

Briefing Paper: Native forest wood and the Renewable Energy Target

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1. Summary

The Australian Government is proposing to include the burning of 'native forest wood waste' as an eligible source for Renewable Energy Certificates (RECs) under the Renewable Energy Target (RET). The Government is seeking cross-bench support in the Senate for this inclusion.

The inclusion of burning native forest biomass in the RET has substantial negative consequences and risks, including:

- **Preventing establishment of large scale renewables:** Absorbing further RET capacity under the reduced 33,000 GWh cap, restricting uptake of genuine renewable technologies - particularly large scale solar - in the RET.
- **High emissions:** Best practice international studies suggest that in many cases native forest biomass burning is likely to have a similar emissions profile to coal and other fossil fuels. High emissions are particularly likely in Australia given the substantial CO₂ released when tall wet eucalypt forests are logged.
- **Impacts on high conservation value forests and wildlife:** Inclusion would result in standing trees from high conservation value forests being cut, woodchipped, and burnt for power generation, with substantial evidence that current forest management regulation does not protect high conservation values.

2. Key Issues

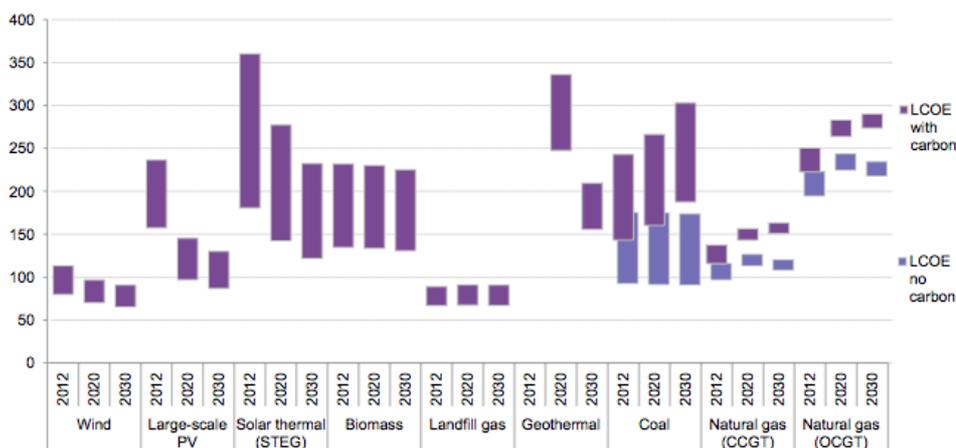
2.1 Preventing establishment of large scale renewables

A reduced 33,000 GWh RET introduces a substantial constraint on emerging large scale renewable technologies – particularly solar. Bloomberg¹ estimated the following levelised minimum cost per MWh for the energy technologies in Australia:

Table 1: 2012 – 30 levelised cost of energy in Australia

Technology	2012 cost per MWh (\$AU)	2020 cost per MWh (\$AU)
Wind	\$80	\$70
Large scale solar photo-voltaic	\$155	\$100
Solar thermal	\$170	\$145
Biomass ²	\$140	\$140

Figure 1: 2012-30 levelised cost of energy in Australia (real 2012 AUD/MWh)



Source: Bloomberg New Energy Finance

¹ <http://reneweconomy.com.au/2013/renewables-now-cheaper-than-coal-and-gas-in-australia-62268>

² While the above analysis includes a range of biomass technologies under the biomass definition, native forest biomass is contained within the range of costs.

Inclusion of native forest wood burning has significant potential to further reduce the RET capacity available to large scale solar thermal and solar PV projects. The Australian Solar Council has already raised serious concerns that the 33,000 GWh target will be taken up with in-train wind projects:

Because the target has been curtailed down to 33,000 and there has been a pause in construction, there is a backlog of shovel-ready wind projects ready to go. Those projects will move in, the target will be reached very quickly and it means then that those big solar projects will never happen³.

As the Bloomberg analysis in the above graph indicates, the most cost effective biomass projects had a 2012 cost and a projected 2020 cost lower than solar thermal, and a 2012 cost below that of large scale solar PV.

