Submission

Interim Emissions Reduction Targets for Victoria (2021-2030) Final Report

July 2019
ABOUT VAFI

The Victorian Association of Forest Industries Inc. (VAFI) is the peak representative body for the Victorian timber and forestry industry. Across our dynamic sector we represent forest owners and growers, harvest and haul businesses, wood, pulp and paper processors, and manufacturers. VAFI advocates for its members, associated businesses and individuals across both the native forest and plantations sectors and throughout the timber products supply chain.

Our industry plays a vital role in Victoria’s economy because not only is wood beautiful and functional, it is a renewable, biodegradable, recyclable product, used for new homes, buildings, furniture, paper and fuel for green energy. Wood is simply an essential part of life and the ultimate renewable.

VICTORIA’S TIMBER AND FORESTRY INDUSTRY

The Victorian timber and forestry industry makes use of a mix of hardwood (eucalypt) and softwood (pine) resources supplied from public forests and private plantations, with local and regional strengths in each sector. Victorian timber resources support a wide range of products including sawn timber products, engineered wood products, pulp and paper manufacture, and high-quality wood chips.

Victoria has a strong and sustainable integrated timber and forestry industry that works efficiently and effectively. It is highly regulated and based on sustainable forest management practices. The industry manages and draws on a natural asset that has a high economic, social, environmental value. Victoria’s timber and forestry industry has a significant role to play in the low carbon future and combating climate change.

Through the unique properties of sustainable timber products, combined with suppliers, local communities and a highly skilled workforce, our industry delivers innovative and renewable products to local, national and international markets.

The timber and forestry industry is vital for Victoria and a key contributor to the state’s economy. Key economic drivers include:

- Over $7 billion generated in sales and service income annually.¹
- Direct employment of more than 15,000 people across the supply chain of forest management and harvesting: primary processing (e.g. sawn timber, particleboard, wood chips) and secondary processing (e.g. paper packaging, furniture)²
- Forest management and primary processing supports an estimated 10,000 further jobs generated through flow-on economic activity.
- The whole industry, including secondary processing, supports an estimated total of 40,000 to 50,000 flow on jobs.³
- The Central Highlands and Gippsland regions contain 55% of Victorian forest management, harvesting and primary processing jobs.
- Melbourne metropolitan region contains 75% of secondary processing jobs.

¹ ABARES Australian forest and wood products statistics: September and December quarters 2018
² Schirmer, J et al. (2017) Socio-economic impacts of the forest industry Victoria: Green Triangle; and Schirmer, J et al. (2018) Socio-economic impacts of the forest industry Victoria (exc. the Green Triangle)
³ Schirmer, J (2010) Socio-economic characteristics of Victoria’s forestry industries
Executive Summary

The risks posed by climate change to the timber and forestry industry, and the communities it supports, are potentially substantial if left unaddressed. VAFI welcomes the Independent Panel’s recommendations to Government on interim emissions targets.

Globally, sustainable forest management and timber production is recognised as a major opportunity for emissions abatement. With the correct policy framework, the Victorian timber and forestry industry will have the capacity to make substantial contributions to Victoria’s fair portion of emissions reductions.

The Final Report identifies the timber and forestry sector as having the second greatest potential (after the energy sector) to reduce Victoria’s net emissions. However, only limited detail is provided. This submission outlines the best value abatement opportunities, barriers to further development, and steps the government can take to support and promote these pathways.

VAFI strongly supports pursuing emissions reduction opportunities across the board, including the timber and forestry supply chain (drawing on a mix of resources from public and private land to supply a diverse range of products). Maintaining and increasing forest plantations, at commercial and farm scales, alongside broader afforestation programs will provide substantial benefits, while also generating jobs and supporting regional Victorian communities.

However, VAFI does not support reductions in harvesting native forest hardwood as a pathway to emissions reduction. This approach is not aligned with international assessments (such as the IPCC and FAO) and VAFI has strong concerns that it does not satisfy the Guiding Principles of the Climate Change Act 2017.

