



Wood Supply and Demand on the Island of Ireland to 2030

**Wood Supply and Demand on the
Island of Ireland to 2030**

COFORD Wood Mobilisation and Forecasting Working Group

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The COFORD Wood Mobilisation and Forecasting Group is a working group of COFORD, The National Council for Forest Research and Development. One of the group’s aims was to update the forecasting system to ensure that the estimates being provided reflect the best available information and practice. The group comprises experts and stakeholders from the forest sector: Chairperson Patrick Murray (Murray Timber Group), Karl Coggins (DAFM), Owen Cooney (Irish Timber Growers Association), Michael Fairgrieve (Forest Service, Department of Department of Agriculture, Environment and Rural Affairs), Daragh Little (VEON), Liam Malone (Coillte), Frances McHugh (Teagasc), Geraldine O’Sullivan (Irish Farmers Association), John Redmond (DAFM), John Ryan (Murray Timber Group) and Secretary Richard Walsh (DAFM).

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Disclaimer

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Impact of Ukraine conflict on energy supply and pricing

The SEAI National Heat Study Report as discussed in this report was published in early 2022, before the war in Ukraine. It therefore does not take into account recent effects of the conflict on energy supply or costs. Likewise, the impact of the conflict is has not been considered in this report.

Interpretation advice

Readers who intend using the forecast for planning or investment purposes are urged to thoroughly review the information provided. It may be advisable in certain cases to engage professional advice.

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Foreword

This report on the supply and demand for wood fibre on the island of Ireland over the medium term to 2030 has been compiled by the Wood Mobilisation and Forecasting Group under the direction of the COFORD Council. It brings together the best available information from the 2021 All Ireland Roundwood Production Forecast, and demand assumptions based on inputs from the wood processing sector, the Sustainable Energy Authority of Ireland (SEAI), the Forest Service of the Northern Ireland Department of Agriculture, Environment and Rural Affairs (DAERA FS), and the GB Department for Business, Energy & Industrial Strategy (BEIS). This report is an updated version of the publication COFORD Supply and Demand on the Island of Ireland to 2025 which was published in 2018.

The COFORD All Ireland Roundwood Production Forecast (2021-2040) projects that the annual potential roundwood supply will increase from 4.7 million cubic metres in 2021 to 7.9 million cubic metres by 2035. While the projected supply is steadily increasing, the supply-demand position shows a continued shortfall in the supply of roundwood to the sawmilling sector, reaching 0.5 million m³ per annum by 2025. This shortfall is likely to be met by imported certified roundwood for processing in Ireland, and the overall projected demand indicates good underlying demand, which, subject to market conditions, offers encouragement to those forest owners who will be bringing sawlog to market over the coming decade. Roundwood converted to structural timber, wood-based panels and other wood products will store carbon and displace extractive, carbon-intensive materials, thereby helping to reduce greenhouse gas emissions.

The use of renewable wood for energy also has a significant role to play over the coming decades in mitigating greenhouse gas emissions, through displacement of fossil fuels, primarily in the heating sector. It also offers an important role in providing a market for first thinnings of forests and final felling residues, with added benefits for forest management and regeneration.

This report will be of interest to all those involved in forest policy and practice, and those considering investments in wood processing and wood energy. The author and the members of the COFORD Wood Mobilisation and Forecasting Group are to be congratulated for their efforts in bringing this publication to fruition.

Eugene Hendrick

Chairman
COFORD

25 October 2022

Abbreviations

BEIS.....GB Department of Department for Business, Energy & Industrial Strategy

CAP.....Common Agricultural Policy

CHP.....combined heat and power

DAERA.....Northern Ireland Department of Agriculture, Environment and Rural Affairs

