

1 Introduction

Goldwind supports the objectives of the National Energy Guarantee (NEG) and is aligned with its design principles. The following submission aims to make a constructive contribution in regard to the NEG emissions trajectory.

2 About Goldwind Australia

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

In 2018 Goldwind was 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 PMDD turbine sales, wind farm investment with financial solutions, project management and operations and maintenance services.

Goldwind has two office locations. Our head office was established in Sydney in 2009, and our Melbourne office was established in 2010. Our experienced team of over 130 people has local and global knowledge. This includes expertise in the Australian wind industry in sales, investment, development, technical, commercial, construction and operations. Goldwind's projects include:

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
Moorabool	321 MW wind farm	VIC
Stockyard Hill	530 MW wind farm	VIC
Cattle Hill	144 MW wind farm	TAS

Development

Coppabella	280 MW wind farm	NSW
Rabbit Ridge	30 MW wind/solar/battery/diesel	QLD

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

3 Electricity Sector In The National Context

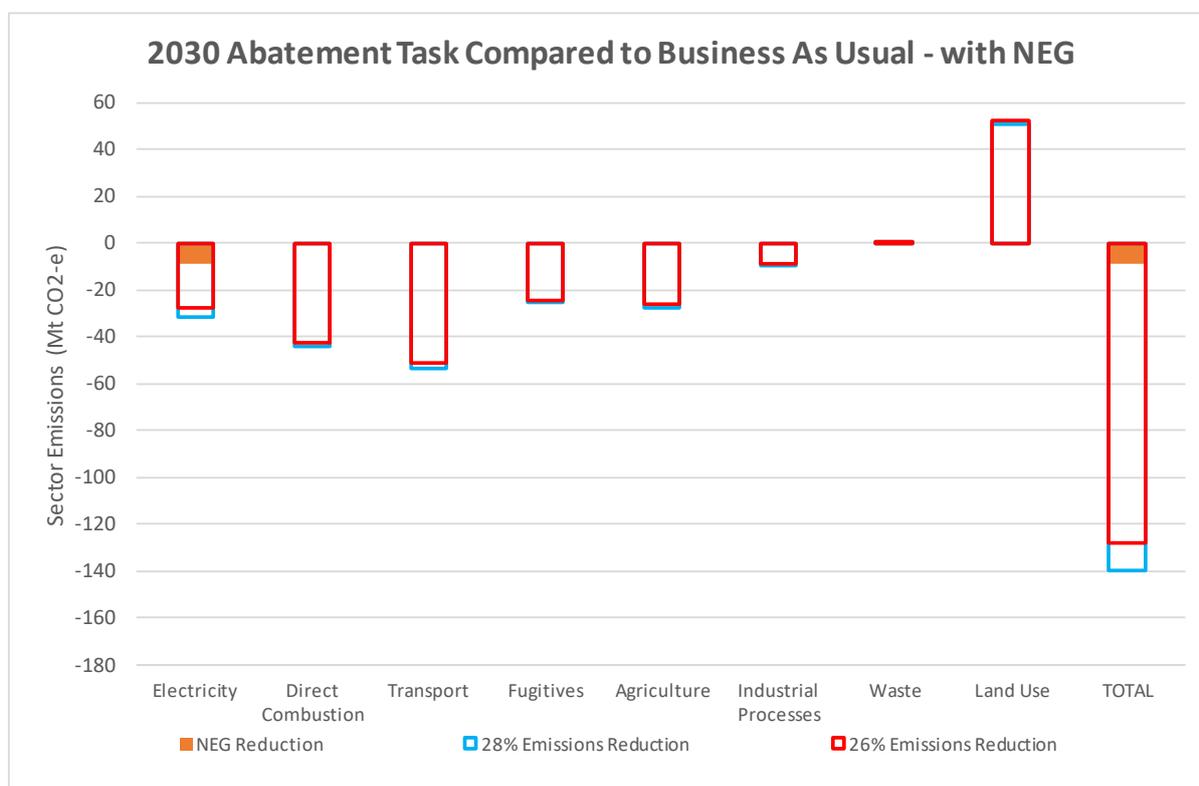
The Australian Government is a party to the Paris Agreement and has committed to a 26 to 28% emissions reduction in 2030 compared to 2005 levels.

The NEG aims to reduce emissions within the NEM to a level that is 26% below its 2005 emissions.

As illustrated in Figure 1 below, our analysis indicates that:

- Abatement delivered by the NEG will only contribute a small fraction of the total requirement for the national electricity sector.
- Abatement delivered by the NEG will be a very small fraction of the total national requirement. Other key economic sectors - combustion; transport; fugitives; agriculture; and industrial processes will therefore face significantly large abatement tasks.
- The business as usual emissions from the Land Use sector are beyond a 28% reduction, helping to offset emissions from other sectors. This is reflected in the positive value in the chart below rather than a required reduction for the land use sector.

