



**Murray Region Forestry Hub**

# Land Use Review and Comparison

The relative contribution of potential environmental plantings and harvestable timber plantations to regional economies in NSW and northern Victoria



**Murray Region  
Forestry Hub**

# Introduction

Our region is one of the cornerstones of Australia's softwood plantation estate, with timber underpinning local jobs, national housing supply, and low-carbon manufacturing. This summary ensures that the findings from a recent review comparing the benefits and risks of either Timber Plantations or Environmental Plantings are clearly communicated to government, industry, and the community, plus what can be done to improve the performance of these undertakings.

A key finding of the review is that for every 1,000 hectares planted to Timber Plantation rather than Environmental Plantings about 20 to 40 extra jobs are created locally which equates to about an extra \$2 to \$3 million of annual household income. The overall impact of this prioritising of Timber Plantations over Environmental Plantings is about a \$2 to \$5 million increase in the Gross Regional Product for every 1,000ha.

When undertaking the review concerns were raised about inconsistencies in the estimate of Australian Carbon Credit Units (ACCUs) generated between Timber Plantations and Environmental Plantings

on the same site. Timber plantations have been managed within the region for a century with growth being continuously monitored over that period, whereas Environmental Plantings are relatively new. Until actual data starts becoming available for Environmental Plantings caution needs to be applied to the assumption of ACCU yields.

In the review the economic returns of Timber Plantations and Environmental Plantings were compared and the results for Timber Plantations were more favourable when within a 100km haul distance of the processing facilities.

Given Timber Plantations and the final timber products are significant stores of carbon we can address the community demand for climate action, employment, housing timber, plus regional & national prosperity by applying the powerful principle: right trees, right place, right purpose.

**Dean Anderson**  
Chair  
Murray Region Forestry Hub





## Background

### Trees, carbon and land

In Australia, the Australian Carbon Credit Unit (ACCU) Scheme provides a material revenue incentive for tree planting projects that meet the requirements of various vegetation methods overseen by the Clean Energy Regulator.

Across the Hub region, the two approaches available to proponents for new projects are the *Environmental or Mallee Plantings FullCAM Method 2024* and the *Plantation Forestry Method 2022* (specifically Schedule 1). In the context of the Hub's work, environmental plantings typically involve planting a mixture of tree and shrub species that are native to the local area and may reflect local vegetation communities. Timber plantations generally refer to plantations of commercial tree species established for harvesting to produce timber and wood fibre.

### Supporting informed decision-making

For landowners and project proponents to make informed and effective land use decisions between commercial plantations and environmental plantings, it is important they have access to good quality data and analysis. The Land Use Review and Comparison project has analysed potential ACCU generation and revenue for both methods under a range of conditions. It has also quantified the environmental, socio-economic and economic returns for each method, compared the risk profiles and quantified and compared the potential area available across the Hub region for undertaking both environmental planting and timber plantations projects.

# Suitability of vegetation-based projects

## Current situation

The project identified approximately 5,100 hectares of registered ACCU Scheme methods using either the environmental plantings or timber plantations methods, which are almost entirely environmental plantings. This is consistent with adjacent regions in both NSW and Victoria, as well as the East Gippsland-Bombala region. The large commercial softwood estate in the Hub region was established well before the ACCU Scheme was developed and there has been no material new establishment under the Plantation Forestry Method.

## Potential land suitability

Building on recent land capability and suitability analysis for timber plantations undertaken for the region, the project provided an analysis of the area.

**Table 1: Modelled area suitable for environment and timber plantation methods**

Suitability category	Modelled suitable area (ha)	
	Timber plantations	Environmental plantings
Highly suitable	175,642	175,642
Suitable with higher risks	391,691	524,512
<b>Total</b>	<b>567,333</b>	<b>700,154</b>

Importantly, the project identified that:

- All areas suited to timber plantations are also suited to environmental plantings.
- There are areas that are marginal or unsuited for timber plantations, because of factors such as rainfall or elevation, but are suitable for environmental plantings.

These findings can support the development of guidance and extension materials that can help project proponents and landowners better identify which project types are most suited to particular conditions.