DAFM.....Department of Agriculture, Food and the Marine

GJ.....gigajoule

GWh.....gigawatt hour

kWh.....kilowatt hour

m³cubic metre

M.....million

MCmoisture content

NINorthern Ireland

NRVnet realisable volume

OB.....overbark

PCRWpost-consumer recovered wood

PJ.....petajoule

RoIRepublic of Ireland

RWE.....roundwood equivalent

SEAI.....Sustainable Energy Authority of Ireland

SRC.....short rotation coppice

toe.....tonne of oil equivalent

TWhterawatt hour

Executive summary

Conventional demand

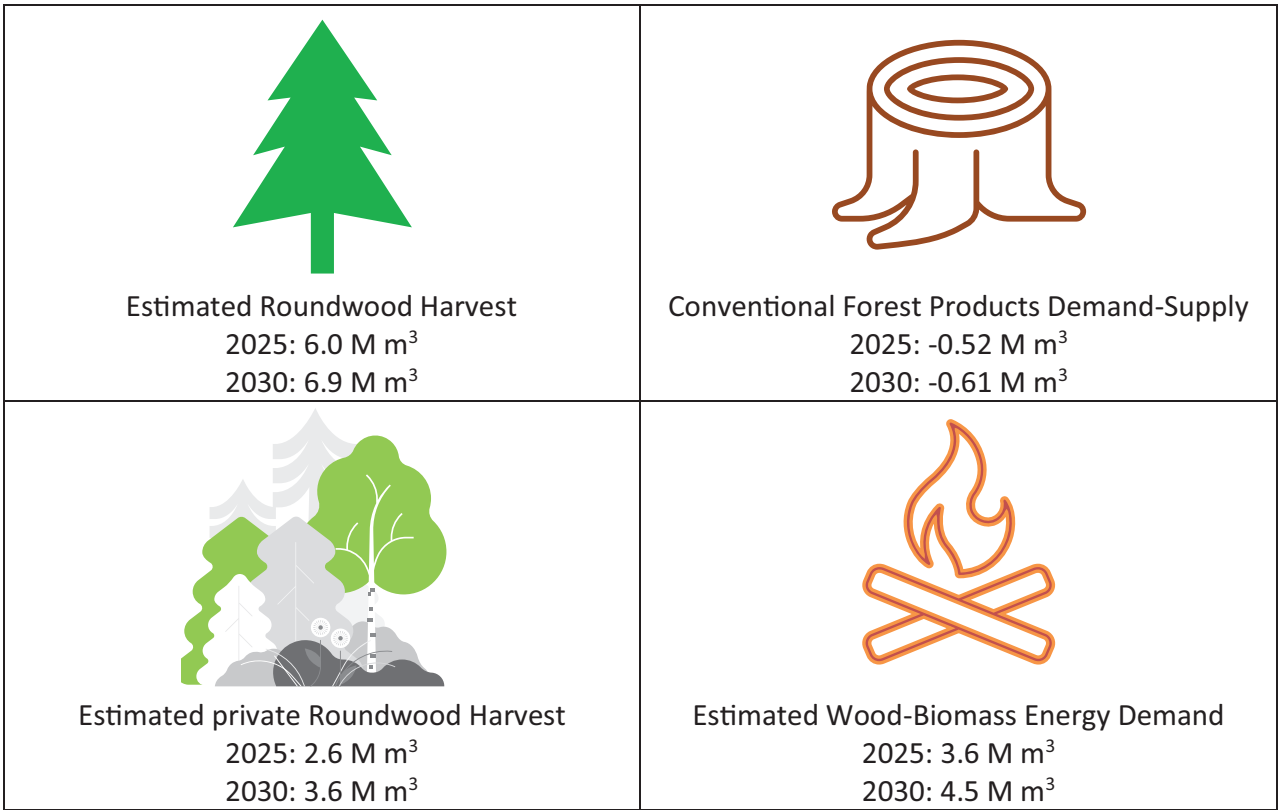
This report considers the demand and supply for wood fibre on the island of Ireland. The estimated roundwood supply is taken from the *COFORD All Ireland Roundwood Production Forecast (2021-2040)*. The estimated demand for wood fibre for process use by the Irish sawmilling and wood-based panel (WBP) sectors (the conventional forest products sector) was estimated by survey in 2021.

The supply-demand position shows a continued shortfall in the supply of roundwood to the sawmilling sector, reaching 0.5 million m³ per annum by 2025. By 2030, this increases to a deficit of 0.6 million m³. It is anticipated that this deficit will be met by roundwood imports. However, imports are not included in the scope of this study. It is assumed that the estimated demand for wood for use by the wood-based panel (WBP) sector will be met in full by indigenous supply in the period up to 2030¹ (Table 1).

Table 1: Estimated supply and demand position for wood fibre from the conventional forest products sector on the island of Ireland (2025-2030).

Sector	2025			2030		
	Rol	NI	Total	Rol	NI	Total
	Million m ³					
Conventional forest products (sawnwood & wood-based panels)	-0.03	-0.49	-0.52	-0.08	-0.53	-0.61

Figure 1: Key all Ireland findings (2025-2030).



¹ The estimated demand for wood fibre from the WBP sector was from a survey of the sector (2025-2030), undertaken by drima marketing in 2021.

Wood-biomass energy case studies

The demand for wood-biomass for the production of energy (2025-2030) is based on a number of sources. This includes the domestic and industrial use of wood-biomass energy. A case study as outlined in this report considers two demand scenarios for the production of wood-biomass energy.

These are:

- Conservative demand scenario:
 - This is a business-as-usual scenario and includes the impact of current policy plans.
- Optimistic demand scenario:
 - This is a more ambitious de-carbonisation scenario that meets net-zero by 2050.

Under the conservative demand scenario presented for wood energy for the island of Ireland, a deficit of 1.6 million m³ and 1.9 million m³ is projected for 2025 and 2030 respectively (Table 2). Over the same period, the optimistic demand scenario shows potential supply deficits of 1.8 million m³ and 2.2 million m³ for 2025 and 2030 respectively (Table 2). While there is scope to sustainably increase the level of harvest over forecast it is likely that part of the supply deficit will be met by wood imports.

Table 2: Estimated supply and demand position for wood fibre for the production of wood-biomass energy demand scenario (2025-2030).