Reductions in native timber harvesting will result in job losses and business closures in the native hardwood sector across regional Victoria. Because potential impacts on forest carbon stocks associated with timber harvesting are often overestimated, emissions benefits arising from reduced harvesting are likely to be smaller than expected. Additionally, native forest timbers cannot be replaced by Victorian plantations, and a reduced supply will drive increased demand for alternative materials or imported timbers, further reducing expected emissions benefits. This approach will also create large economic and social impacts, including reduced bushfire response capacity.

The Final Report also overlooks the significant emissions reductions opportunities across the whole supply chain of the timber and forestry industry. The major pathways for emissions abatement are:

- The carbon sequestered by sustainably managed forests and plantations;
- The carbon stored in harvested wood products;
- The substitution of high-emissions materials with harvested wood products that have a substantially lower emissions footprint; and
- The use of residual wood for renewable energy, replacing fossil fuels.
To fully realise the potential benefits that can be achieved by the timber and forestry industry Victorian climate change policy should:

- Consider the emissions impacts across the entire timber and forestry processing system, including:
  - the carbon dynamics of the forest;
  - the full life cycle of forest products;
  - the substitution benefit of both biomass and wood products, and
  - the risk of emissions resulting from deforestation in other countries.
- Promote sustainable management and harvesting of native forests
- Provide incentives for new commercial and farm-scale plantations
- Promote the use of locally grown and processed timber products to minimise transport emissions; and
- Make use of energy from residual wood fibre.

Net zero emissions is an ambitious goal which cannot be achieved without a stable and thriving timber and forestry industry. If Victoria’s climate change policy accounts for benefits across the whole life cycle of wood products and engages constructively with the timber and forestry industry, then it can maximise net emissions reductions. State forests and plantations can continue to support the livelihoods of local communities and contribute to our economy while also delivering important emissions reductions to the benefit of Victoria and beyond.
Introduction

The Victorian Association of Forest Industries Inc. (VAFI) appreciates the opportunity to provide feedback to the Independent Expert Panel on Interim Emissions Reductions Targets for Victoria. The risks that climate change poses to the timber and forestry industry and the communities it supports are, if left unaddressed, potentially substantial. VAFI welcomes Independent Panel’s recommendations to Government of interim emissions.

The significant potential for the timber and forestry industry to contribute to climate change mitigation is acknowledged in the 4th and 5th Assessment Reports of the International Panel on Climate Change (IPCC). The 5th Assessment Report (AR5) identified management of forests for sustainable timber production, as a mitigation option that can be implemented on a short timescale with relative ease. Overall AR5 estimated that, by 2030, forestry mitigation options could contribute to global emissions reductions up to 13.8 Gt CO$_2$-e per year.4

The Food and Agriculture Organisation of the UN (FAO),5 has also concluded that:

“Increased use of wood offers important mitigation potential when it displaces fossil-fuel intense products. Production of wood-based materials and products results in lower greenhouse gas emissions than production of other materials such as concrete, metal, bricks and plastic. Responsible management of end-of-life wood products, as well as of other biomass residues generated along the wood product value chain, is critical to ensuring a low carbon footprint.”

The FAO noted that emissions reduction and avoidance options based on post-harvest use of wood are most viable in countries where a processing sector is present; forestry operates under sustainability guidelines (e.g. sustainable forest management practices); and chain-of-custody is certified. Victoria meets these criteria comfortably and is therefore well placed to deliver emissions reductions benefits through sustainable forest management and timber production.

The major pathways for emissions abatement in the timber and forestry industry are:

- The carbon sequestered by sustainably managed forests and plantations;
- The carbon stored in harvested wood products;
- The substitution of high-emissions materials with harvested wood products that have a substantially lower emissions footprint; and
- The use of residual wood for renewable energy, replacing fossil fuels.

The land and forestry sector is unique in being a carbon sink rather than a source, and the Final Report acknowledges the potential of the timber and forestry sector to further increase the size of that sink. Net zero emissions is an ambitious goal which cannot be achieved without a stable and thriving timber and forestry industry.