FIGURE 1



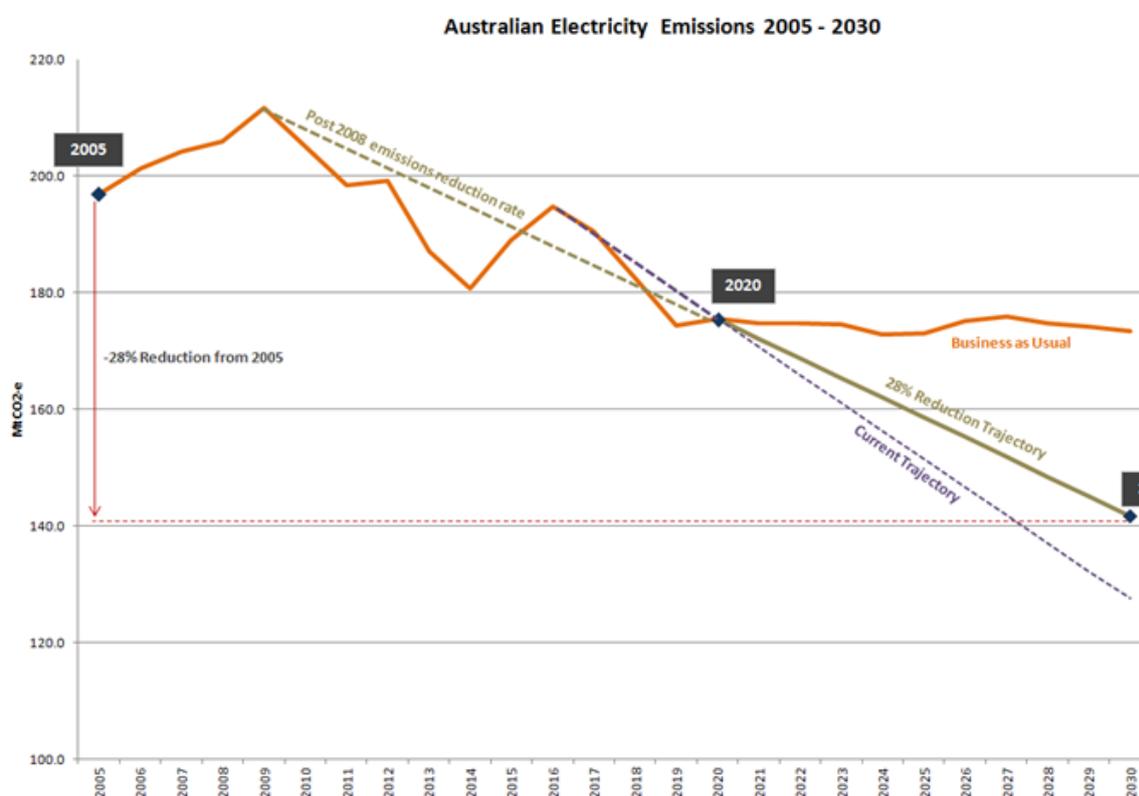
In effect, under the current NEG proposal, the national electricity sector - which has the capacity to deliver large volumes of relatively low cost abatement, would carry a disproportionately small share of the national abatement task. In contrast, other sectors of the economy - where cost effective abatement is limited, would face an onerous abatement burden.

4 Electricity Sector Emissions Trajectories

As illustrated in Figure 2 below:

- **Business As Usual** - In the absence of a national policy mechanism to set an emissions trajectory, a Business As Usual (BAU) trajectory would result. This has been assessed by the Department of Environment and Energy in December 2017.¹
- **28% Reduction Trajectory** - The electricity sector is expected to be more readily able to achieve emissions reductions than other sectors of the economy. A 28% national electricity sector reduction therefore represents a conservative trajectory.
- **Current Trajectory** – Following the last RET Review, the renewable sector has achieved a heightened rate of progress, resulting in a steeper National Electricity Sector emissions reduction trajectory – Current Trajectory.

FIGURE 2



Continuing on the Current Trajectory would result in a 35% reduction in National Electricity Sector emissions by 2030. This trajectory would result in the electricity sector reducing emissions by an extra 14 MtCO₂-e beyond a 28% reduction, reducing the burden that needs to be placed on other sectors of the economy.

Adopting the 28% Reduction Trajectory for the electricity sector would represent a significant slowing in the rate of National Electricity Sector Emissions reduction.