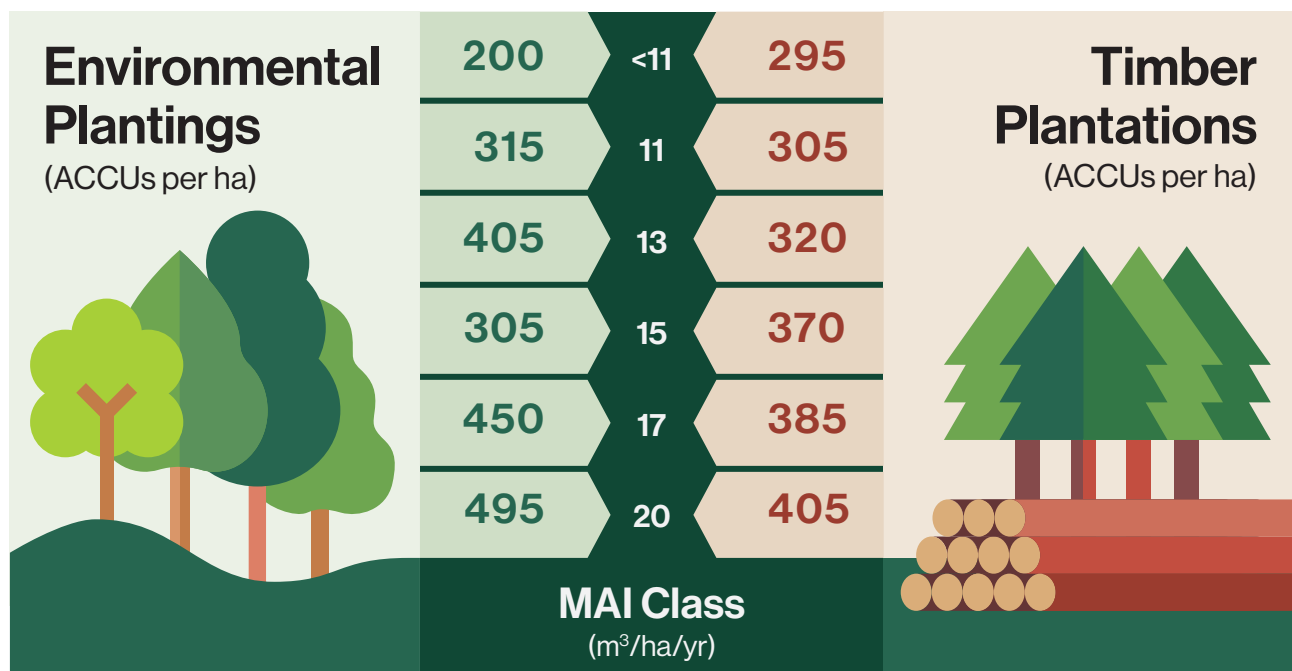
# Quantifying the benefits of planting projects

As well as the ACCU generation and associated revenue from potential projects, the Land Use Review and Comparison study estimated the potential direct economic returns from timber harvesting of plantations, as well as the socio-economic outcomes generated in terms of jobs, household income and Gross Regional Productivity.

## Carbon crediting potential

The study found that, over a 25-year crediting period, the total ACCUs generated for environmental plantings and timber plantations in the region is broadly comparable on a per hectare basis for a range of growth rates.

Figure 1: Average ACCUs by method and MAI class



Crediting potential was calculated for a range of scenarios for each ACCU method, assuming between 0.25 – 1% of the suitable area was planted each year over ten years which shows that between 4.6 – 19.3 million ACCUs could be generated over a 25-year crediting period. The crediting potential between timber and environmental plantings is equivalent across all the scenarios.