Sector	2025			2030		
	Rol	NI	All island	Rol	NI	All island
Million m ³						
Conservative demand scenario for wood-biomass energy						
Supply position after the demand for sawmills and WBP has been met in full	-0.03	-0.49	-0.52	-0.08	-0.53	-0.61
Wood-based biomass energy	-0.68	-0.39	-1.07	-0.98	-0.33	-1.31
Total	-0.71	-0.88	-1.59	-1.06	-0.86	-1.92
Optimistic demand scenario for wood-biomass energy						
Supply position after the demand for sawmills and WBP has been met in full	-0.03	-0.49	-0.52	-0.08	-0.53	-0.61
Wood-based biomass energy	-0.93	-0.33	-1.26	-1.33	-0.30	-1.63
Total	-0.96	-0.82	-1.78	-1.41	-0.83	-2.24

1. Introduction

The COFORD All Ireland Roundwood Production Forecast (2021-2040) was a collaborative effort by the COFORD Wood Mobilisation and Production Forecasting Group which includes stakeholders from Coillte, the Department of Agriculture, Food and the Marine (DAFM), Forest Industries Ireland (FII), the Irish Farmers Association (IFA), the Irish Timber Growers Association (ITGA), the Northern Ireland Department of Agriculture, Environment and Rural Affairs (DAERA) and Teagasc. This forecast was published by COFORD in mid 2021.

2. Cascade use of wood biomass – an overview

Cascading refers to a resource-efficient and “circular” use of any biomass². In 2017, a report by COFORD found that a vibrant bio-economy in Ireland should ‘embed the cascade use principle for wood resource management and planning in national policy’³.

Forest products are typically considered to have lower environmental impacts than equivalent products made from non-renewable raw materials. Woody biomass is used at present in many different industrial sectors and in many different value chains. These include wood-based products and materials, bio-chemicals, and bio-energy (i.e. power, heat and bio-fuels). Over the next decades, the reduction targets for greenhouse gas (GHG) emissions and the need for a more resource efficient society are expected to further increase the demand for wood fibre in Europe. Woody biomass is, when sustainably grown and harvested, a fully renewable resource and a largely recyclable and reusable material. Only a small fraction of wood products cannot be re-used or used for energy recovered directly⁴.

In 2010, the sustainable supply of roundwood from forests in the EU28 was 721 M m³. It is estimated that European forests can supply an additional 150 M m³ per annum. However, high rates of softwood demand are already causing a scarcity of roundwood in some EU regions.

The cascading use of wood fibre is therefore a relevant and an important means of alleviating the pressure on roundwood supply. Its use can provide a means of meeting the increasing demand for wood fibre. It is estimated that 52 M m³ of forest products are consumed in the EU per annum. Of this, 36.4 M m³ are recovered by collection systems; 16.8 M m³ (32%) are used for material applications; 19.6 M m³ (37%) are used to generate wood-biomass energy and 15.9 M m³ (30%) are disposed of without being recovered.

In 2018, a report by the EU Commission found that resource efficiency can be improved by focusing on uses with the highest economic added value and by favouring a market-based approach. To maximise resource efficiency gains, efforts should be made to keep woody biomass in the material cycle of use for as long as economically viable and technically possible⁵.

In addition, some recent studies have pointed to the unsustainable use of old-growth forest for energy solely. These studies show that net greenhouse gas savings on displacement of fossil fuel can take many decades to arise. This is due to a time lag between the carbon released through harvesting and combustion of wood, and its sequestration back into new biomass. The use of harvesting residues and small dimension thinnings on the other hand have been shown to lead to net climate benefits in periods less than a decade, and in the case of residues within 1-2 years (Kofman and Hendrick 2021)⁶.

² European Commission, Directorate-General for Internal Market, Industry, Entrepreneurship and SMEs, (2019) Guidance on cascading use of biomass with selected good practice examples on woody biomass, Publications Office.

³ COFORD (2017). Growing the Irish Forest Bioeconomy. Department of Agriculture, Food and the Marine, Agriculture House, Kildare Street, Dublin

⁴ Sokka, L., Koponen, K., & Keränen, J. T. (2015). Cascading use of wood in Finland—with comparison to selected EU countries. Research Report VTT.

⁵ Institut Technologique FCBA. 2014. Enhancing the cascade use of wood by integrating an intensified mobilisation of forest resources. European Innovation Partnership on Raw Materials. Available at: <https://ec.europa.eu/growth/tools-databases/eip-raw-materials/en/content/enhancing-cascade-use-wood-integrating-intensified-mobilisation-forest-resources>; accessed 22 June 2022.

⁶ Kofman PD, Hendrick E. 2021. Wood as a Fuel, Volume 1 Fundamentals and standards. Wood Fuel Book Partnership, Dublin

Increasing the use of woody biomass for energy and in long-lived wood products can be a tool in the transition to a low-carbon economy. By using woody biomass arising throughout the forest life cycle, recycling carbon displaces fossil fuels, and is stored in wood products over extended periods of time. In addition, the cascading use of wood biomass increases the availability of renewable materials that in turn can displace energy intensive products.