This submission addresses selected questions to provide further detail on the abatement opportunities listed above, barriers to further development, and steps the government can take to support and promote these pathways.

---

5 FAO (2016) Forestry for a low-carbon future integrating forests and wood products in climate change strategies, FAO Forestry Paper 177
4: Are there other key greenhouse gas emissions reduction opportunities beyond those the Panel identified?

**Opportunities from sustainable forest management**

Victoria has approximately 7.9 million hectares of public forest, of which 3.9 million hectares is designated as conservation reserves and 3.1 million hectares is multiple-use State forest. However, the Final Report does not address this substantial resource and focuses solely on the role of new tree plantings (reforestation and afforestation) to sequester carbon.

Sustainably managed, multiple-use production forests have the capacity store carbon *in situ*, and to produce:

- Wood products that continue to store carbon in the long-term;
- Substitutes for more carbon-intensive building products, minimising the need for carbon intensive imports; and
- Residues that can be used to generate renewable energy, displacing fossil fuels.

Recent research analysed native forest sites in New South Wales and accounted for all emissions mitigation opportunities – including emissions substitutions – provided by sustainably harvested wood products. This analysis showed that sustainably managed wood production forests can produce better carbon abatement outcomes than unharvested forests (Figure 1).^6^

![Graph showing carbon sequestration and energy generation](image)

**Figure 1.** Greenhouse gas implications of the “conservation” and “production” scenarios (t C ha⁻¹ sequestered or displaced) for Blackbutt forests (North Coast NSW) modelled over a 200-year period (Source: Ximenes *et al.*, 2012).

---

Locally appropriate management, including sustainable harvesting and stand thinning, can be used to regenerate degraded forests and stabilise losses of forest area over the long-term. Such management can improve forest structure and biodiversity while also delivering a financial return on wood resources. An interim assessment of a pilot management project, currently active in Gippsland,7 concluded that the mixed-age management can deliver ‘new wood’ into the industry without compromising biodiversity values and maintaining the capacity for on-going and substantial carbon sequestration.

Forest management policies that support the conversion of production forests to conservation reserves can act as a disincentive to using native forest products and residues. Converting multiple use production forests to conservation forests will reduce access to wood and may lead to increased harvesting in other countries where forests are managed less sustainably, with resultant deforestation or forest degradation in those countries.

To fully recognise the benefits that can be delivered by the timber and forestry industry, the entire forestry and processing system should be considered, including:
- The carbon dynamics of production forests;
- The life cycle of harvested wood products;
- The substitution benefit of both biomass and wood products, and
- Risk of emissions resulting from deforestation or forest degradation in other countries.

Climate change policy should account for whole of life cycle impacts in order to maximise net emissions reductions. Victorian State forests can support the livelihoods of local communities and our economy, while also delivering important emissions reduction outcomes.

**Opportunities from new plantations**

The Final Report identifies maintaining and increasing forest plantations on private land (p85) as an important opportunity for reducing emissions. VAFI strongly supports the promotion of reforestation and afforestation as a cost-effective method of reducing carbon emissions. Policies should also seek to maximise the benefits of commercial-scale plantations. Plantations can supply locally sourced and processed timber products, maximising the mitigation opportunities from timber. Increased plantation tree cover, achieved through a balanced mix of production zones, farm forestry, and environmental plantings can increase carbon sequestration and provide environmental co-benefits such as: salinity mitigation; forest landscape restoration and linkage; and improved water quality.

The current Victorian plantation estate comprises approximately 423,000 hectares of hardwood and softwood plantations. This area has remained broadly stable since 2007. Demand for wood products is increasing but there has been limited investment in new plantations. Flat supply and strong constraints on new investment and expansion in the forest processing sector will lead to an increasing reliance on imported timber and forestry products, with associated greenhouse gas emissions from transport.

---

7 Flinn, DW (2012) *Durable Timber Productivity and Ecological Project, East Gippsland. Documentation of results from the first trial coupe*
Despite positive public perception in regions where the industry operates, in common with many other industries that operate in the landscape, the plantation sector faces a number of challenges to operating in proximity to local communities. These include:

- Perception as an uncertain or unattractive commitment for landowners;
- Competition from other land use sectors, such as agriculture;
- Resistance to plantation operations from local authorities; and
- Heavy local road use during harvesting operations.

