

I refer to the recent document entitled the Review of the Security of Energy Supply of Ireland's Electricity and Natural Gas Systems for public consultation and supplementary document entitled Technical Analysis of the Security of Energy Supply of Ireland's Electricity and Natural Gas Systems.

Responding to one of the proposed questions only - Question 8 in Mitigation Options.

Question: Do you have any views on how the mitigation options should be implemented?

Response:

### The Forestry and Forest Products Sector

One of the supply mitigation options outlined is a 450 MW biomass power plant by 2025 and an additional 25 MW by 2030. The document refers to indigenous biomass supply as a potential fuel for this power generation. While the document does not specifically outline the make-up of the biomass feedstock to service this significant demand, wood derived from forestry and forest products sector could be one of the fuels considered.

The volume of woody biomass required to support such an energy demand (estimated to be 5-6 million metres cubed of green wood, based on using and retrofitting the Moneypoint boilers) is well beyond the current and future volume available in Ireland, unless large volumes of wood were diverted from their main current use in construction and other bio-products which would impact the supply of these products necessary for construction, to address the current housing crisis and aim to decarbonise our built environment.

Wood use in Ireland as in most of Europe is primarily used to create and manufacture construction products. Logs are harvested in forests and processed to create products for different uses, as outlined below:

Table 1: Breakdown of the log and wood fibre products from harvesting and processing trees

Product	Description	Use
Sawlog (Top end diameter of logs 14cm+)	Highest quality and value part of log. Majority of the volume of the tree.	Used in sawmill industry to manufacture construction sawn timber and other products.
Pulp (Top end diameter of logs 14cm+)	Top end of the tree and usually poorer quality.	Mostly used as a raw material input for the Irish wood panel manufacturing industry and for some bioenergy uses.
Residual material (Tip-7cm top end diameter of log)	Tip and branches of the tree	Usually left on sites after harvesting. In some cases, removed for bioenergy and other uses.
Sawmill and other processing residues	Residues from the processing of logs and wood fibre in the industry	Mostly used by the Irish wood panel manufacturing industry. (OSB & MDF) and for heat energy and power processing plants and some other bioenergy and farm uses.

The primary processing of sawlogs occurs in our indigenous sawmilling industry. Sawmills process wood for construction, fencing and wood pallet products. All wood waste from this process (sawmill residues in Table 1 above) is used by other companies to manufacture products, including wood panel products such as OSB and MDF for the construction market or for energy or heat for the sawmill sector.

The forest products industry is a well developed rural based employer, c 9,000 employees with a strong customer base in Ireland and significant export markets in the UK, EU and USA. The sector is

one of the true sustainable, circular industries in how it uses all the biomass material. Some residual volumes are available for other uses, including for bioenergy uses.

When wood is harvested in forests there is residual material from this process, which is referred to in Table 1 above, as pulp and residual material. The pulp is the smallest diameter wood from the tops of trees unsuitable for sawmill processing. All this material is used in the manufacture of wood-based panel products and some other smaller uses. The residual material is the remaining smaller branches, needles and so on and is usually left on sites. This material is challenging to collect given its lightweight nature and the potential damage to some soil types in the collection process.

Figure 1: CoFord table on structure of current forest bioeconomy in Ireland

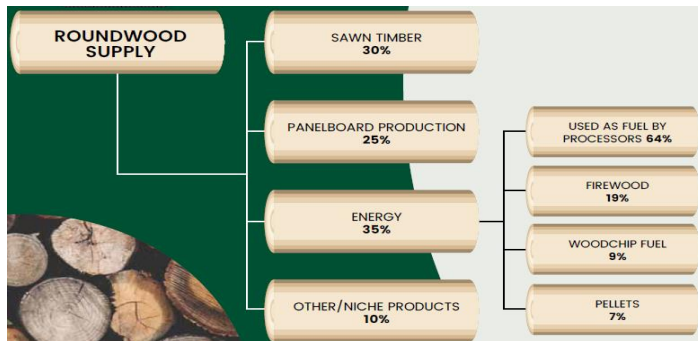


Figure 1 shows how wood flows through the value chain with 100% of the wood fibre utilised. As outlined, some of the wood is used to create energy, mainly to heat and power wood processing facilities, with some volume going to other small bioenergy requirements.

It is important to note that the wood used for energy is residues only from the

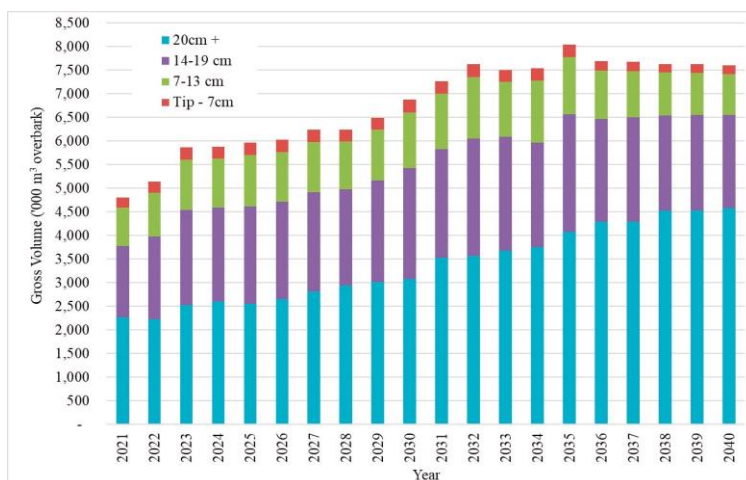
harvesting of logs in the forest or the processing of logs in saw and panel board mills and that today there is little or no surplus wood supply available in the system.