Estimates by the Australian Forest Products Association⁴ and The Australia Institute⁵ suggest native forest biomass potential to be in the order of 3000 GWh. A 2012 CSIRO⁶ study estimated that 10,000 GWh could be produced annually from native forest biomass at current logging rates if all woodchips were diverted to biomass. A separate 2012 peer reviewed study estimated 7091 GWh⁷ potential if all exported native forest woodchips were diverted to biomass.

In addition to the likely dominance of remaining RET capacity by wind, these figures indicate a substantial further effective reduction in the target, further stalling investment in new large scale solar projects.

The production costs of woodchips are also reduced through substantial effective subsidies for road construction, forest management and timber production. Cash transfers or absorbed losses by state native forest government business enterprises also provide a substantial competitive advantage

³ John Grimes, CEO, the Solar Council, <http://www.abc.net.au/7.30/content/2015/s4232578.htm>

⁴ <https://retreview.dpmc.gov.au/sites/default/files/webform/submissions/16.05.2014%20RET%20review%20AFPA%20submission.pdf>

⁵ Dennis (2015) *Briefing Note: Do we need to burn forests to save the environment*, The Australia Institute.

⁶ Crawford D et al. (2012). *AEMO 100% Renewable Energy Study: Potential for electricity generation in Australia from biomass in 2010, 2030 and 2050*. CSIRO Energy Transformed Flagship, Newcastle, Australia.

⁷ Farine et al. (2012) An assessment of biomass for bioelectricity and biofuel, and for greenhouse gas emission reduction in Australia, *GCB Bioenergy*, **4**, 148–175.

over large scale solar and other renewable technologies.

For example, over \$400 million has been provided to state-owned enterprise Forestry Tasmania in its 21 year history, including cash transfers of \$65 million in the past two financial years.

If native forest biomass is made eligible under the RET, the next generation of large solar farms and other technologies is likely to be further crowded out by a technology that has no proven ability to produce energy at an emissions intensity lower than coal, significant subsidies unavailable to competitors, and substantial environmental impacts.

2.2 High emissions

Australia's forests store globally significant amounts of CO₂⁸. In general terms, when native forests are logged and burnt for power generation, CO₂ is released into the atmosphere. Only a portion is re-absorbed when trees regrow, before the next logging cycle begins. This results in net carbon emissions⁹.

A substantial body of peer reviewed research internationally¹⁰ has found that producing electricity from wood in many circumstances has little or no emissions benefits over fossil fuels¹¹.

A 2012 North American study¹² assessed the use of this rationale to 'promote policies that encourage the substitution of fossil fuel energy sources with biomass'. The study concluded that:

This position ignores the inherent complexities associated with atmospheric greenhouse gas (GHG) accounting of woody biomass energy generation, including the consideration of the

⁸ Keith, Mackey, Lindenmayer (2009) Re-evaluation of forest biomass carbon stocks and lessons from the world's most carbon-dense forests, *Proceedings from the National Academy of Sciences*, vol. 106, **28**:11635 – 11640.

⁹ Ibid.

¹⁰ Gunn, Ganz and Keeton (2012) Biogenic vs. geologic carbon emissions and forest biomass energy production, *GCB Bioenergy*, **4**:239-242.

¹¹ Ibid.

¹² Ibid.

system boundaries used in net emissions calculations and the indirect effects associated with land-use change.

A 2011 peer reviewed study assessing emissions from biomass-driven native-forest logging across a range of North American regions and forest types found that native forest bioenergy generated higher emissions than fossil fuels in 80 per cent of the regions studied¹³.

In an Australian context, given the large volume of stored CO₂ released as a result of logging tall eucalypt forests¹⁴ – the primary forest type targeted for logging - substantial emissions are likely to result from logging and burning for power.

Protecting vegetation is identified as essential to reducing Australia's emissions¹⁵, with Direct Action heavily dependent on this to achieve current targets. There is no logical rationale in providing renewable energy credits for a technology that creates emissions from burning vegetation and offers no clear or proven CO₂ reductions over fossil fuel, when protecting native vegetation is a key area for Australia to meet climate targets.