In relation to wood-biomass energy, cascading use of wood fibre brings a higher economic return. This means that the same wood fibre resources are used sequentially: first (and possibly repeatedly) for material applications and then for subsequent energy applications⁷.

3. Forecast methodology

The manner in which this forecast was undertaken is discussed in detail in the COFORD publication *All- Ireland Roundwood Production Forecast 2021-2040 - Methodology*⁸.

3.1 Estimating product outturn

The COFORD Roundwood Production Forecast (2021-2040) provides an estimate of roundwood harvest by assortment class⁹, but not by product class (Table 3)¹⁰.

Table 3: Net realisable volume (NRV)¹¹ roundwood forecast for the island of Ireland by assortment class and forest owner (2025-2030).

Year	Private RoI				Private NI				Coillte			
	Tip-7cm	7-13cm	14-19cm	20cm +	Tip-7cm	7-13cm	14-19cm	20cm +	Tip-7cm	7-13cm	14-19cm	20cm +
2025	89	433	958	1,081	1	3	7	14	145	538	924	1,294
2030	115	603	1,375	1,521	1	7	12	27	124	449	764	1,347

Year	DAERA FS				Total				All
	Tip-7cm	7-13cm	14-19cm	20cm +	Tip-7cm	7-13cm	14-19cm	20cm +	
2025	12	68	168	235	246	1,042	2,058	2,642	5,988
2030	12	62	160	322	252	1,121	2,311	3,226	6,910

The product classes, as outlined in Table 4, used the same % of the NRV forecast (for 2025) as outlined on page 3 of the COFORD Wood Supply and Demand Report (2020-2025). This approach is outlined in detail in Appendix A of this report. The percentages as in Table 4 were used to determine the product output in this study (Table 5)¹².

Table 4: Allocation of NRV forecast used to determine the product outturn in the Republic of Ireland and Northern Ireland (2025-2030).

Product	RoI	NI
	% of NRV forecast	
Pulpwood and stakewood	33.2	26.8
Sawlog	59.8	63.7

⁷ COFFI72, (2015), Concept of the cascade use of wood and the related reporting. Available at: <https://unece.org/fileadmin/DAM/timber/meetings/20141118/presentations/24-steierer.pdf>; accessed 22 June 2022.

⁸ CofordBook2ForecastMethodology011121.pdf

⁹ Assortment classes are by the top diameter classes: tip-7cm; 7-13cm; 14-19 cm and 20 cm +

¹⁰ Product class refers to the end use for which the roundwood is being harvested i.e. sawlog, stakewood and pulpwood

¹¹ Data taken from Table 5 of the COFORD All Ireland Roundwood Production Forecast (2021-2040)

¹² These figures add to 93% for the Republic of Ireland and 90.5% for Northern Ireland. The balance is firewood, which is outside the remit of this report.

Table 5: Estimation of product assortment from forecasted domestic roundwood harvest by market in 2025 and 2030 (excluding firewood).

Item	Unit	Calculation	Republic of Ireland		Northern Ireland		All island	
			2025	2030	2025	2030	2025	2030
1) Net realisable (NRV) roundwood forecast	M m ³ OB	From Table 3	5.23	6.06	0.50	0.59	5.73	6.65
2) Estimated proportion of pulpwood and stakewood in forecast	%	From Table 4	33.2	33.2	26.8	26.8	32.6	32.6
Estimated volume of pulpwood and stakewood ¹³	M m ³ OB	1*(2/100)	1.74	2.01	0.13	0.16	1.87	2.17
of which is pulpwood	%		86	86	46	46	84	84
of which is stakewood	%		14	14	54	54	16	16
3) All island estimated proportion of sawlog in forecast	%	From Table 4	59.8	59.8	63.7	63.7	60.2	60.2
Estimated volume of sawlog	M m ³ OB	1*(3/100)	3.13	3.62	0.32	0.38	3.45	4.00

3.2 Estimating sawmill demand for roundwood for process use

The sawlog, pulpwood, and co-product (residue) demand (for direct conversion to product by the sawmill and wood-based panel (WBP) sectors) was estimated by a written survey undertaken in mid 2021. Energy demand estimates were provided by the SEAI for the RoI and by the GB Department of Department for Business, Energy & Industrial Strategy (BEIS) for NI. The methodologies are now described in further detail.

In 2018, sawmill roundwood intake in the Republic of Ireland was estimated to be 2.25 M m³, which was converted to 1.01 M m³ of sawn timber and 0.15 M m³ of round stakes.

The sawmills as shown in Table 6 provided data the drima marketing survey to ascertain their expected roundwood demand for process use to 2030. Using the results of this survey, the future demand for roundwood (i.e. stakewood and sawlog) in 2025 and 2030 was estimated. The use of wood residues to produce wood-biomass energy was excluded from this survey¹⁴. The future demand estimate includes some 14 smaller mills not listed in Table 6. These were taken to account for ca 10% future roundwood intake. This was based on industry expert opinion from a number of sources.