An extensive industry funded study is currently being conducted by researchers at the University of Melbourne to identify social barriers to new plantations at both commercial and farm-scales. On conclusion this study is expected to reveal new insights into socially integrated approaches to establishing new tree plantations.

VAFI recommends that that the Government consider these findings, in collaboration with plantation owners and managers, to develop frameworks that will promote new tree plantings at a range of scales to deliver commercial timber, environmental services and on-farm co-benefits.

**Carbon credits for new plantations**

In 2017, the Commonwealth government approved an accounting method for new plantation projects to bid for carbon credits through the Emissions Reduction Fund (ERF). In principle, this framework can create new incentives for developing new plantations that contribute to climate policy targets. However, in its present form there are a number of key uncertainties and barriers to participation. These include:

- Under pre-existing eligibility rules, projects cannot apply for credits in areas receiving more than 600mm of annual rainfall. This restriction means that many projects will require state water access entitlements. This is likely to be a substantial barrier in Victoria.
- The Commonwealth Minister for Agriculture has the power to reject projects that are otherwise eligible but are deemed to have an “undesirable impact” on regional agriculture. However, there are no available criteria for this decision process.
- Plantation managers have reported that national-scale modelling of carbon stocks does not match regional yield models, leading to potential under crediting.
- There is no long-term market price signal for carbon credits.
- There is a high administrative burden arising from participating in the ERF auction process, and the scheme’s long-term monitoring and reporting requirements.

New frameworks for plantations are needed to address the impediments to investment and recognise the broader public good – environmental and social – benefits of plantations. To overcome barriers to new plantation and afforestation projects, VAFI recommends:

- An ongoing plantation funding program for the whole of Victoria with a commitment to a new plantation area target;
- Regulatory reform to promoted new plantations and afforestation. Key features include:
  - Clear rules under a Code of Practice for Plantations;
  - A consistent state-wide assessment, approvals, and compliance process;
  - Transfer of regulatory oversight from local planning schemes to a dedicated state-level office; and
  - Protection of existing plantations for future rotations.
- The Victorian Government work with the Commonwealth to address the significant limitations of the ERF methodologies for commercial scale plantations.
Carbon stored in harvested wood products

A major study by the New South Wales Department of Primary Industries used a Life Cycle Assessment (LCA) approach to assess the net carbon balance of harvested wood products (HWPs), taking into account all relevant carbon emissions to, and removals from the atmosphere.

This study included the key above-ground forest carbon stores, the impact of disturbances on those pools (harvest and fire), and the dynamics of carbon stored in HWPs in service and in landfills. In addition to the physical tracking of carbon in forests and HWP, the study also considered the fossil fuel displacement benefits of using biomass for bioenergy, the product substitution impacts and the socioeconomic implications of native forest management in three case study regions (two in NSW and a mountain ash site in Victoria).

The HWPs in this study typically required lower fossil-fuel based energy in their extraction and manufacture than alternative materials. The biggest substitution impacts related to the replacement of hardwood products with imported hardwood (decking and flooring), fibre-cement cladding, concrete slabs and steel and concrete transmission poles.

The study also concluded that greenhouse gas mitigation potential of paper products is greater than typically thought. When the wood fibre used in paper production is sourced from native forests in South-East Asia, the mitigation potential by using Australian native pulpwod is large. This is due to the high emission footprint caused by forest degradation and forest loss in SE Asia, especially when it occurs on peatlands. The differences in emissions intensity between Australian wood products and imported or non-wood alternatives are summarised in Appendix 1.

The true size of the emissions reductions delivered by harvested wood products depends heavily on how harvested wood products are treated at the end of their life. For example, re-using the timber will maintain stored carbon while other disposal methods may release stored carbon to the atmosphere. Strategies to increase the use of harvested wood products should include planning for maximising avoided emissions such as: re-use and repurposing of harvested wood products; long-term disposal with minimal decomposition; and energy recovery.

