

Enabling high-value timber manufacturing to meet future demand

Essential strategies for an emerging forest nation

Gary Newman and
Christiane Lellig,
Woodknowledge Wales

The Zero Carbon Society of the future will drive substantial demand increases in timber and timber technology. Market forecasts, current issues in timber supply and price volatility cast some doubt that the UK will be able to meet these. Wales is a case in point. Over the course of two years, the Home-Grown Homes project investigated the following questions:

- How could a timber supply chain based on local forestry products support the delivery of low carbon social housing in Wales?
- What transformations are required across the forestry, manufacturing and housing construction sectors to deliver such homes at scale?
- What interventions are needed to have a transformative impact on the supply chain from tree to timber home?

As a result, we are proposing five integrated strategies for how Wales can achieve a just transition to become a high-value forest nation: by adopting a framework for net zero whole life carbon construction; by enabling high-value timber manufacturing and integrate this with demand; by influencing primary wood processing decisions; by increasing forest area and incentivising forest management for high value applications; and by maximising the benefit of these actions to Welsh communities.

From sheep and steel to forest and timber

Wales is not a forest nation. Wales is a sheep, beef and dairy nation and a steel nation. Like many, Wales is the economic country it is, not by political design but by historical accident, and a mix of agricultural and economic policies that have maintained the status quo. To achieve the net zero carbon goals set by Welsh Government a more purposeful approach is required. This is where forestry and timber play a crucial role, and notably manufacturing of timber products.



Valorising our timber resource

The vast majority of Welsh timber grown for industrial applications is used for fencing, packaging and garden products. Only an estimated 4% of Welsh timber is used as construction sawnwood. The returns are insufficient for Welsh landowners to invest in tree planting without the need for grants, and the current markets, although essential, are not delivering on climate change mitigation and social value. The Welsh Government needs to use its role as the regulator and the grower to achieve better outcomes for Wales.

Without investment into forestry, processing and manufacturing, Wales will struggle to meet the increased demand in timber supply of its future net zero carbon society, and it will not be the only UK nation.

For further information check out the Home-Grown Homes Project website <https://woodknowledge.wales/home-grown-homes>

Enabling high-value

Without interventions, the demand for timber products that will flow from decarbonisation strategies to meet net zero whole life carbon requirements will be met almost exclusively by imported products. The lack of added value processing of timber in Wales represents a substantial market failure. Wales produces no structural Glulam, no Cross Laminated Timber, no timber I-beams, no Laminated Veneer Lumber, no Oriented Strand Board and no Wood Fibre Insulation. All these products have two key features in common:

1. They are critical components in high-performance low-carbon buildings that displace steel, plastics, concrete and other high carbon and often toxic materials.
2. They are made from the type and grade of timber that is grown in Wales.

Four types of interventions could help enable high-value manufacturing in Wales.

1 An industrial strategy for wood

As a matter of urgency, forestry and timber should be recognised as a foundational industry in Wales. A green industrial strategy for wood should be established which integrates new and expanding timber growing, processing and manufacturing with the substantial demand within the Welsh Government construction and infrastructure programme. Wales should also aim to supply to England to help address its own chronic shortage of home-grown timber products and to build capacity and scale that is possible in Wales. The proximity to English markets and the availability of labour already attracts timber frame manufacturers to Wales.

manufacturing in Wales

2 Added value manufacturing

Welsh Government should seek to create strategic public private partnerships, or targeted procurement and supply agreements, with Welsh companies and or European producers to establish advanced product manufacturing in Wales to service both the Welsh and wider UK markets. Three of many opportunities are outlined below.

THREE OPPORTUNITIES

Wood fibre insulation factory

Currently, wood fibre insulation has 5% to 10% market share in France and Germany. In the UK, these products represent less than 0.1% of a £1bn+ insulation market. UK customers are being poorly serviced by a European market as demand is outstripping supply and transport costs of such low-density products mean high prices. The retrofit programme is a great opportunity to deliver healthy and low-carbon homes by investing into the healthy and low carbon building material supply chains.

Wood windows factory

Welsh Government and Welsh housing associations pay for the installation of approximately 85,000 new plastic windows every year (estimate) in their retrofit and newbuild programmes. Around 70,000 plastic windows go to landfill each year. Welsh timber window manufacturers cannot supply this market currently as they lack the certification requirements of Secure by Design.

Glulam factory

Glulam is a wood-based structural material which can and is being used as an alternative to structural steel for low and medium rise buildings. Glulam should become the healthy, low carbon structural material of choice for hospitals, schools and other low rise non-domestic buildings.



3 Support the timber frame manufacturing sector

An expanding domestic timber frame sector represents the manufacturing bedrock for the rapid evolution of offsite MMC net zero carbon housing in Wales. However, low margins, partly due to the timber frame sector operating as a subcontractor to main contractors, limit the manufacturers' ability to invest in automation, training and innovation and leaves the sector vulnerable to economic downturns.

Targeted and specific policy interventions should enable manufacturers to be at the heart of housing delivery and Wales proactively be positioned as a

nation of excellence in timber frame manufacturing.

Procurement of timber frame to a national performance specification, as currently developed by Woodknowledge Wales in collaboration with Welsh local authorities and the timber frame sector, could help achieve this. However, securing timber supply at reliable cost is crucial. Allocation of timber supply from NRW and/or local sawmills would allow wood processors and timber frame manufacturers to establish a baseline production at lowest risk to all.

4 Align public building programme to timber

The economic, social and environmental benefits for Wales of using timber in construction and stimulating afforestation can be reflected by adopting a Wood First Policy (see France) and by creating

a 'Charter for Timber' (see Charter for Steel). This would liberate markets for products such as Glulam as a key structural material in non-residential construction.