Table 6: Sawmills surveyed for the COFORD Supply and Demand Report.

Republic of Ireland	Northern Ireland
Coolrain Sawmills, Coolrain, Co Laois ¹⁵	A Diamond & Son, Coleraine, Co Derry
ECC Timber, Corr na Móna, Co Galway	Balcas Timber, Enniskillen, Co Fermanagh ¹⁶
Glennon Bros. Fermoy, Co Cork and Longford, Co Longford	Drenagh Sawmills, Limavady, Co Derry
GP Wood, Enniskeane, Co Cork	
Laois Sawmills, Portlaoise, Co Laois	
Murray Timber Group (MTG), Ballygar, Co Galway and Ballon, Co Carlow	
Woodfab Timber, Aughrim, Co Wicklow	

Over the period 2025-2030, the estimated demand for roundwood (for process use) by sawmills on the island of Ireland increases by 16% from 4.3 million m³ to 5.0 million m³ (Table 7). The estimated level of demand for 2025 shows an increase of 3.6% (by volume) over that which was reported in the previous COFORD Roundwood Supply and Demand Report (Table 7)¹⁷.

¹³ This is for use by the sawmill, wood-based panel (WBP) and wood-biomass energy sectors.

¹⁴ This data is included in the wood-biomass data as provided by SEAI. This is discussed in section 4.0 of this report.

¹⁵ In November 2020, CJ Sheeran acquired Coolrain Sawmills

¹⁶ In October 2021, Balcas was acquired by Glennon Bros.

¹⁷ The use of wood-biomass energy is discussed in the case study on wood-biomass energy. This is contained in section 4.0 of this report.

Table 7: Estimated supply and demand balance for sawmills on the island of Ireland (2025-2030).

Item	2025							2030						
	RoI			NI			All island total	RoI			NI			All island total
	St	S	Total	St	S	Total		St	S	Total	St	S	Total	
M m ³														
Estimated roundwood supply ¹⁸														
Sawlog		3.13	3.13		0.32	0.32	3.45		3.62	3.62		0.38	0.38	4.00
Stakewood ¹⁹	0.24		0.24	0.06		0.06	0.30	0.28		0.28	0.07		0.07	0.35
Total	0.24	3.13	3.37	0.06	0.32	0.38	3.75	0.28	3.62	3.90	0.07	0.38	0.45	4.35
Estimated roundwood demand														
Large sawmills	0.25	2.84	3.09	0.18	0.66	0.84	3.93	0.29	3.33	3.62	0.20	0.74	0.94	4.56
Small sawmills	0.07	0.24	0.31	0.03		0.03	0.34	0.08	0.28	0.36	0.04		0.04	0.40
Total	0.32	3.08	3.40	0.21	0.66	0.87	4.27	0.37	3.61	3.98	0.24	0.74	0.98	4.96
Demand-supply ²⁰	-0.08	0.05	-0.03	-0.15	-0.34	-0.49	-0.52	-0.09	0.01	-0.08	-0.17	-0.36	-0.53	-0.61

3.3 Estimating the market for pulpwood

Depending on market price, geographical location and other factors, pulpwood-sized roundwood from the private forest estate is used for the production of WBP or as wood energy. Most Coillte pulpwood is allocated to the manufacture of WBP. The same assumption was used for this report. Additional pulpwood supply over and above that allocated by Coillte was allocated first to the manufacture of WBP and after that demand was satisfied, to wood energy use. This is based on a working assumption that any additional pulpwood demand from the WBP mills will be satisfied by private sector supply. In reality, prevailing market price will strongly influence where wood supplies are used. The largest and most uncertain element of future supply/demand is wood energy. Increases in demand are likely to be driven mostly by policies and measures such as the Support Scheme for Renewable Heat and any changes to combined heat and power (CHP) supports. Oil and fossil fuel prices are also an important driver, but they are of course highly volatile and uncertain.

3.4 Estimating demand for wood fibre for process use by the wood-based-panel sector

In 2018, 0.81 M m³ of wood-based panels (WBP) were produced from an intake of 1.43 M m³ of wood fibre. In 2021, the three wood-based panel (WBP) mills in operation in Ireland (Table 8) were surveyed by drima marketing to ascertain their level of wood fibre demand for process use. The use of wood fibre to generate wood-biomass energy was excluded from this survey²¹. All three WBP mills replied to the demand survey. There is no WBP mill in Northern Ireland.

Table 8: Wood-based panel mills who were surveyed for the COFORD Supply and Demand Report by name and location.

WBP mill	Location
Masonite Ireland,	Carrick-on-Shannon, Co Leitrim
Medite Europe,	Clonmel, Co Tipperary
Smartply Europe,	Belview Port, Waterford

The results of the survey which was undertaken by drima marketing indicates that the demand from the WBP sector for wood fibre for process use over the period 2025-2030 remains constant at 1.88 M m³ (Table 9 and Figure 2).

