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The Board Members
Energy Security Board

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Dear Board Members

NATIONAL ENERGY GUARANTEE – SUBMISSION FOR DRAFT DESIGN CONSULTATION

1. Introduction

Genex Power Limited (“Genex” or the “Company”) is pleased to provide this submission (the “Submission”) in response to the draft design consultation paper published by the Energy Security Board (ESB) on 15 February 2018 relating to the National Energy Guarantee (NEG) (the “Paper”). Genex welcomes the consultative approach adopted by the ESB and the opportunity to submit feedback on the draft design considerations for the NEG.

In making this submission, Genex is not seeking to respond directly to each of the design questions raised in the Paper. Rather, we are seeking to provide our position on what we see as the key design parameters of the NEG, and to discuss an alternative conceptual design framework which we consider will achieve the objectives of the NEG while minimising cost, complexity, and the impact on current efficient market practices.

2. Overview of Genex

Genex is a power generation development company listed on the Australian Securities Exchange (ASX Code: GNX), with a market capitalisation of approximately \$100 million. Genex is focused on innovative clean energy generation and electricity storage solutions with the objective to deliver commercial returns for shareholders. The Company’s current projects are based at the Kidston Renewable Energy Hub near the township of Kidston in Northern Queensland (the “Kidston Project”), which is centred on the rehabilitation of a former mine site.

Stage 1 of the Kidston Project comprises a 50MW solar PV project, with first generation achieved in December 2017. Stage 2 of the Kidston Project comprises a 250MW hydro pumped storage project, utilising two existing abandoned mine pits, and a solar PV project of up to 270MW. The Company is currently progressing the Stage 2 development to financial close in 2018, with targeted first generation in 2020. The Kidston Renewable Energy Hub has been designated as “Critical Infrastructure” by the Queensland State Government, and also benefits from the support of the Australian Renewable Energy Agency and the Clean Energy Finance Corporation.

3. Objectives of the NEG – Key design parameters

In our view, in achieving its three stated objectives of reducing emissions, improving reliability and maintaining wholesale price affordability in the National Electricity Market (NEM), the design of the NEG needs to ensure it is undertaken within a framework of three key parameters:

- **Encourage investment in capacity:** the design of the NEG needs to incentivise market participants to invest in new capacity, both firm dispatchable capacity to improve reliability,

and low emissions generation to achieve Australia's emissions reduction targets for the electricity sector;

- **Minimising the impact on current efficient market practices:** as an energy only market, the NEM has been highly successful in producing efficient market based outcomes – in our view, the design of the NEG needs to ensure that any negative impact on these existing market practices is minimised; and
- **Limiting complexity:** the concept of the NEG and some of the design parameters being discussed in the Paper raise the potential for the introduction of significant complexity into the operation of the NEM, which has a high probability of leading to increased costs for consumers. Genex is of the view that the design of the NEG should focus on simplicity and utilising existing frameworks and regulatory and administrative bodies as much as possible, so as to minimise complexity and maintain affordability.

4. Issues with existing design concepts

In responding to the Paper, Genex has considered the draft design concepts identified in the context of the key design parameters noted above. In this regard, we wish to make several observations to the ESB.

Chapter 3.3: Contracting and emissions

Genex considers the concept currently being considered by the ESB, being the creation of contracts which stipulate the sources of generation or emissions per MWh, creates inherent and unnecessary complexity in the contract market.

At present, the exchange traded and OTC markets for energy are homogenous and do not typically specify the sources of generation or emissions per MWh, with the exception being long term PPA style arrangements (which are rarely traded and do not contribute to overall liquidity). In Genex's view, the introduction of such a requirement would require the 'untangling' of existing contracting practices in the NEM, which as a result would introduce significant complexity for retailers, generators and intermediaries. Through the separation of existing contracts into markets linked to the source of generation, the pool of available contracted capacity would diminish which in our view, would have a negative impact on liquidity, impacting on affordability for consumers. In addition, we consider that this approach creates a significant administrative burden on regulators, which introduces additional risk.

Chapter 3.4: Flexible compliance options

Genex is supportive of allowing retailers to manage compliance with the emissions requirement from period to period, through borrowing or lending emissions 'credits' between periods. In Genex's view, this would allow greater flexibility for retailers and ultimately assist in reducing costs for consumers. However, Genex proposes that the ability to borrow or lend should be limited to one period, so that retailer obligations are acquitted within a reasonable timeframe which ensures that the overall emissions and reliability objectives are met.

Genex also has concerns over the potential for the NEG to allow carbon offsets to be used by retailers to meet the emissions requirement. Our view is that the NEG, in meeting not only its emissions objectives but also its affordability objectives, needs to promote investment in new zero emissions generation. The ability of retailers to offset their emissions liabilities through the acquisition of carbon offset credits, both within Australia and overseas, acts as a direct disincentive for investment in new zero emissions generation.

