

The Australian Forests and Climate Alliance submission into the Independent Review into the Future Security of the National Electricity Market

The Australian Forests and Climate Alliance has correctly argued since 2009 that native forest biomass is neither a carbon neutral nor a low emission means by which energy can be generated, either alone or in co-generation facilities.

We observe that the preliminary report of the review you are undertaking includes biomass combustion in its list of 'low emission' technologies: 'There are a number of low emission electricity generation technologies such as biomass combustion'

In relation to the carbon emission intensity of wood biomass combustion we refer you to the repeated warnings of groups of scientists both in Australia and from other continents willing to 'sign off' on the certainty that wood biomass combustion is not only not a low emission energy technology (owing to the immediate pulse of CO₂ it releases into the atmosphere) but is in fact more likely to generate more GHG emissions globally for a variety of reasons including the loss of carbon sinking role and potential of the forests from which it is harvested.

As we have little time to input to this process we refer you to the reasoning of Australian and international scientists prepared to publish public warnings to policy makers about the disastrous impacts of considering wood biomass a 'low emission technology'. Please see below, (and attached). Further thoughts follow.

OPEN LETTER TO THE AUSTRALIAN PARLIAMENT, Senators and Members

We are scientists, researchers and analysts with a direct interest in the management, exploitation and conservation of Australia's native forests. We write to express our sincere opposition to the inclusion of native forestwood as an eligible fuel source for electricity generation under the Renewable Energy Target.

The inclusion of native forest wood in the RET is being driven in part by the idea that burning native forest wood for electricity production will lower carbon emissions, replace coal and be based on residues left from sawlog production. However, these pressures are misguided and superficial. We ask that you not accept them on face value. Federal legislation should not allow for the burning of native forests to be termed 'renewable' and included in the government's Renewable Energy Target.

- The claim in early June by Environment Minister Greg Hunt that forest waste is better burnt even if creating CO₂, than left to rot and produce methane is an extremely ill-informed and concerning statement as part of a Parliamentary speech.
- The definition of 'waste' is a key point and still remains without an adequate answer. Trees cut for pulplogs for paper production are considered 'waste' even when they comprise most of the logs taken from a forest. Australia should not be repeating the mistakes of the past 50 years of supporting a woodchip industry based on this distorted definition of waste.
- There is currently a growing demand in the Asian region for cheap wood pellets to burn in power plants. This gives an incentive to Australian forest industries to provide the resource for overseas use as well. In fact the current situation points to this being the most immediate market and one which would replace the recently collapsed export woodchip industry. If Australia begins to supply this market the demand could be difficult to curtail in the future. It

could intensify the industrialisation of native forest management beyond the current practices and cause irreversible impacts on forest ecosystems.

- Medium to large wood-fired generators are very inefficient and require huge volumes of wood fuel to produce a small amount of energy. Existing forest based biomass power plants in the USA emit at least 50 per cent more CO₂ than coal, for the same energy produced¹. The 70MW Laidlaw plant in NH USA burns 113 tons of wood an hour. Such demands for feed-stocks cannot be met by the ‘waste’ materials and residues.
- Greenhouse gas emissions created by forest logging include the loss of soil carbon, the output in the post logging site burn, emissions involved in transporting the materials from forests to processors then to generators and the emissions created by processing logs to a form suitable for a furnace. The additional CO₂ the trees would have absorbed if left to grow should also be part of calculations. Recapturing this carbon loss by regenerating the logged forest takes hundreds of years. This is far longer than the period in which we need to address the serious problem of climate change.^{2 3 4}
- Drax, the world’s biggest biomass energy plant in the UK, is selling its power for £80 per MW/hr, two-and-a-half times more expensive than coal, but last year received £340 million in ‘green’ subsidies. Without these subsidies, its biomass operation would collapse.
- Native forests are a critical component to climate mitigation and should be protected and restored as an extremely effective carbon capture and storage tool.
- Offering Renewable Energy Certificates to biomass burners or exporters would rob credits and therefore financial assistance from Australia’s true clean green energy alternatives.

