

8 March 2018

To the Energy Security Board

Submission on design of the National Energy Guarantee

Goldwind Australia (Goldwind) welcomes the opportunity to comment on The Energy Security Board's (ESB) Draft Design Consultation Paper on the National Energy Guarantee (the Draft Paper).

Goldwind supports the objectives of the National Energy Guarantee (NEG). However, Goldwind has concerns with some aspects of the design, and has policy suggestions to address those concerns.

The following commentary aims to make a constructive contribution to scheme design to address a number of potential design issues and unintended consequences.

Our submission is set out in the following structure:

1. Introduction
2. Overview of Goldwind Australia
3. NEG Objectives
4. Issues identified in Proposed Scheme Design
5. Policy suggestions to address the issues

If you would like to further discuss any of the issues raised in this submission please contact Steven Nethery, Technical Services Manager, (02) 9008 1702 or stevennethery@goldwindaustralia.com.

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1 Introduction

Goldwind supports the objectives of the National Energy Guarantee (NEG). However, Goldwind has concerns with some aspects of the design, and has policy suggestions to address those concerns.

The following commentary aims to make a constructive contribution to scheme design to address a number of potential design issues and unintended consequences.

At the highest level, successfully addressing the energy trilemma would result in:

- Reliable Power Supply
- Competitive Pricing of Energy and Capacity
- Sustained growth in low emissions generation to achieve the emissions trajectory.

To achieve these outcomes, the NEG must be both effective (provide a high level of confidence that the trilemma will be achieved) and efficient (least cost). Essential design outcomes in this respect are:

- Liquid and transparent markets
- Pricing signals set by competitive forces
- Administrative simplicity
- An emissions trajectory that leverages industry capacity to deliver low cost abatement.

2 About Goldwind Australia

Xinjiang Goldwind Science & Technology Ltd is an international, multi-faceted wind power company based out of Beijing, China. Since the company was founded in 1998, Goldwind has now expanded across six continents, driving our renewable future globally.

As of 2018, Goldwind is the world's third largest manufacturer of wind turbines (based on 2017 installations). With strong, international R&D capabilities, Goldwind is also the world's largest manufacturer of Permanent Magnet Direct Drive wind turbines.

GOLDWIND AUSTRALIA

Goldwind Australia, a wholly owned subsidiary of Xinjiang Goldwind Science & Technology Ltd., was established in 2009 to serve the Australian and the regional wind power markets. Goldwind's expertise offers permanent magnet direct drive turbine sales, wind farm investment with financial solutions, project management and operations and maintenance services.

Goldwind Australia has offices in Sydney and Melbourne with more than 130 employees. Our experienced team has local and global knowledge including expertise in the Australian wind industry in sales, investment, development, technical, commercial, construction and operations.

Projects that Goldwind has delivered and plan to deliver in the immediate term are listed below:

Operating

Morton's Lane	20 MW wind farm	VIC
Gullen Range	165.5 MW wind farm	NSW
Gullen Solar	10 MW solar farm	NSW
White Rock	175 MW wind farm	NSW

Construction

White Rock Solar	20 MW solar farm	NSW
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Pre Construction

Moorabool	300+ MW wind farm	VIC
Stockyard Hill	530 MW wind farm	VIC
Cattle Hill	144 MW wind farm	TAS
Coppabella	250+ MW wind farm	NSW

Critical to underpinning future investment in the sector, at least cost, is policy certainty.

3 Objectives

Goldwind is supportive of the objectives of the NEG – in particular:

- A consultative process for determining a robust scheme design.
- Reliability Guarantee:
 - The intent to establish a reliability mechanism that is integrated with the NEM and that delivers sufficient dispatchable capacity to enable the reliability standard to be met
 - AEMO’s assessment of capacity adequacy on a regional basis.
- Emissions Guarantee:
 - A clear process for determining an emissions intensity trajectory
 - Ensuring the RET is retained to expiry, and operates in harmony with the NEG.
- An effective governance framework.

However, Goldwind is concerned that some key aspects of the scheme will compromise the achievement these outcomes. We outline these below.

4 Identified issues in Proposed Scheme Design

The NEG constitutes the most significant change to the NEM since its introduction. The cost of getting it wrong will impose a material cost on electricity consumers and the national economy. There are significant complexities associated with the draft design and its implementation. These can only be resolved through good analysis - in particular the identification and objective evaluation of alternatives, concept testing and informed stakeholder deliberation.

Below Goldwind has identified concerns with some key aspects of the scheme design

4.1 Reliability and Emissions Requirements

Liquid and transparent markets and competitively set pricing signals are critical to risk management and investment decision making.

Contracting arrangements that seek to physically track financial contracting arrangements or lead to bespoke/non standardised electricity contracts, and the aversion to financial instruments and certificates, constrains the solution to an impractical level and reduces transparency and liquidity in both the NEM and capacity/emissions markets.

The complexity of such physical contracting arrangements will also create a significant administrative burden for both market participants and the scheme regulator, with attendant costs.