## Wood Supply

Currently in Ireland, as in most of Europe demand exceeds supply of wood available. This is driven by the demand for construction products and in particular the move to sustainable construction methods using timber-based products to decarbonise this sector. Over the last number of years sawmills in Ireland have imported logs from Scotland to supplement their Irish supply to meet demand.

Over the next decade supply of wood in Ireland is forecast to increase as shown in Figure 2 below. This is mainly due to the emergence of supply from private owned forests.

Figure 2: CoFord\* Gross Volume Estimate for the Republic of Ireland



Given the growing demand for wood-based construction products to decarbonise construction in Ireland, Europe and the domestic housing challenge to build 32,000 homes per annum the majority of this emerging volume will be required to meet this demand. Investment in additional capacity to process the wood will take place by national or international wood processing companies given the market demand for these products.

\*CoFord 2022 report, All Ireland Roundwood Production Forecast 2021-2040

There may be residual volumes available for other uses and if they are to be used for energy uses, we need to ensure that they are used in energy systems that optimise their use to avoid wasting this material in inefficient boilers or other heating/power systems.

### **EU Direction on the Use of Wood - The Cascading Principle**

The EU Green Deal, Fit for 55, EU Forestry policy, the upcoming Renewable Energy Directive (RED III) and recent debates in the European parliament promote the use of wood under the “cascade” principle. The principle implies the use of wood material according to a priority based on the added value and carbon storage that can be potentially generated, so raw material from the forests should be preferably used for building, furniture, and other products with long life span capable of storing the biogenic carbon in the products, while bioenergy should preferably derive from the use of waste wood, wood residues or recycled end of life products. The energy use of wood (after recycling opportunities to produce other products have been exhausted) is thus considered as the least valuable option among several uses and should only be considered when no other use is possible, to prevent the release of the biogenic carbon into the atmosphere. This clearly states the direction of travel in how to use this valuable material in a sustainable circular economy with limited use of the material for energy.

While energy companies try to label wood as residual this is in some cases not accurate, as there is little true residual wood in the process that cannot be used to create higher value uses that store the carbon as outlined above.

Under the cascading model wood is used in long life products that are used to displace or substitute fossil fuel-based products. Displacement can be measured as the amount of fossil emissions in tons of carbon that are avoided by using wood over fossil fuel-based products. In a recent report it was found that the average displacement factor calculated for wood use in Ireland today is higher than in other European studies (0.77 tCO<sub>2</sub>e/m<sup>3</sup> compared with 0.5-0.55 in Swedish studies). The main reason is the fact that a high proportion of wood in Ireland is used to develop wood products that displace fossil-based products and that less wood is used for bioenergy (heat/power) purposes (Holmgren, 2021). This point was highlighted further in a recent report (COFORD, 2021) which outlines the impact on emissions from increasing the use of our native wood supply in Irish construction.

While we appreciate the challenges in de-carbonising the heat and power sectors of our economy, such large use of woody biomass for energy does not align with the above policy and direction at EU and member states on the use of wood.


The IEA notes the construction sector as 37% of global emissions and a key industry to be decarbonised. Wood products are one of the key enablers required to meet this challenge. Decarbonising our built environment is a key focus of the European Green Deal and this will require investments across the EU in new forms of sustainable and off-site construction which timber products and timber building systems can help to address due to their environmental, sustainable, and embodied carbon credentials. Specifically, there are challenges faced by the Irish government, as set out in the National Strategic Objectives, which our forestry and forest products sector is well positioned to address:

- The need to drastically reduce embodied carbon in construction in the context of population growth and the need for 550,000 new homes by 2040
- The need to increase forestry cover in Ireland to address climate change
- The need to shift towards sustainable investments

- The need to create viable, long term green jobs, across the island, including rural Ireland

## **Conclusion**

Trees take decades to grow and produce a valuable commodity in wood. These trees sink carbon from the air, which is then stored in wood. This stored carbon must be used to develop long life products that store carbon well into the future to displace/substitute less sustainable higher carbon fossil-based products to help decarbonise our economy. Burning wood and releasing the bio-genic carbon goes completely against these sound sustainable principles and should be the last consideration for this valuable natural resource.

  
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## **References:**

- Holmgren 2021, Fossil displacement and value chain emissions related to primary wood-based products in Ireland.
- COFORD, 2021, Forests and wood products and their importance in climate change mitigation