such as a market in fast frequency response, the institution of a strategic reserve and market in demand response are likely to largely resolve any meaningful risks of supply outages as we transition towards low-carbon sources of energy. Given these major reforms, the reliability obligation may provide limited further improvement in the NEM's ability to avoid outages, while adding considerable additional complexity and costs.

The perils of forecasting and the introduction of a central planning mechanism for ensuring sufficient generating capacity

The literature cataloguing the inaccuracy of economic forecasting in relation to the energy sector is extensive. Vaclav Smil in his book on the modern history and future prospects of energy – *Energy at the Crossroads* – dedicated an entire chapter (Against Forecasting) to how poor both public and private sector experts have been at predicting the future in the energy sector over many decades, particularly in relation to over-estimating energy demand.

Closer to home, this was evident recently and painfully in the failure of the NEM regulatory authorities to foresee a downturn in electricity peak demand growth over 2007 to 2013. This forecasting failure, in conjunction with an excessive emphasis on reliability without regard to its costs, led to billions in expenditure on network capacity and was the primary cause of the doubling in residential electricity prices over this period.

This is not intended as a specific criticism of AEMO or any other government authority, but rather an attempt to highlight that even some of the most highly credentialed experts have difficulty anticipating how energy markets will evolve over even quite short timeframes.

The NEM was designed at its inception as an energy-only market in part because of a recognition of the challenges to predict the future. State government electricity authorities generally over-estimated electricity demand growth in the 1980s and built more coal-fired power

stations than were required. Under an energy-only market, if investors over-build then it is they who suffer the consequences, not energy consumers. At the same time, with the very high maximum price cap in the NEM, there are strong incentives provided for generators to make capacity available when demand is high.

The ESB should tread very carefully in establishing a reliability requirement which will rely heavily on the ability for an authority to accurately predict the future, considering the consequences borne by electricity consumers.

5.3 The process for forecasting

Questions examined:

- What are stakeholder views on the length of the forecasting period?
- Should the existing ESoO and MTPASA forecasting processes be adapted for determining the gap, or should a separate bespoke process be developed?
- What elements of the current MTPASA and ESoO processes should be reviewed in light of the potential for the process to lead to a compliance obligation? E.g. how should AEMO treat inputs from generators such as their forced outage rate or summer capacity if these assumptions could lead to a triggering of an obligation?
- Should AEMO be able to determine assumptions independently or should responsibility for the accuracy of assumptions be placed on the market participant?
- How should the forecasting methodology and assumptions be consulted on?

The first challenge facing the ESB is who should be responsible for forecasting whether there may be a reliability gap that requires additional measures beyond the incentives already provided by the existing energy market. The reality is that AEMO has very strong incentives to be conservative. AEMO is not a commercial organisation that has to bear the costs and consequences of investing in capacity. Ensuring too much capacity may lead to extra costs for consumers but these can be hard to quantify and are dispersed across such a large number of consumers (and mixed in with other factors driving prices) that the consequences are not readily identified. On the other hand, AEMO management will face intense and severe scrutiny and criticism in the event of outages.

Of course, providing the opportunity for external stakeholders to scrutinise and provide input on modelling assumptions should assist. Yet given the multitude of market participants, it seems difficult to see how they could be held responsible and arrive at a single decision on each modelling assumption or parameter. So AEMO will still sit in a position as ultimate arbiter and likely be led to err towards too much capacity than ideal.

We would also note that there is a problem inherent in the process that many people with valuable insights and information of relevance to the forecasting may not have strong incentives to provide it. In fact their incentives may often be to keep this information to themselves.

If AEMO is determined to be the organisation responsible for making the forecasts, or at least managing the process, they will need to proactively seek out input from those for whom the electricity market is not their primary commercial focus – not just wait for feedback.