Failure in these areas will lead to higher electricity prices.

4.2 Reliability Guarantee

Goldwind have concerns with the following aspects of the Reliability Guarantee:

- Placing obligations on retailers would reduce competition in the supply of dispatchable capacity, increasing capacity costs and entrenching the position of large vertically integrated generator/retailers. The extent of vertical integration in the NEM, and the draft design's administrative complexity, will place smaller retailers at a competitive disadvantage when seeking to procure dispatchable capacity to cover their retail load. This is likely to fragment the retail market and reduce retail competition in the NEM.
- The draft design aims to close the capacity 'gap' through sources of capacity that (by definition) should not already be included in calculating the gap. This means a new source of dispatchable capacity that provides contract support in Year 1 in theory should not be eligible in Year 2 as it would have been incorporated in the updated assessment of the capacity gap in Year 2. It will also preclude the participation of existing generators whose capacity would have been taken into account when calculating the capacity gap. This creates the continuous need to monitor and update eligibility boundaries for participating capacity assets. Focusing on the capacity gap is also likely to result in gaming by existing capacity.
- The draft design is based around demonstrating contract cover rather than delivering physical performance during times of system stress, which is the best measure of contribution to reliability. There is no obligation on capacity providers to deliver against their contractual commitments. Additionally, in acknowledging the possible need for AEMO to step in as 'procurer of last resort', it does not provide certainty that the required level of capacity will be delivered.
- The reliability guarantee is highly complex; it will be very difficult to implement it by 2019. Implementation of similar reforms overseas - for example U.K and France reforms amongst others, has required lead times of many years. It would be prudent to take more time to develop a robust design, and rely on the RERT and other NEM reliability processes in the meantime.

4.3 Emissions Guarantee

Goldwind have concerns with the following aspects of the Emissions Guarantee:

- The proposed emissions guarantee is an unproven mechanism – it is not clear that it will deliver the required growth in low emissions generation.
- While there is time to develop and implement the NEG, there is no headroom to make a mistake with scheme design, with an unintended consequence of an investment drought and increased electricity costs.
- Implementation in 2020 will be too late to avoid stalling sector investment as most projects have a lead time of around two years.
- The proposed emissions trajectory does not leverage industry capacity to deliver low cost abatement. The most recent government projections indicate that the 2030 target will require 868-934 Mt CO₂-e in cumulative emissions reductions between 2021 and 2030 to meet the 26% per cent and 28 per cent targets respectively.¹
- The consultation paper states that the Commonwealth Government's target for the electricity sector for 2030 under the Guarantee is a 26 per cent emissions reduction on 2005 levels. Our analysis indicates that this trajectory would only deliver abatement of approximately 18% of the national abatement task which will place a disproportionately large burden on other sectors of the economy.

¹ <http://www.environment.gov.au/climate-change/publications/emissions-projections-2017>

- The inclusion of offsets is likely to constrain investment in new low emissions generation. Offsets will crowd out new investment in the NEM and further delay the transformation, and therefore the competitiveness of the electricity sector.

5 Policy suggestions to address the issues

5.1 Reliability and Emissions Requirements

Contracting for reliability and emissions should be handled in their separate liquid and transparent markets so there is no disruption to existing contract markets.

5.2 Reliability Guarantee

A capacity auction approach as in the UK or a capacity obligation approach as in France or WA provide reference schemes for successful implementation and lessons learnt which may be transferable to the NEM.

- The UK model, based on centralised actions with up to 15 years of contract support for new entrants has stimulated competition amongst capacity providers, supports existing/new capacity – coal; gas; renewable; demand response; battery storage etc, and has led to progressively lower auction clearing prices.²
- Auction based capacity mechanisms have also been adopted in a number of U.S. markets such as the PJM and ISO NE (New England).
- The French model is relatively complex and places obligations on both retailers and capacity providers.³ Following EU concerns with lack of a long term pricing signal, an auction mechanism will also be introduced.
- The WA reserve capacity mechanism - which effectively sets the price rather than the quantity, has led to a significant oversupply in capacity. In mid 2016, the then state government proposed that it be replaced by a centralised auction mechanism.⁴

For these reasons GoldWind proposes that a competitive centralised auction approach be adopted, drawing on the experience in the U.K. and amended to reflect the NEM's market design and local market conditions. Key elements of such an approach might comprise:

- AEMO assessing the total capacity requirement in each region
- Regulatory certification of eligible capacity sources
- Annual reverse auctions offering short and long term contract support
- A secondary market to allow trading of obligations and over delivery
- Penalties for non compliance
- Cost recovery via market customers.