¹⁸ St: stakewood; S: sawlog

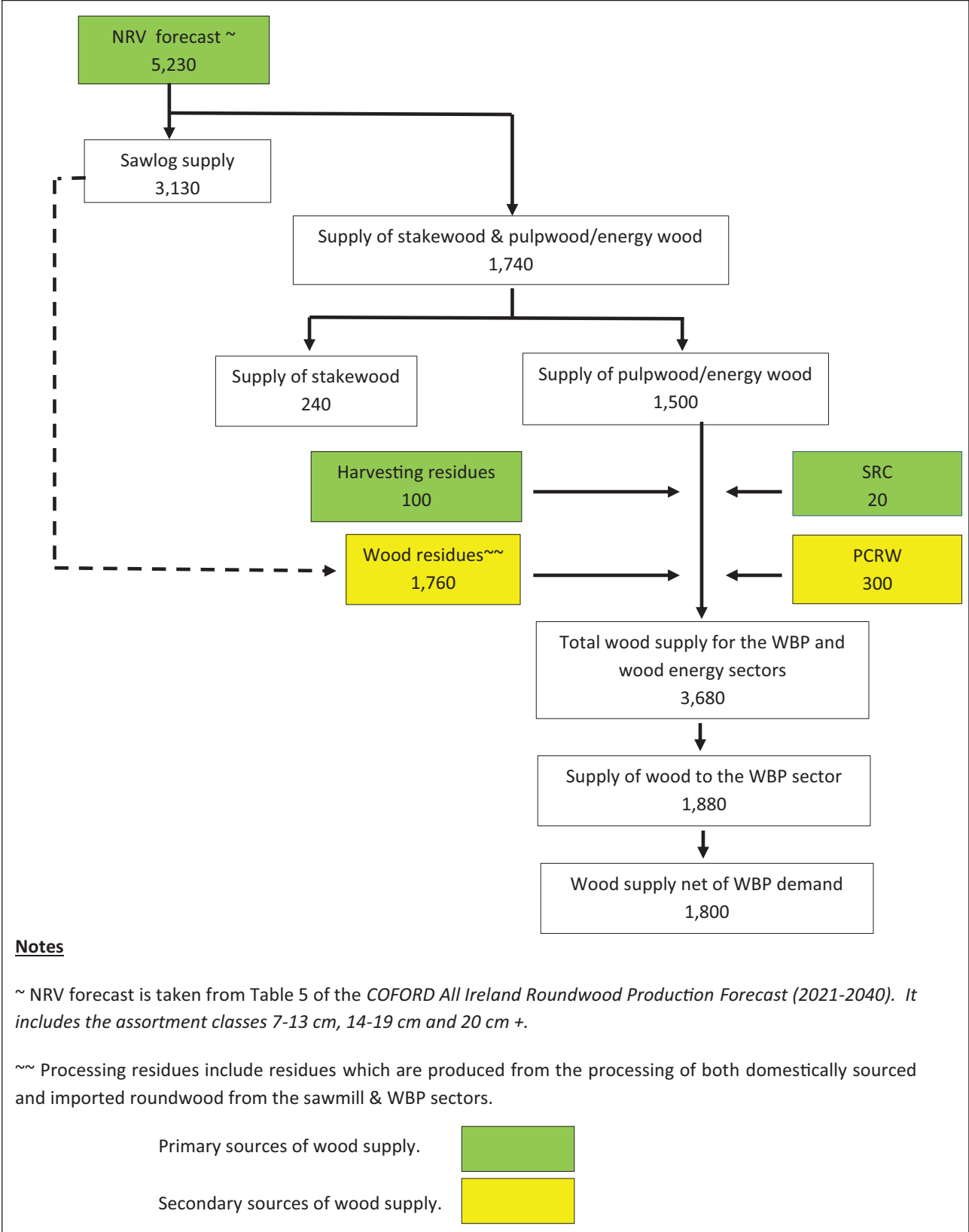
¹⁹ The estimated supply of stakewood is taken to same percentage of pulpwood + stakewood as used in the previous edition of this report (2018)

²⁰ This is domestic roundwood supply less demand. Imported roundwood is excluded from this estimate.

²¹ This data is included in the wood-biomass data as provided by SEAI. This is discussed in section 4.0 of this report.

The underlying assumption which is included in this analysis is that the demand for wood fibre for process use by the WBP sector will be met in full²². An illustrative example of the forecasted wood supply flow for 2025 through the sawlog, wood-based panel and wood energy demand points, as calculated in previous Sections is provided in Figure 2.

Figure 2: Forecasted flow of wood supply in 2025 in the Republic of Ireland (000 m³ OB).



²² The demand for wood-biomass for energy use is detailed in the case study on wood-biomass energy. This is contained in section 4.0 of this report.

The estimated supply of wood fibre for the WBP and other sectors is outlined in Table 9. Data on the volume of sawmill and WBP residues which are used to generate electricity and process heat are contained within the case study on wood-biomass energy which is contained in section 4.0 of this report.