Harvested wood products in construction

Increasing the proportion of harvested wood products used in construction represents a significant opportunity for reducing emissions. These materials both act as large stores of carbon and reduce the use of more emissions intensive materials. Wood products can be used to build almost any new structure up to 20 storeys including offices, apartments, schools, libraries and retail outlets, while sawn timber can be used for buildings up to eight storeys. In the short term the biggest market for timber is likely to be multi-storey apartments.

Life Cycle Assessments of a range of harvested wood products demonstrate that timber construction materials store more carbon than is emitted during harvesting and processing

---

8 Ximenes, F et al. (2016) Carbon stocks and flows in native forests and harvested wood products in SE Australia. Prepared for Forest & Wood Products Australia

(Table 1), with solid timber storing around 700kg CO\textsubscript{2}-e per m\textsuperscript{3} (one m\textsuperscript{3} of timber weighs approximately 1 tonne) over the lifetime of the product.

### Table 1. Net carbon stored by timber construction products

<table>
<thead>
<tr>
<th>Product</th>
<th>Uses</th>
<th>Net carbon emissions*</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sawn Hardwood (kiln-dried)</strong></td>
<td>- Structural timber</td>
<td>-708 kg CO\textsubscript{2}-e/m\textsuperscript{3}</td>
</tr>
<tr>
<td></td>
<td>- Internal decorative (flooring etc.)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- External (decking, cladding etc.)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Furniture</td>
<td></td>
</tr>
<tr>
<td><strong>Sawn Softwood (kiln-dried)</strong></td>
<td>- Structural timber</td>
<td>-699 kg CO\textsubscript{2}-e/m\textsuperscript{3}</td>
</tr>
<tr>
<td></td>
<td>- Internal decorative (flooring etc.)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- External (decking, cladding etc.)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Furniture</td>
<td></td>
</tr>
<tr>
<td><strong>Particleboard</strong></td>
<td>- Internal decorative</td>
<td>-13 kg CO\textsubscript{2}-e/m\textsuperscript{2}</td>
</tr>
<tr>
<td><strong>Medium density fibreboard (MDF)</strong></td>
<td>- Furniture,</td>
<td>-9 kg CO\textsubscript{2}-e/m\textsuperscript{2}</td>
</tr>
<tr>
<td></td>
<td>- Internal decorative</td>
<td></td>
</tr>
<tr>
<td><strong>Plywood</strong></td>
<td>- Structural bracing,</td>
<td>-6 kg CO\textsubscript{2}-e/m\textsuperscript{2}</td>
</tr>
<tr>
<td></td>
<td>- Interior and exterior surfacing</td>
<td></td>
</tr>
<tr>
<td><strong>Hardwood Glulam</strong></td>
<td>- Structural</td>
<td>-408 kg CO\textsubscript{2}-e/m\textsuperscript{3}</td>
</tr>
<tr>
<td></td>
<td>- Decorative</td>
<td></td>
</tr>
</tbody>
</table>

* A negative net emission figure signifies the removal of carbon from the atmosphere. Net emissions are the carbon stored in wood products, minus the emissions from harvesting, transport and processing. End-of-life emissions are dependent on final disposal (Re-use, land-fill, combustion for energy etc.) and are not presented here.

An assessment of the potential emissions reductions from increased use of harvested wood products in construction was undertaken recently. The climate change think-tank Beyond Zero Emissions (BZE) has made a detailed analysis of the potential emissions reductions that could be achieved by substituting cement with timber construction materials.

BZE concluded that it is possible to replace 7 per cent of the Australian cement market across Australia over 10 years, achieved by employing timber construction for 20 per cent of new buildings. The report outlines a 10-year strategy for timber-based construction which would use 2.8 million m\textsuperscript{3} of timber, available from existing plantations and residual timber, and would sequester 1.4 million tonnes of CO\textsubscript{2}.