2.3 'Wood waste' means standing whole trees from native forests, including high conservation value forests

The term 'wood waste' in the forestry industry refers not only to offcuts from sawmilling operations, but also to the 'waste' or 'residual' wood that is primarily comprised of whole standing trees from a forest that are not of an adequate quality to be milled for timber. This latter category is the main feedstock for woodchipping.

The proportion of wood sourced from logging operations defined as 'residue' or 'waste' generally

¹³ Hudiberg *et al.* (2011) Regional carbon dioxide implications of forest bioenergy production, *Nature Climate Change*, 1:419 – 423.

¹⁴ Keith, Mackey, Lindenmayer (2009) Re-evaluation of forest biomass carbon stocks and lessons from the world's most carbon-dense forests, *Proceedings from the National Academy of Sciences*, vol. 106, 28:11635 – 11640.

¹⁵ <http://www.climateworksaustralia.org/project/current-project/pathways-deep-decarbonisation-2050-how-australia-can-prosper-low-carbon>

ranges from 30 – 75% of the total volume of wood removed (though in some instances in Victoria and Tasmania up to 90% is woodchipped) , depending on products, markets, forest type, and logging type¹⁶.

Category 5 of the pre- 2011 wood waste eligibility guidelines for the RET make clear that ‘wood waste’ refers to wood produced directly from native forests logging operations - sawmill residue is addressed separately under Category 4¹⁷.

2.4 Impacts on high conservation values under current forest management

The Australian Forest Products Association suggests that existing frameworks for forest management - such as the Regional Forest Agreement framework, Australian Forestry Standard certification, and state regulation of logging - are sufficient safeguards to protect the environment where native forest wood may be extracted for biomass¹⁸.

There are numerous instances demonstrating that these mechanisms are inadequate and failing to protect environmental values. For example, logging has contributed heavily to the recent listing of the Leadbeater’s Possum in Victoria as critically endangered – that is, having a high risk of extinction in the near future¹⁹. Similarly, recent evidence has identified logging being approved by the Tasmanian Government in the habitat of the endangered Swift Parrot, ignoring advice from expert Government scientists²⁰ about direct impacts on the species’ viability. The Swift parrot is also currently being considered for listing as critically endangered by the Commonwealth.

RET eligibility would provide an additional incentive to log areas of high conservation value that are currently not adequately protected or adequately managed to protect conservation values.

¹⁶ Farine *et al.* (2012), An assessment of biomass for bioelectricity and biofuel, and for greenhouse gas emission reduction in Australia, *GCB Bioenergy*, 4, 148–175.

¹⁷ Australian Government Office of the Renewable Energy Regulator (2001) *Guide to Wood Waste Eligibility Assessment Sheets*.

¹⁸ <http://www.ausfpa.com.au/wp-content/uploads/12.05.2015-Wood-waste-for-RET-must-be-sustainably-sourced.pdf>

¹⁹ <http://www.abc.net.au/news/2015-04-23/leadbeaters-possum-declared-critically-endangered/6414284>

²⁰ <http://www.abc.net.au/news/2015-03-22/endangered-swift-parrots-breeding-threatened-logging-advice/6339116>

3. Background Notes

The (RET) requires electricity retailers to purchase a specified amount of renewable energy from certified generators. Certified generators are issued with Renewable Energy Certificates (RECs) for every unit of renewable energy they supply, which are sold to electricity retailers. Retailers use these RECs to prove to the energy regulator their obligations under the RET are met.

Over the past two and half decades, there have been around a dozen proposals for the construction of large-input power generation plants fuelled on native forest woodchips. These plants generally sought input volumes of 200,000 to 500,000 tonnes per year, and have been proposed in NSW, Victoria, WA and Tasmania. None have progressed to construction.

Approvals exist for large scale native forest biomass plants in Manjimup in WA (380,000 tonnes per annum), and Southwood (330,000 tonnes) and the Tamar Valley (500,000 tonnes) in Tasmania.