In the absence of a binding emissions trajectory, National Electricity Sector Emissions would not reduce post 2020 and would stabilise at a 12% reduction on 2005 levels, well short of the Paris Agreement requirement.

¹ Australia's emissions projections, December 2017 <http://www.environment.gov.au/climate-change/publications/emissions-projections-2017>

5 National vs NEM Based Approach

For Australia to achieve the target National Electricity Sector Emissions Reduction, the National Emission Guarantee needs to be truly National in scope.

As outlined in Table 1 below, from 2005 to 2020, NEM emissions have reduced at a greater rate than Nationally.²

TABLE 1

Emissions (MtCO ₂ -e)	National	NEM	Rest of Country
2005	196.8	175.0	21.8
2020 Forecast	175.5	144.3	31.2
Change	- 21.3 (-11%)	- 30.7 (-18%)	+ 9.4 (+43%)

If a 28% NEM reduction were adopted with no constraint on Rest Of Country emissions, the result in 2030 would be:

- NEM emissions = 126.0 MtCO₂-e (28% reduction)³
- Rest Of Country emissions (Business As Usual) = 34.7 MtCO₂-e (59% increase)
- National electricity sector emissions = 160.7 MtCO₂-e (18.3% reduction)

This would clearly result in the electricity sector not contributing its proportion of the Paris Agreement reduction and it would leave a significant task for the Rest Of Country - equivalent to ~60% of the sectoral abatement task, implying that:

- another policy mechanism would be needed to achieve the Paris Agreement;
- the burden would be disproportionately high on the Rest Of Country;
- it would be inefficient to require emissions reductions to be separately delivered by Rest Of Country when lower cost options may be available in the NEM/or visa versa.

The Emissions Guarantee design as now structured can accommodate a national approach through the adoption of a uniform electricity emissions intensity trajectory across Australia.

² NEM emissions during 2005 - 2016 have been drawn from <https://bit.ly/2wrOalu> (page 12); NEM electricity generation and emissions projections have been 'reconstructed' using Jacobs Finkel review BAU modelling for 2020 and 2030 as 'book ends' - with linear changes in between.

