NCC Response to Questions on Notice - Upper house inquiry into the future of the timber industry

(1) Could you just respond and provide any evidence that you are aware of that bioenergy from wood waste can replace or is better than carbon intensive fossil fuels such as coal, oil and gas?

Answer:

In February 2021, over 500 scientists from around the world signed an open letter to the leaders of the United States, EU, Japan and South Korea condemning biomass because it is not carbon-neutral and that it draws subsidies and investment away from genuine green energy sources

Does replacing coal with wood lower CO2 emissions? Dynamic lifecycle analysis of wood bioenergy (2018) by John D Sterman[1,4], Lori Siegel[2] and Juliette N Rooney-Varga found biomass:

"[when] used to displace fossil fuels injects CO2 into the atmosphere at the point of combustion and during harvest, processing and transport. Reductions in atmospheric CO2 come only later, and only if the harvested land is allowed to regrow...The combustion and processing efficiencies of wood in electricity generation are lower than for coal (supplementary material). Consequently, the first impact of displacing coal with wood is an increase in atmospheric CO2 relative to continued coal use, creating an initial carbon debt" (p.8)

"although bioenergy from wood can lower long-run CO2 concentrations compared to fossil fuels, its first impact is an increase in CO2, worsening global warming over the critical period through 2100 even if the wood offsets coal, the most carbon-intensive fossil fuel. Declaring that biofuels are carbon neutral as the EU and others have done, erroneously assumes forest regrowth quickly and fully offsets the emissions from biofuel production and combustion. The neutrality assumption is not valid because it ignores the transient, but decades to centuries long, increase in CO2 caused by biofuels" (p.8)

Other references include:

European Academies Science Advisory Committee Forest (2019) bioenergy, carbon capture and storage, and carbon dioxide removal: an update

"EASAC's analysis of the role of bioenergy within sustainable forestry management [3] and the deficiencies in the concept of carbon neutrality [4] led to the conclusion that current large-scale replacement of coal in electricity generation by biomass pellets was increasing atmospheric CO2 levels with little or no consideration of when these initial adverse effects on climate may be reversed through regrowth (the payback period1). While the simple concept of carbon neutrality had merely presumed that carbon released into the atmosphere when biomass was burnt would be reabsorbed through regrowth at some stage, the limited amount of time remaining before Paris Agreement targets are exceeded on current trends2 means that the payback period is highly significant. Taking this into account, EASAC had concluded

[3] that 'relying on forest biomass for the EU's renewable energy … increases the risks of overshooting the 1.5°C target' and that forest biomass should only be regarded as eligible for renewable energy incentives if it reduced the risk of overshooting Paris targets; thus a technology that fails to achieve a significant net reduction in atmospheric CO2 levels within payback periods of a decade or so should not be supported. At present, depending on the forest being harvested and the nature of the biomass being extracted, payback periods can range from 10 years to never" (P.2)

DeCicco, J. M. & Schlesinger, W. H. 2018. 'Opinion: Reconsidering bioenergy given the urgency of climate protection' PNAS, 115:39:9642-9645 <http://bit.ly/37JmXRL> & <http://bit.ly/2ZGN1IZ>

Recent international biomass developments: Drax, the biggest biomass power station in the UK, has also been embroiled in controversy regarding their green and clean energy status.

a. They were dropped from the S&P Global Clean Energy Index, which also came after financial services firm Jeffries stated that bioenergy was not a viable solution to addressing climate crisis (https://www.theguardian.com/business/2021/oct/19/drax-dropped-from-index-of-green-energy-firms-amid-biomass-doubts).
b. A report released by think tank 'Ember' last week claims that Drax is actually the largest C02 emitter in the UK (https://www.theenergymix.com/2021/10/24/report-tags-heavily-subsidized-drax-biomass-plant-as-u-ks-biggest-co2-emitter/).

(2) **The CHAIR:** It has. I might just start with the Nature Conservation Council. I sent through a document of a DPI study that was done from 2015 to 2018 on selective thinning and its ability to improve biodiversity. I think it was done in the Pilliga but I have also heard that they were doing some stuff on river red gums. Perhaps on notice, Dr Brad Smith might have a look at that and give some comment as to whether there is a place for selective thinning of some forests in terms of improving biodiversity?

Answer:

Is there a place for selective thinning of some forests in terms of improving biodiversity?

Thanks to the committee for bringing this study to our attention. It presents a mix of responses and results in thinned and unthinned white cyprus forests. While some species monitored in the study preferred uncluttered, thinned forests, the study also raised concerns, for example that threatened south-eastern long eared bat selectively roosts in dead trees within dense stands, which are often removed during thinning operations. We also note that the density of large trees and hollow-bearing trees was unchanged by thinning. Our advice to the committee is that thinning in a forestry context still presents more risks than benefits for biodiversity. In a forestry

context, thinning is often used to produce single-aged stands of the most valuable timbers, reducing biodiversity and resilience of the forest. Thinning operations also cause damage and disturbance such as erosion, the risk of spreading weeds and disease, and damage to understory flora. We recommend that to improve biodiversity, management actions in forests should focus on dealing with identified threats to conservation values and threatened species such as reducing fire risk, managing feral animals and weeds.