1 <http://www.pfpi.net/wp-content/uploads/2014/04/PFPI-Biomass-is-the-New-Coal-April-2-2014.pdf>

2 Logging native forests causes immediate emissions (around 60% of forest carbon in SE NSW forests is lost in logging) that cannot be recovered except over centuries (an estimated 53 years to recover 75%, 152 years to recover 90%).

3 <http://onlinelibrary.wiley.com/doi/10.1111/j.1757-1707.2012.01169.x/abstract>

Energy-related subsidies should be spent on measures that reduce carbon emissions and overall energy use, and on genuinely low carbon and sustainable forms or renewable energy.

Using Australia’s native forests as fuel at an industrial scale would have long term impacts, ecologically, economically and would be counter-productive to reducing Australia’s CO₂ levels. At the very least a public inquiry is needed into whether using forests in this way can help reduce CO₂ emissions.

We ask you to consider these points carefully and exclude native forest wood ‘waste’ as a fuel source in the Renewable Energy Target.

Yours sincerely,

1. Professor Peter Gell, Professor of Environmental Science, Federation University Australia

2. Professor David Lindenmayer AO, BSc, DipEd, PhD, DSc, FAA, Fenner School of Environment and Society, ANU.

3. Adjunct Professor John R. J. French, USC, Faculty of Science, Health, Education and Engineering, Qld.

4. Don White, Adjunct A Professor, School of Chemical and Biomolecular Engineering, University of Sydney

5. Dr Greg. P. Clancy, Ecologist, Coutts Crossing, NSW

6. Ian Penna PhD, Honorary Research Fellow, Federation University, Ballarat.

7. Dr Mark Aaron Gregory, PhD, Chemistry, University of Melbourne Vic.

8. Dr Steve Leonard, Department of Ecology, Environment and Evolution, La Trobe University Vic.
9. Linda Selvey, MBBS(Hon), MAppEpi, PhD, FAFPHM, Associate Professor, Director of Epidemiology and Biostatistics, Faculty of Health Sciences, Curtin University WA.
10. Steve Phillips, B.Sc.(Hons), Ph.D. Managing Director/Principal Ecologist, Biolink Ecological Consultants NSW.
11. Alan Roberts, MSc Solid State Physics Melb University (1967), NSW
12. Mark Graham, B. App. Sc (Env. Res Mngmnt) - collaborator with UNSW, Macquarie, UNE, UTS, SCU.
13. Dr Oisín Sweeney, Science Officer, National Parks Association of NSW .
14. Annette McKinley, M. Litt (Botany), consultant plant ecologist, NSW.
15. Barbara Stewart B.Sc (Hons) Ph D, Consultant plant ecologist, NSW.
16. Lucie Bradley, PhD, Organic chemistry, science communication, Monash University Vic
17. Fiona Sutton, Botanist B.Biol.Sc. (Hons.), Ecology Australia, Vic
18. Dr Peter McQuillan, Honours Programme Coordinator, School of Land and Food, University of Tasmania.
19. Marion Carey, MBBS (Hons) MPH FAFPHM FRSPH, Adjunct Associate Professor (Research), Monash University, Vic.
20. Elaine bayes BSc (Hons), MSc, ecologist with Rakali Ecological Consulting
21. David Cheal, Assoc. Adj. Professor, Centre for Environmental Management, Faculty of Science & Technology, Federation University, Vic
22. Damien Cook, Principal Ecologist, Rakali Ecological Consulting, Vic.
23. Dr Graeme Lorimer, PhD, F.Airqual, 'Director, Biosphere Pty Ltd' Vic.
24. Bertram Lobert, BSc, MSc, Ecologist & Conservation Coordinator Strathbogie Ranges Conservation Management Network.
25. Michael Calver, Associate Professor in Biological Sciences, School of Veterinary and Life Sciences, Murdoch University.
26. Andy Baker, BSc (Hons), Wildsite Ecological Services.
27. Harry F. Recher, FRZS, AM, Senior Fellow, The Australian Museum.
28. David Milledge MRSc, wildlife ecologist (UNE).
29. Rhonda James, BBus M.EnvMan. Ecologist, Manager, Bushland Restoration Services, NSW
30. Neil Marriott, B Ed. Environmental Consultant, Stawell, Vic.
31. John Kershaw, B.Env.Sc., Dip.Nat.Res.Mgt. Senior Botanist, Ecology Australia Pty Ltd.
32. Keely Ough, Scientist, BSc Hons.
33. Bernard Mace, ARMIT, LIM, GMOO-STS, RSV.
34. Geoffrey William Carr, BSc, Director, Ecology Aust Pty Ltd.
35. Ruth Marr, BSc(Hons), Ecologist, Ecology Australia.
36. Dr Linden Gillbank, School of Historical and Philosophical Studies, University of Melbourne.
37. Doug Frood, BSc (Hons), Principle, Pathways Bushland and Environment.
38. Susie Duncan, BSc (Hons), Director, Hinterland Bush Links, SE Qld.
39. Dr Chris belcher, BSc, MSc PhD, Principle Ecosystems Env Consultants Vic
40. Dr Heather Keith, Fenner School of Environment and Society, ANU.