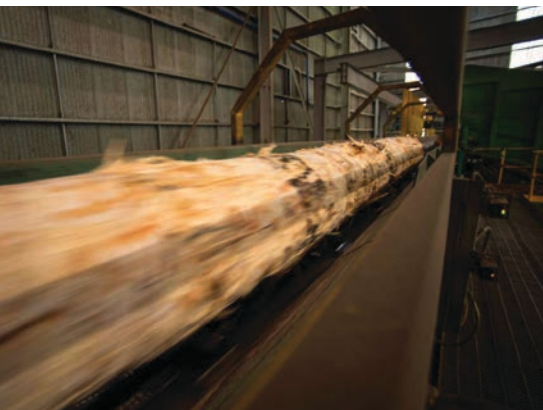
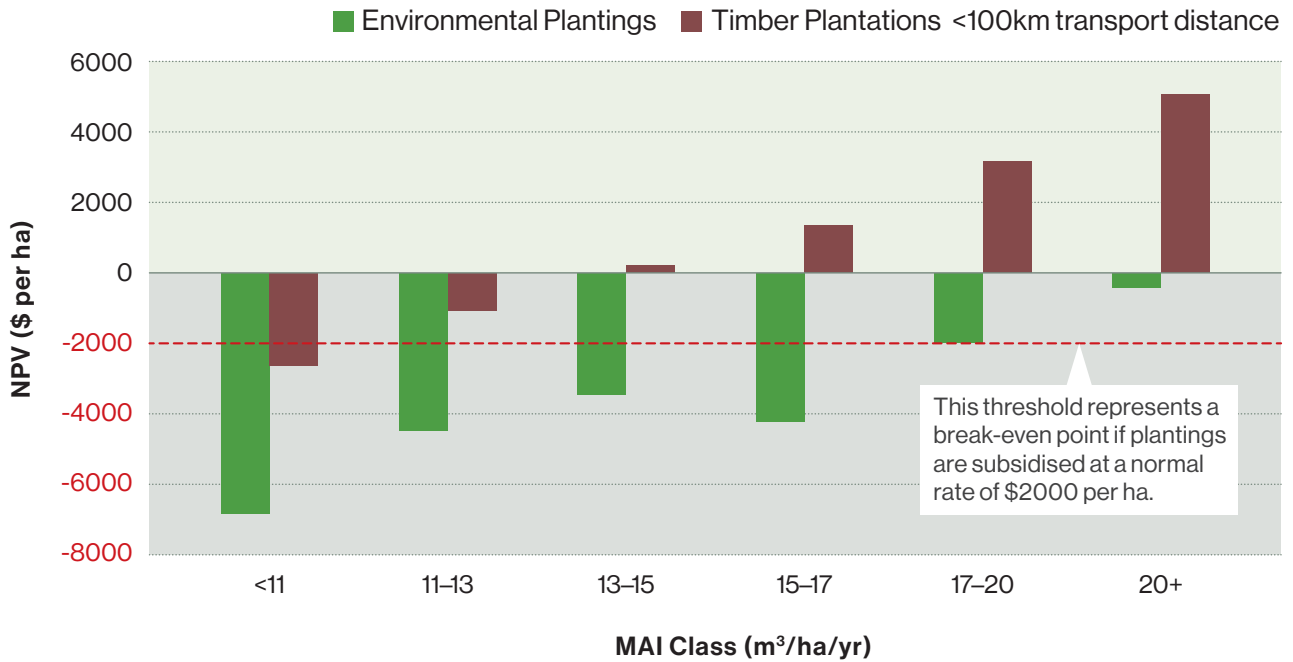
Table 2: Potential ACCU generation by planting method and area planted

Scenario	Timber		Environmental	
	Area ('000 ha)	ACCUs ('000)	Area ('000 ha)	ACCUs ('000)
0.25%	14	4,594	18	4,831
0.50%	28	9,189	35	9,662
1.00%	57	18,379	70	19,324

## Economic returns

Direct economic returns were calculated and compared for timber plantations and environmental plantings applying general current market conditions for revenue (ACCUs and logs) and costs, and using the net present value (NPV) method. The analysis demonstrated that, even with a premium ACCU price for environmental projects, timber plantation projects performed considerably better across all productivity classes. Sensitivity analyses on a range of input factors confirmed that timber plantations outperform environmental plantings unless the premium for environmental plantings compared to timber exceeds about \$25/ACCU.