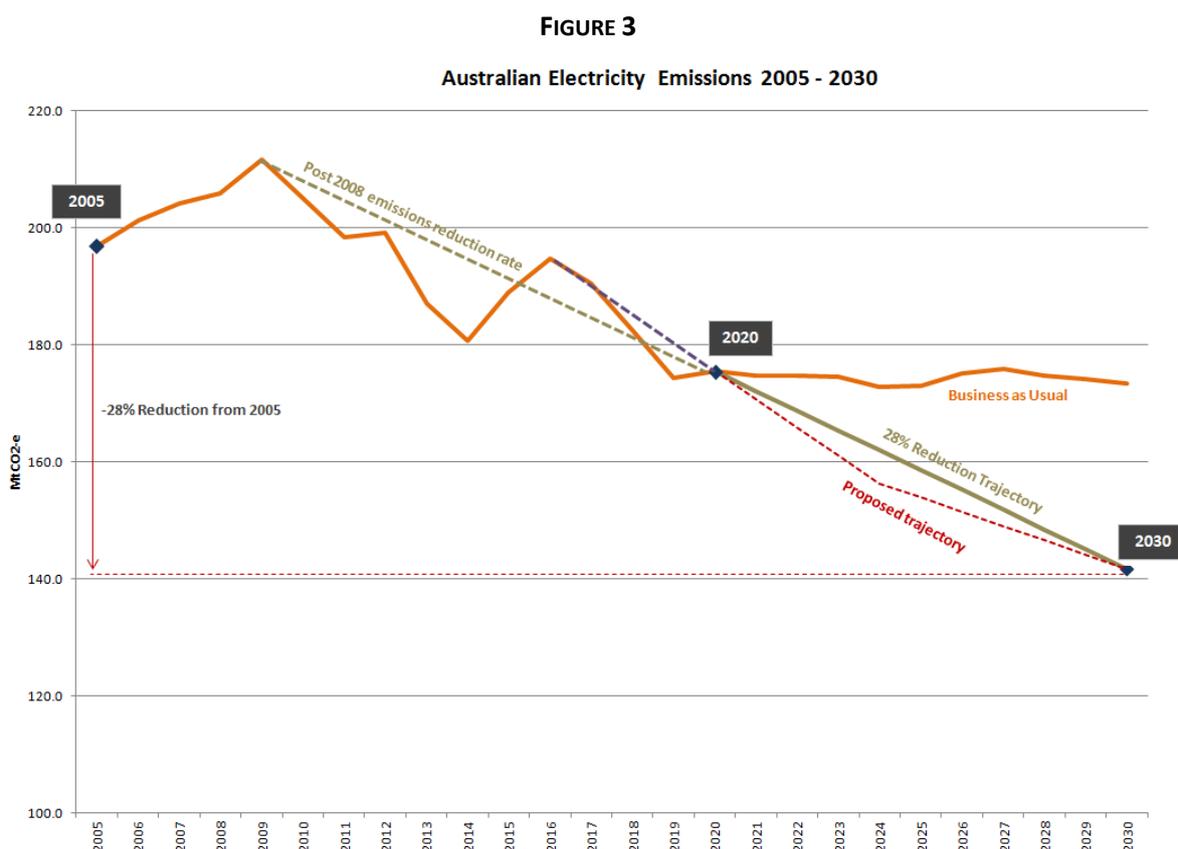
³ Ibid

6 Suggested Approach

Goldwind proposes that the emissions trajectory be framed within the following parameters.

- At least a National Electricity Sector emissions target of 28% reduction by 2030. This is consistent with Government Policy.
- Harness the current renewable energy development and investment momentum in the early years post 2020 by maintaining the Current Trajectory until 2025. The ability to deliver on this trajectory will be strengthened by the incentives provided under the NEG for gas generation which both has relatively low emissions and favourable dispatchability characteristics.

The proposed trajectory is illustrated in Figure 3.



To ensure a truly national approach, Goldwind proposes the adoption of a uniform electricity emissions intensity trajectory across Australia.

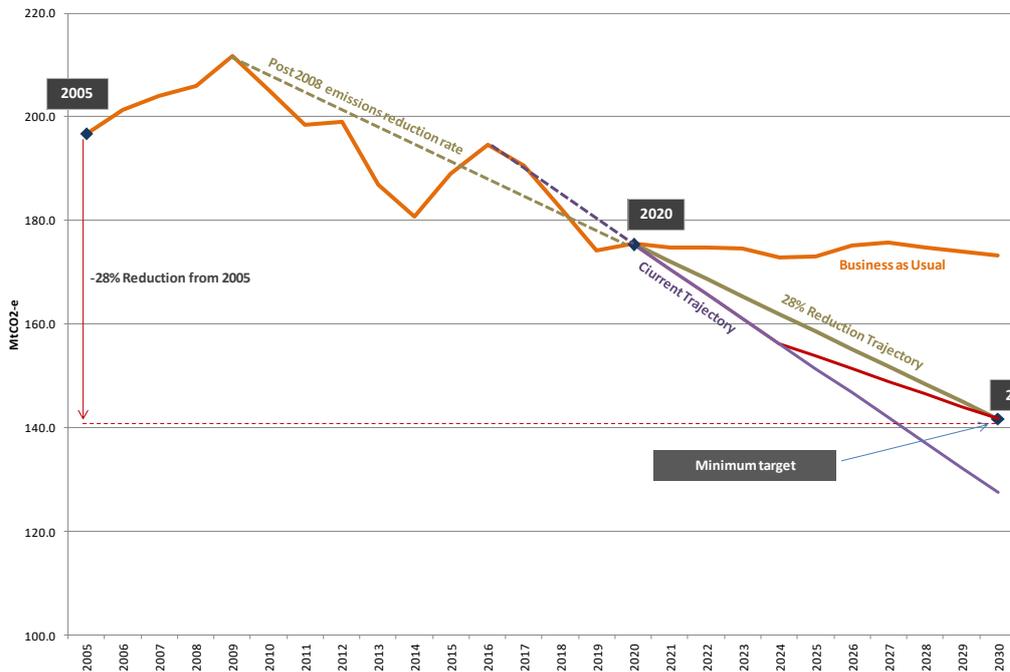
Such an approach would enable a transition to the NEG without the risk of the current investment momentum stalling post 2020.

In order to achieve an appropriate balance between the need for flexibility in regard to the trajectory against the industry need for certainty, Goldwind also proposes:

- Legislating five years of national electricity targets for 2021 – 2025
- Setting a minimum target for 2026 - 2030 of 28% national electricity sector reduction, illustrated in Figure 4
- Extending the legislated 5 year target by two years, every two years - i.e. targets for 2026 and 2027 are legislated in 2022, and targets for 2028 and 2029 are legislated in 2024. This provides certainty for investors to ensure efficient response to the target.

FIGURE 4

Australian Electricity Emissions 2005 - 2030



Extending the 2021 - 2025 trajectory to 2030 would make a material contribution to reducing the burden that needs to be placed on other sectors of the economy, illustrated in Figure 5 below.

FIGURE 5

