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Biodiversity Legislation Review,

PO Box A290,

Sydney South NSW 1232

5<sup>th</sup> September 2014

Dear Review Panel,

Having recently commenced a business to convert biomass into Biochar and Bioenergy from urban green waste and invasive native species (woody weeds) I have significant experience and insight into native vegetation management in inland NSW. Prior to commencing Bio Carbon Capture I was employed by the Central West CMA for about a decade, and most of this time I worked as the Coordinator of Native Vegetation with a professional team to negotiate Property Vegetation Plans under the Native Vegetation Act 2003 (NV Act 2003). I have been involved directly with hundreds of private landholders and have a deep understanding of both the intent of the legislation and the desires of landholders to manage native vegetation on their land and value the opportunity to contribute to this review.

As native vegetation legislation has progressed from SEPP 46, the Native Vegetation Conservation Act to the current NV Act 2003 the process and landholder engagement has matured, but it is time for a deeper and more respectful engagement between the administrators and the landholders. By about 2012 our small Central West CMA PVP team to finely negotiate the requirements of the Act to match the landholders needs so that the bulk of

complaints were more about the long waiting time for processing rather than the constraints the legislation placed on them. Many complaints were about having to wait 2-3 years for an application to be processed and less about the constraints, but CMA budget limited staff numbers to about 4 to service more than 10% of NSW with more than 100 PVP applications. A team of 8 would have reduced the backlog, but I never won this argument.

The Central West PVP Team simplified the language to quickly explain what landholders could do, there are 5 types of PVPs that could allow clearing:

1. Invasive native species (INS) where 80% of listed species dominating an area could be treated to return native pasture while keeping all stems over 20 centimetres and keeping 20% in a dense state (simple, clear and easy to process, down to about one week in 2012/13),
2. Thinning to Benchmark – similar to INS and as easy to process if there was a benchmark for the vegetation community and that thinning of stems would improve the stand and allow the retained stems to grow faster and provide hollows faster,
3. Continuing use where the landholder and the CMA needed to demonstrate evidence that 2 clearing events for the same land use change had occurred twice or more prior to 1990 (also easy if the evidence was available)
4. Scattered paddock trees (SPT) if identified as isolated trees in paddocks that had been legally cleared and cropped, and provided there was sufficient offset area that could be improved to make up for the loss. (Large hollows more difficult, no hollows easier), and
5. Broadscale clearing was the most difficult (only small hectare for high value development requiring significant offset).

Once we listened carefully to the landholders needs and explained the availability of one or more permissible clearing types, in most cases an outcome was achieved, but this does take time and resources that were not sufficiently available. There was a mismatch between the agencies to service the landholders needs to deliver the required service that has exacerbated the negative view of the current legislation.

There is a serious lack of recognition of the potential for productive use of waste biomass for renewable energy, materials, and carbon sequestration from legal and appropriate clearing, particularly INS in central and western NSW. INS dominates nearly 20 million hectares in central and western NSW. The Native Vegetation Public Register maintained by the Office of Environment and Heritage (OEH) records about 4 million hectares permitted INS clearing, and only a small proportion of this has been treated to restore native groundcover due to the high cost of conventional clearing using heavy machinery, windrowing and burning the waste to the atmosphere. At a density of 20 to 100 tons per hectare this material represents billions of tons of unrealised resources, and is keeping these landscapes poorly managed for biodiversity, productivity and food security. The excess woody density promotes feral pests including goats and pigs. In recent decades the moderate success in controlling rabbits has only boosted the density and survival of woody weeds (INS).

The arrival of the first humans in Australia, the loss of native mega fauna, the second wave of humans 2 centuries ago, the cessation of firestick burning to maintain a mosaic of open and closed vegetation structure, the introduction rabbits, the collapse of wool, the collapse of rabbits, differential management of national parks and over clearing on more productive landscapes has demonstrated a continuous pattern of reactive and inadequate landscape

management. Native vegetation, soils and water resources have not been managed for long term resilience for more than a century and now in desperate need of restoration for biodiversity and food security.

Many large properties and state owned lands are invaded with millions of tons of biomass from a few dominant species. An alternate path to clearing and burning is to institute a practice of considered legal clearing with restoration of native groundcover without the final step of burning the valuable biomass to the atmosphere. Mobile pyrolysis technology designed and produced in Australia is now available to partially combust this material to produce Biochar that retains about 50% of the carbon from the wood.

Biochar has been demonstrated to double the water holding capacity of soils due to the high surface area of its micro-pores. This internal surface area also retains nutrients for access by microbes. As well as rehydrating the landscape for adaptation to climate change, Biochar lasts for thousands of years, so producing permanent solid carbon from invasive species is a pathway to mine carbon dioxide from the atmosphere.

Pyrolysis of INS waste would be a reversal of mining fossil energy and emitting carbon dioxide, so it is a fundamentally sound process. This technology is now maturing to also capture the smoke as wood gas (CO, H<sub>2</sub>, CH<sub>4</sub>), biocrude and waste heat for additional renewables. While wind and solar power are beneficial, bioenergy has these added benefits.

A more collaborative development of legislation that allows protection of the environment and access to new income from waste would demonstrate a more mature management and appreciation of best proactive management of native vegetation. While “simpler, streamlined and more effective legislation” sounds ideal, a big discussion about best use could be just as useful to develop “adult” and futuristic management of native vegetation. Locking up is no good, neither is over-clearing.

Several start-ups of biomass use from INS have occurred including Western Regeneration aiming to supply INS biomass for mine industry energy, Delta Energy attempting co-firing of INS waste with coal, small diameter high grade timber and essential oil production. These projects could all add employment opportunity for remote communities from better use of INS waste and need fostering.

A very recent perverse outcome from the Carbon Farming Initiative has been the payment for carbon credits under an “Avoided deforestation” methodology to landholders to not treat INS. This methodology was designed for and appropriate to protecting tropical rainforests from clearing, and does not seem ideal for invaded woodlands in semi-arid Australian landscapes. Development of a methodology where landholders make Biochar and keep it on their property for payment as carbon sequestration would be a very tangible way to reduce emissions and produce more food for export.

Before any more simple, streamlined legislation is developed a more holistic and extended discussion needs to be held to find feasible ways to make best economic use of woody waste so that landholders and public land managers can afford to better manage native vegetation.

Best regards,

A handwritten signature in blue ink, appearing to read 'M Longhurst', written in a cursive style.

Michael Longhurst - Director, Biocarbon Capture Pty Ltd