Table 9: Estimated supply of wood fibre for the WBP and other end uses in the RoI and NI (2025-2030).

Category	Item	2025			2030		
		Rol	NI	Total	Rol	NI	Total
Million m ³							
Supply of roundwood for the sawmilling sector	1) Net realisable (NRV) roundwood forecast (From Table 5)	5.23	0.50	5.73	6.06	0.59	6.65
	2) Estimated supply of sawlog (From Table 5)	3.13	0.32	3.45	3.62	0.38	4.00
	3) Estimated supply of roundwood for stakewood and pulpwood/energy wood (From Table 5)	1.74	0.13	1.87	2.01	0.16	2.17
	4) Estimated supply of stakewood[1] (From Table 5)	0.24	0.06	0.30	0.28	0.07	0.35
Supply for WBP and wood energy	5) Estimated supply of roundwood for WBP and wood energy (3-4)	1.50	0.07	1.57	1.73	0.09	1.82
	Harvesting residues (tip-7 cm and clearfell residues) ²³	0.10		0.10	0.15		0.15
	Post consumer recovered wood ²⁴	0.30	0.06	0.36	0.30	0.06	0.36
Wood residues produced during primary wood processing							
	Sawmill residues ²⁵	1.60	0.36	1.96	1.88	0.40	2.28
	WBP residues	0.16		0.16	0.16		0.16
	Short rotation willow coppice	0.02		0.02	0.02		0.02
	Estimated total wood supply for WBP and other uses	3.68	0.49	4.17	4.24	0.55	4.79
Estimated demand from the WBP sector for wood fibre for process use		1.88		1.88	1.88		1.88
Wood supply for other uses		1.80	0.49	2.29	2.36	0.55	2.91

3.5 Other uses of wood fibre

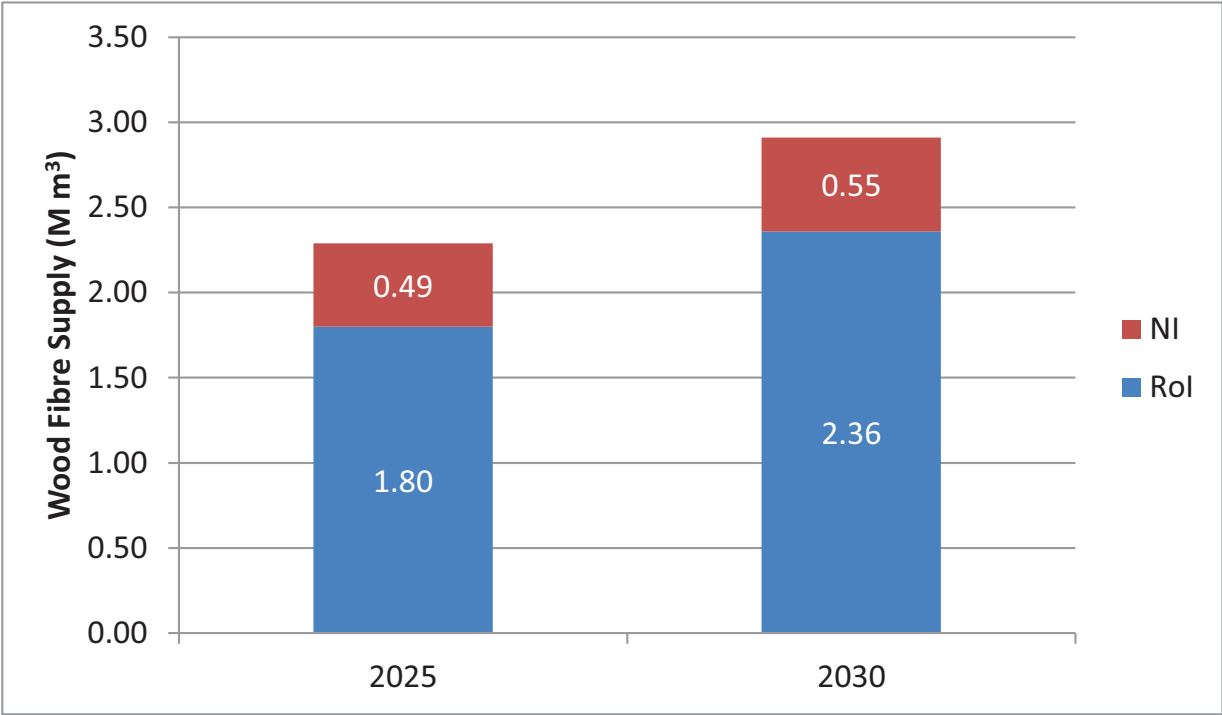
The potential supply of wood fibre for other uses (2025-2030) ranges from 2.29 M m³ in 2025 to 2.91 M m³ in 2030 (Figure 3). Case studies are presented in section 4.0 of this report on the potential for the generation of wood-biomass energy in the Republic of Ireland and in Northern Ireland. However, other uses may be made of this fibre resource. These may include wood-based panels, engineered wood products (EWP) and/or other products. However, the potential for these products is outside the scope of this study.