Chapter 3.6: Reporting and compliance

Genex appreciates the complexity associated with the concept of the market developing new contracts (which state the source of generation or emissions intensity per MWh), which we have noted above. We recognise that this would create a significant administrative and compliance burden on regulators, and also may result in the 'double counting' of some zero emissions MWh. As a result, Genex is supportive of a central registry, operated by the Clean Energy Regulator (CER) or other body, to maintain and record the transfer of zero and low emissions MWh in the NEM.

Chapter 5: Reliability requirement

Genex is aware of the importance of ensuring the reliability of the NEM is maintained alongside the increasing penetration of intermittent zero emissions generation. Genex has considered the approach proposed by the ESB in order to meet the reliability requirement, and is of the view that the concept design provides a distinct disincentive for the development of new dispatchable capacity. Genex has formed this view based upon the following observations on the proposed design mechanism:

- **Triggering the reliability gap:** in order to facilitate investment in new dispatchable capacity, market participants typically need to secure long term offtake contracts or rely on long term pricing signals through visible market pricing. Genex does not view the proposed forecasting, updating and triggering processes proposed by the ESB as providing the necessary pricing signals for project proponents. As such we do not view the current concept design as providing the appropriate incentives for new investment in dispatchable capacity.
- **Timelines for triggering the reliability gap:** as a developer of a new energy storage project, Genex appreciates the time and complexity associated with the development of new dispatchable capacity. As such, we are of the view that the periods between forecasting the 'reliability gap', triggering the requirement and acting as procurer of last resort, need to be sufficiently long in order to enable the planning, design, approval and financing of such new capacity. Genex is unsure whether these processes could be accommodated in sufficient time in response to the proposed signal of 'triggering the reliability gap' as proposed in the current concept design.
- **Qualifying instruments:** similar to our position on the emissions requirement, if the NEG were to separate existing contracts based on the type and dispatchability of generation, this would have a negative impact on liquidity currently driven by homogenous energy instruments in our view. Again we believe this would have an adverse impact on energy affordability.
- **Introduction of significant complexity:** Genex is of the view that the current concept design adds significant complexity for market participants. The management of existing contracts, the 'trigger' requirement and forecasting processes, along with the compliance and enforcement regime, are at this stage unclear and appear to introduce significant risk.

In light of these observations, we set out below a summary of an alternative concept design for consideration by the ESB as part of the consultation process.

5. Alternative concept design

In considering the above, Genex wishes to propose an alternative concept to the ESB that seeks to achieve the objectives of the NEG, while minimising complexity and disruption to existing efficient market practices, and providing the appropriate incentives (through market pricing signals) for the development of new, low emissions and dispatchable capacity.

Overview of concept design

The success of the NEM to date is premised upon the mix of different generation technologies which each have different emissions and reliability characteristics. Genex is of the view that the NEG could harness this by incentivising those attributes of generation through the creation of a separate market price for emissions and for reliability.

Genex's alternative concept design focuses on utilising existing market practices and contracts. This foresees that an existing contract for a MWh (including a spot sale contract of merchant electricity in the NEM) would also create an 'emissions credit' and/or a 'reliability credit' (depending on the type of generation), which could then be separately traded with retailers and other market participants. The NEG would then impose obligations on retailers to procure sufficient levels of emissions and reliability credits to meet their emissions and reliability requirements, with the market price providing investment signals for investments in new zero emissions or dispatchable capacity. An illustrative comparison of how different types of generation could be treated under such a design is depicted below:

Type of contract	Existing black energy contract (per MWh)	New NEG credits created alongside existing contracts	
		Emissions credit (per MWh)	Reliability credit (per MWh)
Coal	X		X
Gas	X		X
Wind	X	X	
Solar	X	X	
Hydro – run of river	X	X	X
Hydro – pumped storage	X		X
Battery	X		X
Demand response			X

We set out below some further detail on this concept design for consideration by the ESB.

Emissions credits

Genex considers that emissions credits would apply to zero emissions generators in a similar manner to the current Renewable Energy Target (RET). Given the existing infrastructure already in



place as a result of the RET, Genex considers that the use of this infrastructure should be maximised in order to reduce complexity and the administrative burden associated with the introduction of an emissions requirement.

As a result, Genex proposes under such a design that the CER could be designated as the entity to oversee the registration of generators as eligible to receive emissions credits. The CER could also ensure compliance associated with the emissions requirement on a similar basis to the current RET process. This would involve a generator creating an emissions credit upon generating a MWh of zero emissions energy, which would be recorded in a central register. The emissions credit could then be transferred by the generator to other market participants (and ultimately, as is likely the case, to a retailer) in accordance with contractual arrangements in place between those parties, with such transfer to be recorded by the CER in the central register for compliance purposes.