² See for example Capacity Market auction results, KPMG, February 2018 <https://home.kpmg.com/uk/en/home/insights/2018/02/capacity-market-auction-results-january-2018.html>

³ French Capacity Market - Report accompanying the draft rules, RTE, 2014, http://clients.rte-france.com/lang/an/clients_traders_fournisseurs/services_clients/dispositif_mecapa.jsp

⁴ Final Report: Reforms to the Reserve Capacity Mechanism, Electricity Market Review, Department of Finance, Public Utilities Office, April 2016 <http://www.treasury.wa.gov.au/Public-Utilities-Office/Industry-reform/Wholesale-Electricity-Market-Improvements/>

A centralised auction model would retain a liquid energy financial contracts market, provide a transparent and competitive way of achieving system adequacy, support existing capacity sources, provide clear forward price signals to drive the appropriate level of investment, and guarantee a least cost solution. A high level conceptual design is included in Appendix 1.

5.3 Emissions Guarantee

Goldwind propose the following policy suggestions to address the Emissions Guarantee:

- An equitable emissions trajectory would reflect the sector's proportionate contribution (~30 per cent) to the cumulative emission gap to 2030. Given that the electricity sector accounts for approximately 30% of cumulative national emissions during 2020 - 2030, and also has the capacity to deliver a relatively large quantum of abatement efficiently, the emissions trajectory could therefore be set on the basis that the electricity sector delivers a minimum of 30% of the cumulative abatement target to 2030.
- An approach based on certificates will be more efficient and transparent. This could be designed around the following elements:
 - Setting retailer emissions targets based on their total consumption in the NEM, and the emissions intensity target for the compliance year
 - Calculating retailer emissions taking into account (a) emissions associated with contracts with zero and low emissions generation, and (b) emissions associated with the balance of consumption
 - Calculating emissions associated with contracts with zero and low emissions generation in the following way:
 - Allowing all generators to issue and sell certificates stapled with the emissions intensity and year of generation
 - Maintaining a central registry of certificates
 - Making certificates eligible for retailer compliance only during the year of generation (to align with the emissions intensity target for the particular year)
 - Assigning emissions associated with certificates to retailers holding those certificates
 - Calculating emissions associated with the balance of consumption:
 - Calculating the 'residual'/uncontracted emissions and emissions intensity in the NEM
 - Applying the residual emissions intensity to retailer consumption not covered by certificates
 - Comparing the combined emissions from certificates and the residual with the emissions target.
- An extension to the RET to 2024 and a readoption of the 41,000GWh target would enable a transition to the NEG without the risk of stifling investment. Any impact on RET related costs at the retail level is likely to be more than offset by a lowering in wholesale electricity costs.
- Offsets would be better directed at sectors that have limited or no capacity for reducing emissions - for example, certain industrial sectors; the aviation sector, amongst others.

APPENDIX 1: Conceptual Design for an Auction Based Reliability Requirement

Amount of capacity	<ul style="list-style-type: none"> The ESB decides the amount of capacity to be auctioned in each region. The amount reflects AEMO's assessment of the total capacity required to meet the reliability standard, taking into consideration forecasts of demand, distributed energy resources, transfers across interconnectors and any generation that is available but does not participate in the auction.
Eligibility to participate in the auction	<ul style="list-style-type: none"> All generation sources Demand side response including embedded generation. Electricity storage with (aggregated) minimum capacity of X MW (e.g. 2 MW as in the U.K) Existing and new (non regulated) merchant interconnectors Registration is mandatory but participation is voluntary with provision for opt-out with notification of availability during the auction year The amount of capacity that can be bid into the auction will be certified by the delivery body (AEMO or an equivalent institution), and subject to de-rating factors that reflect the 'firmness' of the capacity to be bid in.
Auction	<ul style="list-style-type: none"> For each delivery year, and each region, an auction is held four years ahead of delivery (T-4), supplemented by a further auction one year ahead of delivery (T-1) to enable the participation of demand response, as well as to refine the level of capacity procured The auction will be conducted in a descending clock format, with a price cap. All participants receive the clearing price set by the marginal bidder Existing plant will be eligible for one year capacity agreements. Refurbished plant will be eligible for up to 5 years of contract support subject to capital expenditure exceeding a minimum capital expenditure/kW threshold New investment with capital expenditure/kW above a minimum threshold will be eligible for contract support for up to 15 years New and refurbishment developments will be subject to delivery performance milestones Successful bidders will enter into a capacity agreement with the delivery body, and will receive capacity payments during the delivery year/s.
Secondary market	<ul style="list-style-type: none"> Holders of capacity agreements may re-assign their obligations after the auction and before the delivery year, subject to the replacement capacity being pre-qualified and registered to participate in the auction (i.e. not opt-out) Participants who over deliver against their commitments may re-allocate that volume to participants who under deliver A register of trades will be maintained by the delivery body.
Compliance	<ul style="list-style-type: none"> Compliance will be assessed on the basis of physical availability and/or performance during periods of peak demand or system stress as defined in advance. There will be a process of advance warning of such periods There will be a penalty for non compliance.
Cost recovery	<ul style="list-style-type: none"> The cost of capacity payments will be recovered from wholesale market customers in proportion to their contribution to system demand during compliance periods.