Over 30 years, this strategy can eliminate emissions from 2.2 million m\textsuperscript{3} of cement and lead to a significant sequestration of carbon stored in wood products in the order of 3 million tonnes of CO\textsubscript{2}. This would require an increase in available supply from a mix of plantations and native forests and would therefore require the policy issues outlined above (constraints on investment, social opposition, carbon credits) to be addressed.

---

\textsuperscript{10} Beyond Zero Emissions (2017) *Zero Carbon Industry Plan: Rethinking Cement*
Use of residual wood for renewable energy

The 2016 assessment by Ximenes et al. (detailed above) demonstrated that one of the ways to enhance the greenhouse gas mitigation outcomes of production forestry is the increased use of biomass for bioenergy.

There are large volumes of harvest slash and processing residues available for use in Victoria. Current practices for forest harvest residues result in immediate carbon release (post-harvest burns), or progressive carbon loss due to natural decay. Similarly, many approaches for much of the available wood processing residues currently used for useful but low-value applications – such as mulch and animal bedding – result in release of all the carbon within 1-3 years, with no net mitigation benefit.

Some processing residues are already used in Victoria for heat generation at the small scale. Beaufort Hospital in western Victoria uses woodchips supplied by a local sawmill to fire its boiler. Wood processing facilities in the state will also typically use a proportion of residual fibre to offset energy costs. Thus, there are significant opportunities for native forest biomass to play a much larger role in the generation of renewable energy, especially with the recent reinstatement of native forest biomass as an eligible renewable energy source under the Renewable Energy Target (RET).

There may also be opportunities in the future for new projects to be supported by a method under the Commonwealth ERF that credits the fossil-fuel displacement benefits of using biomass for energy displacing the use of fossil fuels, against the baseline of loss of carbon in the forest via burning or natural decay. This would allow project proponents to choose which scheme (RET or ERF) would be most suitable for a given project.

VAFI recommends that any renewable energy developments and legislation in Victoria complement the Federal Government’s RET, including native forest wood waste as an eligible source of biomass for renewable energy generation.
5a: Across the Victorian economy, which activities do you think the Victorian government should prioritise in reducing Victoria’s greenhouse gas emissions?

VAFI strongly supports opportunities across the whole forestry and timber supply chain, drawing on a mix of timber resources from public and private land approaches and to supply a diverse range of products (see opportunities list in Question 4).

5b: What policies or programs are needed to drive these emissions reductions?

To fully realise the potential benefits that can be achieved by the timber and forestry industry, Victorian climate change policy should:

- Consider the emissions impacts across the entire timber and forestry processing system, including:
  - the carbon dynamics of the forest;
  - the full life cycle of forest products;
  - the substitution benefit of both biomass and wood products, and
  - the risk of emissions resulting from deforestation in other countries.

- Promote sustainable management and harvesting of native forests
- Provide incentives for new commercial plantations
- Promote the use of locally grown and processed timber products to minimise transport emissions; and
- Include energy from residual wood fibre in Renewable Energy Target (RET) frameworks

6: Are there any emissions reduction opportunities identified by the Panel that you would not support Victorian government action on? Why not?

The Final Report identifies emissions reduction opportunities through management of public native forests, including “reduced harvesting and changes in silviculture and fire management practices”. However, little detail is given as to how the Independent Panel reached this recommendation beyond reporting the total carbon stored by forests and soils. The Final Report does not address the numerous, internationally recognized, opportunities offered by use of harvested wood products to store carbon and avoid further emissions (see Question 4).

VAFI has strong concerns that reducing native hardwood harvesting:

- Is not supported by international recommendations (IPCC, FAO etc.) and peer-reviewed studies in Australia;
- Is unlikely to deliver the benefits assumed by the Independent Report.
- Will have significant impacts on regional communities that depend on timber businesses for employment, and
- Will greatly reduce the pool of bushfire response capacity and expertise that exists in the timber and forestry industry (see Question 15).
The Final Report appears to base this recommendation on a single estimate (Macintosh, 2011).11 Because this report estimates potential sequestration in native forests in the absence of bushfires, VAFI considers this to be unrealistic. It would be more appropriate to treat it as hypothetical maximum. Macintosh (2011) is also clear that the assessment makes no consideration of the cost-effectiveness of reducing or eliminating native forest harvesting.