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Sent via First Class Mail and E-mail

Gina McCarthy
Administrator, US Environmental Protection Agency
1200 Pennsylvania Avenue, NW
Washington, DC 20460

Dear Administrator McCarthy,

As the Environmental Protection Agency strives to limit greenhouse gas (GHG) emissions, it is critical for the carbon accounting rules to be correct. Rules that improperly credit activities for reducing emissions when they actually increase them create powerful perverse incentives. We write to raise strong concerns about the November 19th, 2014 memo from Acting Assistant Administrator for the Office of Air and Radiation Janet McCabe (McCabe memo), which would credit use of woody biomass for energy with reducing emissions, when it actually increases them. Because EPA can expect its accounting rule to be applied globally, it is likely to lead to the additional harvest or conversion to agriculture of large areas of the world's forests.

Burning biomass instead of fossil fuels does not reduce the carbon emitted by power plants. In fact, as EPA itself acknowledges, burning biomass degrades facility efficiency and increases day-to-day emissions over emissions when fossil fuels are burned alone. Growth of additional biomass beyond business-as-usual or recovered from waste can help to offset those emissions, but peer-reviewed science indicates this process takes several years to several decades. This conclusion was the basis of a report issued by EPA's Science Advisory Board (SAB) in 2012, which criticized EPA's 2010 Draft Framework for Biogenic CO₂ Accounting (the Framework) because it would have claimed carbon savings for harvests of wood that diminished the growth of forest stocks in the US and much of the world. By itself, diverting biomass from existing uses in food, paper and timber cannot reduce GHG emissions (except at the cost of food, paper and timber). At the same time, burning biomass, such as trees, that would otherwise continue to absorb and store carbon comes at the expense of reduced carbon storage.

The McCabe memo proposes to treat as "carbon-free" all woody or agricultural feedstocks so long as they are derived "from sustainable forest or agricultural practices." At maximum, "sustainability" implies that forest harvesting does not exceed growth, which is a necessary, but not sufficient condition for carbon neutrality, as found by the SAB. At minimum, sustainability practices can help reduce soil erosion and other environmental impacts of forestry or agricultural production. But such practices have little-to-no bearing on the carbon implications of biomass use. Including such exemptions for broad categories of biomass fuels in a final rule would not only encourage large-scale harvesting of wood to replace coal and other fossil fuels but also place no limits on the diversion of the world's agricultural land to energy use, requiring conversions of forests and grasslands to meet food needs.