As pointed out above, energy forecasts even just a few years into the future are notoriously unreliable. This doesn't mean they aren't necessarily useful for informing decision making, but they really shouldn't act to dictate decisions. The 10-year horizon of the AEMO's Electricity Statement of Opportunities provides useful insights, particularly when there are government policies that influence the sector which unfold gradually but significantly. However, caution should be taken in regards to such a model dictating contracting decisions by retailers.

MTPASA is too crude given it currently fails to take a probabilistic approach. While this will change, until the new approach has been implemented it is not sensible to make firm conclusions about its suitability for use in the reliability obligation.

5.4 How frequently should the forecast be updated?

The forecast would need to be updated at least yearly, while events with large consequences for the supply-demand balance may warrant an update prior to any annual process. However, if the forecaster moves too quickly, they miss the potential for the market to self-correct in response to the change. As an illustration, a major coal-fired power station closure would appear to warrant an urgent update. But this event may lead to a rise in power prices which could precipitate a large industrial facility to possibly commission its own power project development or to close. Such a market response will always be characterised by delays, in many cases involving several months, but still rapidly enough to ensure outages are avoided and reliability maintained.

Section 5.5 - Functioning of the trigger

Determining the timing for the trigger presents its own trade-offs and potential pitfalls. It's worth highlighting that given how quickly the electricity market is changing it is hard to foresee just how fast the market can respond to supply shortfalls.

We can see with the example of the Hornsdale Power Reserve in South Australia that new capacity can potentially be brought on very quickly now. Yet it's not clear at all, that if there ever is a need to trigger the reliability obligation (and the latest ESoO indicates no reliability gap out to as far as 2027), that at the time this happens batteries will be the most cost-effective option. Slower-build options may make better sense, but if the trigger is set too far in advance of when the gap is anticipated to occur, it could act to undermine market participants from making their own decisions about how best to respond to the opportunity presented by a potential supply gap. Given the large potential for central planning bodies to make forecasting mistakes one needs to be very careful forcing participants to procure extra capacity too far in advance of when a shortfall is anticipated.

Given these uncertainties it is suggested that in fact the best way to ensure the market responds on a timely basis is to put in place an emission reduction target that is consistent with the long-term Paris Climate Agreement commitments. This will provide much improved clarity and confidence about the likely timetable over which existing capacity will need to be replaced. With this clarity and confidence private sector participants will devise what are likely to be a complex mixture of technologies with different construction timetables to cover both the energy and capacity gaps that they expect to unfold over time. These could involve batteries or new gas peakers, but may also involve a blend of solar and wind to provide bulk cheap energy at low

cost, new transmission lines that take advantage of diversity in weather and load patterns to reduce the need for dispatchable capacity, and even increased amounts of energy efficiency that act to reduce both peak demand, emissions and overall energy requirements. Such a wide blend of potentially viable options favours delegation of decisions to market actors that are close to customers and technology rather than a central planner.

Another challenge associated with the reliability trigger revolves around how long it is guaranteed to remain in force. In an ideal world it would be expected that the reliability requirement would never actually be triggered because the private sector would foresee a supply gap themselves and act to fill it. However, if we do end up in a situation where the reliability requirement is triggered and the forecast underpinning it is an accurate assessment, then something else is presumably going wrong that is inhibiting private sector investment. Therefore, the reliability mechanism is covering for some kind of gap or flaw in the market. Yet if the reliability obligation is only to bind for a short duration of time then the supply response may only be focused on options that can recover capital costs very quickly.

This serves to illustrate that a reliability obligation is not something that can just be easily turned on and off. The CEC would hope that broader reforms and market design avoid having to resort to such a measure in the first place.

5.6 and 5.7 - What qualifies under the reliability obligation and how retailers are assessed

It is a concern that a rather simplistic assessment of how the electricity system currently works has been used to underpin the genesis of the reliability obligation. It appears to ignore the fact that no individual element within an electricity system is completely reliable and it is only by combining multiple elements that the whole system achieves a low probability of outages.