Several recent assessments of forest carbon stocks in Victoria have substantially overstated the reduction in carbon stored in forests as a result of harvesting.12 Factors biasing estimates include:

- Assessing carbon accounting at the coupe-scale, not the landscape-scale.
- Overstating the proportion of short-lived paper products and understating the production long-lived solid wood products. As a result, this under-estimates carbon accumulated over time in harvested wood products.
- Overestimating the use of clearfell-burn-sow harvesting system, thus overestimating carbon emitted by regeneration burning. In the period 2011-17, only 26% of harvested area across Victoria was clearfell. The remainder of harvesting was under seed tree, thinning or selection regimes.13
- Presuming that all unharvested forests will become “old growth” with no losses to bushfires.

It is also common for estimates of carbon stock reductions from native forest harvesting to overestimate the proportion of harvest residue (or slash) that remains to be burnt or decomposed. The default value for moist, high quality forest under integrated harvesting for sawlog and pulpwood used in the National Carbon Accounting System is reportedly 60% slash.14 However the basis for this figure is unclear in the literature. Better estimates for Victoria are available indicating that a more realistic figure is 15-45% slash left after harvesting.15,16,17

Victoria’s state forests are sustainably managed to provide high-quality hardwood sawlogs. There is no equivalent resource available from plantations, which primarily supply hardwood pulp logs and soft wood timber. Further reductions in supply from State forests are therefore likely to drive increasing demand for either alternative materials or imported timbers which are substantially more carbon intensive (see Appendix 1). These flow-on effects have the potential to further reduce expected emissions mitigation.

---

13 Commissioner for Environmental Sustainability (2018) State of the Forests 2018
16 Ximenes, F et al. (2016) Carbon stocks and flows in native forests and harvested wood products in SE Australia. Prepared for Forest & Wood Products Australia
VAFI believes, therefore, that actions to reduce native forest harvesting do not satisfy the guiding principles in the *Climate Change Act 2017 of Informed Decision-Making* and of *Integrated Decision Making*. In the context of the likely overestimates of possible benefits and the potentially severe economic impacts to communities this recommendation is not grounded in robust evidence and would not be cost effective.

Globally, sustainable forest management and timber production is recognised as a major contributor to emissions reductions (refer Introduction). With the correct policy framework, the Victorian timber and forestry industry will have the capacity to make Victoria’s fair contribution to this goal.

9: From your experience, are there any barriers to reducing Victoria’s greenhouse gas emissions that the Independent Expert Panel didn’t identify?

Actions for addressing barriers to implementing opportunities for Victoria’s forestry and timber industry are outlined in Question 4.

15: Do you have other comments about action on climate change in Victoria?

Climate change will create potentially significant impacts on the timber and forestry industry if the risks are not managed. Both the plantation and native forest sectors are vulnerable to losses from more frequent and more intense bushfires.

The full economic effects of timber losses may take many years to become evident. In 2017 the softwood sawmill in Morwell closed, with the loss of 160 jobs in the Latrobe Valley. This was largely as a result of a reduction in log supply caused by the 2009 Black Saturday Churchill fire. The 1983 Ash Wednesday fires in South Australia resulted in approximately 20,000 hectares of pine plantation being burnt. It has been estimated that without those losses, the additional resource that may have been available 20 years later could have supported an additional sawmill in the region.

However, the timber and forestry industry also has the potential to be at the forefront of adapting to these risks. Victoria’s climate policy should recognise and support the contributions that a stable and thriving timber and forestry industry can make to reducing climate risks.
Forest Management

There are a range of forest management approaches that can be used to complement planned burning in managing fuel loads and mitigating the impacts of extreme bushfires. These include:

- **Mechanical fuel reduction**: Fire risk can be reduced by targeted reduction of understory and dense forest regrowth in areas where planned burning is difficult or undesirable (e.g. close to at-risk towns and strategically important resource assets, such as water catchments, plantations and production forests). The reduction of understory would also remove the larger fuels that can allow “laddering” fires to the tree crowns, which results in catastrophic fire fronts. Analysis by Deloitte Access Economics (DAE) has found in locations close to cities, biomass removal can complement fuel reduction burning and deliver benefits six times greater than the costs involved.\(^{18}\)

- **Managing forest stand density**: Forest stands growing at lower densities (trees per hectare) tend to have lower mortality rates than stands growing at higher densities in the same climate conditions\(^{19}\) and, for forests outside Australia, stand thinning can reduce susceptibility to fire.\(^{20}\) Research is currently being undertaken to better understand these ecological dynamics in the Victorian context.\(^{21}\) It is likely that active control of stand densities has considerable potential as a tool in increasing forest resilience to fires, particularly in a changing climate.

Industry contribution to bushfire response

Forestry industry workers are highly skilled and formally trained in a range of aspects of fire management and action in extreme wildfire events. They are also highly experienced in using machinery operations in forest conditions, road and track construction, tree falling, fire behaviour and overall local knowledge.

Common skill sets in fire management of Australia’s forest industry personnel include:

- Direct attack firefighting;
- Indirect firefighting, including backburning;
- Night firefighting where significant gains may be made under lower fire danger conditions;
- Strategic planning in fire containment and suppression, incorporating access tracks and other infrastructure;
- Fuel reduction implementation, including burning, mechanical and other forms of non-combustion fuel reduction;
- Local knowledge and experience; and
- OH&S and Risk Assessment in extreme wildfire situations.

Many businesses train staff in fire prevention and firefighting and, maintain the essential network of forest access tracks that give firefighting agencies rapid access to the fire front. The ‘first strike’ response is vital to containing a fire before it burns out of control, and forest access is key in this regard. In this respect, actions State forests support risk reduction at the landscape scale that can also benefit neighbouring national parks.

---

\(^{18}\) Australian Forest Products Association (2016) Can we better fireproof our country towns?


As forests are converted from multiple-use management tenure to conservation reserves, access tracks for industry are no longer maintained. Unmaintained forest roads and unsafe bridges are a major impediment to accessing small fires in the timely manner needed to bring them under control. It is also crucial to recognise the capacity that resides in VicForests – the government owned agency responsible for managing State forests for timber production. VicForests staff includes some of Victoria’s most experienced bushfire management practitioners, continued reduction of productive State forest area creates the risk of making VicForests operations unviable and subsequently losing crucial capacity to manage and respond to bushfires.

**Forest Industry Brigades**

A Forest Industry Brigade (FIB) is a fire brigade run by a forest plantation company. Victorian legislation requires that plantation owners fund and run a fire brigade where they have over 500 hectares of plantation within 25 km, to provide their own asset protection. In 2019 there were 22 FIBs registered across Victoria.

The industry-based brigades are set up by plantation companies who provide much of the equipment and pay staff members to attend. However, the FIBs are structured as normal CFA brigades and come under the operational control of the CFA, which sets standards and provides training. FIB members must meet the same accreditation requirements as all other CFA brigades.

Industry brigades are only required to service the companies’ plantation assets for bushfire response and fire management planning. However, FIBs regularly attend callouts to fires outside their designated area (HVP Plantations reports 60% of the fires they attend are outside their land) and many have adopted a position of shared responsibility for fire response. VAFI members that maintain their own brigades include Midway, Australian Bluegum Plantations, PF Olsen Australia and HVP Plantations, the latter managing seven brigades across their plantations.

The timber and forestry industry makes substantial contributions to state-wide fire management operations. The benefits of these contributions extend well beyond land under active forest management. It is crucial to recognise that businesses meeting their legislated requirements to supply staff, resources and equipment to Industry Brigades are also paying significant contributions to the Fire Services Property Levy.

---

22 CFA Forest Industry Brigades, CFA Brigades on Line
Appendix 1.

The emission footprint for Australian hardwood harvested wood products and their likely replacement products (Source Ximenes, F. et al. (2016) Carbon stocks and flows in native forests and harvested wood products in SE Australia).