The potential implications of these exemptions are large because even small quantities of bioenergy require large quantities of wood. For example, the US Energy Information Agency estimates that treating woody biomass as carbon free with modest carbon restrictions would result in an additional 4% of present US electricity from wood by 2035. That would require an increase of wood equivalent to 70% of the US timber harvest, which for perspective would be far greater than if we were to abolish all paper and cardboard recycling in the US. The International Energy Agency estimates that treating bioenergy as carbon free globally, coupled

Transparency: The preliminary report emphasises the importance of transparency and integrating energy and emissions reductions policies.

To date there has been inadequate reporting for emissions from logging, processing and use in relation to wood biomass. Assumptions about carbon neutrality wrongly skew market in RECs in favour of wood biomass: regulatory change is needed here.

The review is concerned with reliable supply. We would claim wood biomass an unreliable fuel for many reasons: uncertain future growth rates as result of past logging practices and under climate change; effects of storms and droughts increasing under climate change. Past impacts on soils and water supplies have not been well measured, so adverse collateral damage from industrialised logging on soils and water supplies has been ignored or underplayed. These impacts are inherently damaging but in relation to the reliability of biomass supply could have significant consequence.

Biomass from native forests is particularly expensive: it is uncompetitive with plantation wood. It is only state and commonwealth subsidisation that is keeping the native wood logging industry operating. It is inherently more expensive than solar and wind, and much more emissive. We refer you to a summary of findings of the recent Chatham House report¹ on biomass energy which finds that:

Current biomass policy frameworks are not fit for purpose and require substantial changes to ensure they contribute to mitigating climate change rather than exacerbating it.

- The use of wood for electricity generation and heat has grown rapidly in recent years, but its real impact on the climate and on forests is controversial. Like the debate around transport biofuels a few years ago, this has become a highly contested subject with very few areas of consensus. This paper provides an overview of the debate around the impact of wood energy on the global climate, and provides recommendations for policymakers on the appropriate way forward.
- Although most renewable energy policy frameworks treat biomass as though it is carbon-neutral at the point of combustion, in reality this cannot be assumed, as biomass emits more carbon per unit of energy than most fossil fuels. Only residues that would otherwise have been burnt as waste or would have been left in the forest and decayed rapidly can be considered to be carbon-neutral over the short to medium term.
- One reason for the perception of biomass as carbon-neutral is the fact that, under international greenhouse gas accounting rules, its associated emissions are recorded in the land use rather than the energy sector. However, the different ways in which land use emissions are accounted for means that a proportion of the emissions from biomass may never be accounted for.
- In principle, sustainability criteria can ensure that only biomass with the lowest impact on the climate are used; the current criteria in use in some EU member states and under development in the EU, however, do not achieve this as they do not account for changes in forest carbon stock.

¹ <https://www.chathamhouse.org/publication/woody-biomass-power-and-heat-impacts-global-climate>.

Forests are a major biodiversity, water and carbon store, essential to water as well as carbon cycles. Please see Appendix 1 for an exhaustive list of evidence for why forests (and wood biomass from forests, especially native forests) should be protected and kept out of electricity supply markets.

Forests also play an important role in regional and micro-climate moderation so ongoing clearing of them for biomass energy purposes will be disastrous for regional areas already experiencing severe climate change impact.

Time does not permit us to elaborate on the catastrophic effects of fires which have been demonstrated to burn hotter and faster through heavily logged areas. This creates a dangerous feedback loop, more logging, more fire, more emissions, more warming, more fire.² Wood biomass increasingly harvested to secure supply for this form of energy production is likely to lead to will produce more and worse fires, thereby increasing carbon emissions.

² <http://www.pnas.org/content/108/38/15887.abstract>

<http://www.myenvironment.net.au/index.php/me/Work/Fire/Fire-Resources/Effects-of-logging-on-fire-regimes-in-moist-forests>