How a power station contributes towards reliability is not a simple binary assessment of whether it is or isn't dispatchable. To illustrate this, the NEG will need to make careful assessments of the reliability characteristics of a range of projects such as:

- A coal-fired power station that is very old, very poorly maintained, has a very thin stockpile of coal, a track record of consistently breaking down in high temperatures, and which relies on a transmission line that suffers from congestion and is vulnerable to bushfire or heat stress **Versus**
- A gas power plant located near major demand loads, where unplanned outages are extremely rare, the plant is well maintained and it has access to its own gas storage facility **Versus**
- A brand new battery facility which has minimal ramping limitations, has no moving parts and so is less prone to mechanical failure, which can use electricity from multiple fuel sources and so is immune to problems such as gas processing plant outages (Longford and Varanus Island gas processing plants have both suffered extended outages), and can be located adjacent to large loads, thereby minimising risks of transmission line failures.

Clearly these three plants are not equivalent. Yet in the way the reliability obligation has been described publicly, these are all dispatchable and therefore contribute towards reliability.

When a generator decides whether to offer an electricity market hedging contract they need to take into account a wide range of factors that affect their likelihood of generating when supply is

short, beyond just whether their capacity is or isn't dispatchable. Also if they enter into such a contract and then their plant fails to perform, they can face very harsh financial consequences. This would suggest such contracts might be a better way of evaluating and ensuring reliability than just adding up all the plant capacity deemed to be dispatchable.

However, it's not clear at this stage how the regulator would use such contracts to assess whether a retailer had effectively "done its bit" to avoid a supply gap that might be identified by the central planner. Generators will generally avoid contracting their full capacity because they need to cover themselves for a generating unit failure, and they also may want to have some degree of exposure to the possible occurrence of high spot prices. But this may mean their willingness to offer capacity falls short of what their plants are likely to provide at peak times when assessed on a probabilistic basis. The NEG will need to be designed to carefully consider this issue.

5.8, 5.9 and 5.10 Compliance, penalties and last-resort procurement

The possibility of operating the reliability obligation on an ex-post assessment clearly has some virtues in allowing retailers to come to their own judgements about what they think their peak load will be, rather than solely relying on the forecasts of the central planner.

The energy-only market structure already automatically imposes very hefty financial costs on a retailer in an event they have failed to hedge their load and supply is close to falling short of demand – more than \$14,000 per MWh. The ESB hasn't provided detailed evidence for why it believes this very high price cap is failing to provide adequate incentive for retailers to contract and that further penalties are required to avoid reliability falling short of the reliability standard. This is a fundamental issue which the ESB must address before proceeding further with the development of the obligation. We would note that the latest ESoO does not foresee that any region is at risk of having insufficient generation to meet the reliability standard out to as far as 2027. The Reliability Panel analysis also indicates that the existing market frameworks are likely to be sufficient to ensure the reliability standard is not breached out to the end of their outlook timeframe (2023/24). So there is time available to thoroughly evaluate the cost and benefits of adding this new regulatory intervention.

RESPONSE TO CHAPTER 6: GOVERNANCE OF THE GUARANTEE

The over-arching structure and governance structure will be critical in the success of the NEG. The proposal outlined in the consultation paper appears workable. We do however question whether the AER is best equipped to manage the emission obligation. The Clean Energy Regulator, with its extensive experience in managing the necessary compliance systems including NGERS and the registries, appears to be far better qualified. Also, integrating the responsibilities all in one agency rather than splitting the responsibility across the AER and the Clean Energy Regulator provides a clearer line of responsibility and accountability that will be less prone to passing the buck.

Ideally the emission obligation should encompass all electricity generation across Australia, not just the NEM. Federal legislation that applied an obligation on all retailers and major electricity customers would be preferable to a scheme restricted by the fact it was reliant on NEM institutions that have no jurisdiction in NT and WA.