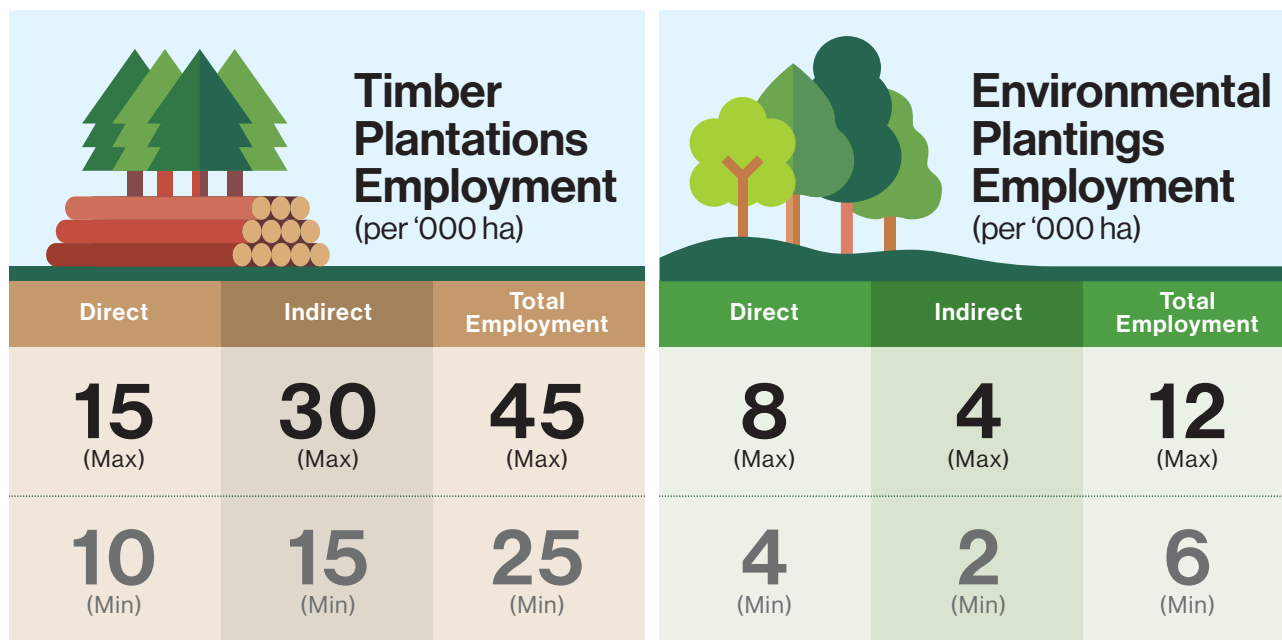
Figure 2: Economic returns from alternative planting methods (base case assumptions)



## Socio-economic outcomes

A review of the socio-economic contributions of environmental plantings and timber plantations was conducted with a primary focus on quantifying and comparing how these projects may translate into regional jobs, household income and Gross Regional Product.

As with direct economic returns, timber plantations outperform environmental plantings. Using employment as one measure, timber plantations are estimated to generate up to 45 jobs per 1,000 ha established, compared with up to six jobs for environmental plantings.



## Risk

Risk is an important factor to assess when comparing any alternative land uses. In the case of environmental plantings and timber plantations. For timber plantations, data certainty and modelling is based on the availability of reliable data collected and analysed over decades. However, environmental plantings generally carry a higher risk due to factors such as modelling uncertainty, lack of empirical data on productivity and market risk from reliance on a single income stream.

**Table 3: Comparative risk assessment for timber plantations and environmental plantings**

Key risks for investors	Timber	Enviro	Key risks for communities	Timber	Enviro
Market risk	●	○●●	Local employment risk	●	●●●
Modelling risk	●●	●●●	Regional investment risk	●	○●●
Productivity risk	●	○●●	Traffic related risks	●●	●
Bushfire risk	●●	●●	Weeds & pests-related risks	●●	●●
Regulatory risk	●	●	Bushfire risk	●●	○●●
Social licence risk	●●	●●	Permanent land use change	●●	●●

Key to risk ratings: ● Low; ●● Low-Medium; ●●● Medium; ○●● Medium-High; and ●●● High.

# Regional opportunities

## Strategic location of project types

The Land Use Review and Comparison study demonstrates that there is a significant opportunity within the Murray Region Forestry Hub to generate the complementary benefits of environmental plantings and timber plantations by encouraging landowners and project proponents to consider where the methods are most suited to maximise environmental, social and economic outcomes across the region. This is consistent with the policy framework for the regional forestry hubs and is underpinned by the principle of planting the right trees at the right scale in the right places.

## Informing strategic land-use decisions

Where timber plantations are suitable, they outperform environmental plantings from a social and economic perspective and provide equivalent outcomes with respect to carbon sequestration. There are large additional areas of land where environmental plantings are well suited and can also complement other rural land uses. These project findings demonstrate a clear need for a strategic framework to be developed

that can guide and recommend appropriate project types across the region based on the suitability characteristics assessed in the study. The Land Use Review and Comparison report provides information and analysis that can be used to help landowners and project proponents to better understand where the different project types are best suited.

## Policy framework

Policy at the national and state level supports efforts to use timber plantations and environmental plantings to improve environmental outcomes while contributing meaningfully to regional development and industry stability. The Land Use Review and Comparison study demonstrates how these outcomes can be best realised by strategically supporting the application of the most suitable method for tree planting. Policy settings that encourage and incentivise timber plantations where they are most suited will contribute to significant gains in regional socio-economic performance while maintaining equivalent carbon sequestration outcomes.



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