This would be relatively simple to establish given the use of existing infrastructure, and the use of a register linked to the creation of each credit, would ensure the potential for 'double counting' of emissions credits is minimised, in contrast to the current draft NEG design concept.

Reliability credits

Genex considers that the reliability requirement could apply in a similar manner to the emissions requirement, through the creation of 'reliability credits' attaching to MWh of energy generation and demand response. Although reliability is a function of capacity to generate rather than energy generation itself, we believe the price signal arising from a reliability credit attached to MWh would be sufficient to encourage investment in suitable capacity; would be simpler to administer in line with existing credit systems per MWh generation (i.e. the RET); and would avoid the trap over investment in generating capacity which has been demonstrated in other markets such as the Wholesale Energy Market.

In considering this, Genex is also keen to emphasise to the ESB that different technologies have different characteristics when it comes to measuring reliability, and ultimately the reliability requirement should be designed to incentivise those forms of generation that provide maximum benefits to the reliability of the NEM over other lesser forms of generation.

As a minimum, Genex considers that the reliability requirement should only apply for scheduled generators (ie. to the exclusion of intermittent generators). Secondly, the number of reliability credits per MWh available to a generator/retailer should be determined by the Australian Energy Market Operator (AEMO) as part of the AEMO registration process, on the basis of a combination of:

- Dispatchability of generation;
- Generation ramp rates (up and down); and
- Synchronous capability.

For example, a generator or contract exhibiting all three attributes, could be eligible for three reliability credits, whilst a generator or contract exhibiting fewer characteristics could be eligible for fewer reliability credits per MWh of generation.

On a similar basis to our proposed approach to the emissions requirement, we suggest that a separate register is maintained (likely by the Australian Energy Regulator) for the creation and registration of each reliability credit in accordance with each MWh of generation/capacity. These could then be transferred among market participants in accordance with contractual arrangements in place between those parties, with such transfers to be recorded in the central register for compliance purposes.

While this proposed reliability mechanism does create an additional administrative burden, we consider that this is relatively limited given it follows current practices under the RET which are well understood by market participants. Genex also considers that the structure and trading of reliability credits is simple in concept and minimises the complexity associated with the imposition of the reliability requirement.

Setting and allocating emissions and reliability requirements for retailers

Genex largely agrees with the approach proposed by the ESB to determine the emissions and reliability requirements for retailers, being at the national and regional levels respectively. Genex believes that the establishment of these requirements at the retailer level will act to drive the market pricing of emissions and reliability credits between generators, retailers and other market participants, which will in turn provide the requisite pricing signals to incentivise the appropriate levels of investment in new generation capacity.

Benefits against current draft design concepts

Genex believes the above approach provides a number of benefits in comparison to the draft design concepts discussed in the Paper, as follows:

- ***Incentivises investment in new capacity:*** through the provision of tradeable credits attaching to black energy generation and demand response, the NEG would provide direct, observable price incentives for investment in new generation. Such prices would also provide an improved environment for project proponents to secure debt financing, and in our view, would also further encourage retailers to enter into energy and credit offtake contracts.
- ***Reduces complexity:*** the concept design utilises existing market practices under the RET, which are well known among market participants. It also utilises existing regulatory bodies, which helps minimise complexity and disruption associated with the imposition of the NEG, and reduces the administrative burden on regulators. Importantly, the use of a central compliance register for emissions and reliability credits helps minimise the risk of 'double counting' which could arise under the 'contract approach' discussed in the Paper.
- ***Fits alongside existing market practices:*** by introducing new instruments to be traded rather than amending existing contracts, the concept design reduces the impact of the NEG on current efficient market practices. Importantly, Genex is of the view that this approach would minimise the impact of the NEG on existing market liquidity in comparison with the proposed approach discussed in the Paper, thereby helping to improve affordability for consumers.
- ***Enables market efficient outcomes:*** the proposed imposition of tradeable emissions and reliability credits enables the market pricing of two of the NEG objectives, driven by demand from retailers to satisfy requirements under the NEG. The creation of a market driven mechanism should help to maximise the efficiency of the design of the NEG, which should act to improve affordability for consumers.

We consider the above to be in line with the objectives of the NEG and within what we consider to be key design parameters for the ultimate policy mechanism. We therefore urge the ESB to consider this concept design as part of the policy consultation process.



6. Conclusion

We look forward to the consideration by the ESB of this submission and of our proposed concept design, and to the next stage of the consultation process for the NEG.

Yours faithfully

A handwritten signature in black ink, appearing to be "MA", with a small dot to the right of the signature.

Michael Addison
Managing Director