²³ Data on harvest residues is taken from Table 5 of the CofordAllIrelandRoundwoodBookREVISED150721-1.pdf

²⁴ Source: COFORD Woodflow Series

²⁵ This includes residues which arise from the processing of imported roundwood.

Figure 3: Estimated supply of wood fibre for other uses in M m³ (2025-2030).



4. Wood-based biomass energy case studies

4.1 The estimated demand for wood-biomass energy in the Republic of Ireland (2025-2030)

The projected demand for wood-biomass energy in the Republic of Ireland (2025-2030) was provided from a National Heat Study which was undertaken by the Sustainability Energy Authority of Ireland (SEAI) in 2021 (Table 10). This shows the estimated demand for wood-biomass energy ranges from 2.48 M m³ in 2025 (conservative demand scenario) to 3.69 M m³ in 2030 (optimistic demand scenario).

The SEAI national heat study split estimated demand for wood-biomass energy into two demand scenarios:

- Conservative demand scenario for wood-biomass energy:
 - This is a business-as-usual scenario and includes the impact of current policy plans.
 - The estimated supply-demand position for wood fibre for this demand scenario range from -0.7 M m³ (2025) to -0.9 M m³ (2030) (Table 11).
- Optimistic demand scenario for wood-biomass energy:
 - This is a more ambitious de-carbonisation scenario that meets net-zero by 2050.
 - The estimated supply-demand position for wood fibre for this demand scenario range from -1.0 M m³ (2025) to -1.3 M m³ (2030) (Table 11).

The data as presented in Tables 10-11 are scenario-based demand projections only and should not be interpreted as forecasts. The scale of biomass use is dependent on a range of variables with inbuilt uncertainty. Due to the reduction in the estimated demand for wood-biomass heat (over the previous SEAI study²⁶), the supply-demand position for wood-biomass energy has changed compared with projection in the COFORD Wood Supply and Demand Report (2018) and as reported here.

²⁶ This SEAI study was reported in the COFORD Wood Supply and Demand Report (2018)

Table 10: Estimated demand for wood-biomass energy in the Republic of Ireland by demand scenario and fuel source (2025-2030).

Unit	2025						2030					
	Forest	Sawmill	PCRW	Pellet imports	Willow SRC	Total	Forest	Sawmill	PCRW	Pellet imports	Willow SRC	Total
Conservative demand scenario for wood-biomass energy												
GWh ²⁷	1,266	1,874	193	629	15	3,963	1,598	2,432	313	989	15	5,331
PJ ²⁸	4.56	6.75	0.69	2.27	0.05	14.28	5.76	8.76	1.13	3.56	0.05	19.21
M m ³	0.79	1.17	0.12	0.39	0.01	2.48	1.00	1.52	0.20	0.62	0.01	3.34
Optimistic demand scenario for wood-biomass energy												
GWh	1,477	1,974	152	629	122	4,355	1,604	2,441	313	989	545	5,892
PJ	5.32	7.11	0.55	2.27	0.44	15.69	5.78	8.79	1.13	3.56	1.96	21.23
M m ³	0.93	1.24	0.10	0.39	0.08	2.73	1.00	1.53	0.20	0.62	0.34	3.69

Table 11: Estimated supply-demand for wood-biomass energy in the Republic of Ireland by demand scenario and fuel source (2025-2030).

Year and item	Conservative demand scenario	Optimistic demand scenario
	M m ³	
2025		
Estimated demand	2.48	2.73
Estimated supply	1.80	1.80
Estimated demand-supply	-0.68	-0.93
2030		
Estimated demand	3.34	3.69
Estimated supply	2.36	2.36
Estimated demand-supply	-0.98	-1.33

4.2 The estimated demand for wood-biomass energy in Northern Ireland (2025-2030)

A search of Government Agencies in Northern Ireland and in the United Kingdom (UK) revealed that a wood-biomass forecast (for energy production) does not currently exist for Northern Ireland for the period 2021-2030. The following were contacted for this report: Action Renewables (NI), Department of Agriculture, Environment and Rural Affairs (DAERA)/Forest Service (Northern Ireland), the Forestry Commission (GB), the GB Department for Business, Energy & Industrial Strategy (BEIS) and Ricardo (UK).

Moreover, projections for increases in the demand for wood-biomass heat in Northern Ireland have been severely constrained following the withdrawal of the renewable heat incentive (RHI) subsidy (industry expert opinion).

It was therefore decided to build a wood-biomass forecast for Northern Ireland from first principles. This was undertaken in a number of stages as follows:

- DAERA provided data on the volume of roundwood which was used to produce wood-biomass energy in Northern Ireland in 2020.
- In 2019, BEIS produced a forecast of the estimated demand for renewable energy in the UK (2019-2040). This was used to scale a forecast of the demand for wood-biomass energy in Northern Ireland in 2025 and 2030.
- 2020 data was taken as the base year.
- The demand for wood-biomass energy was estimated by multiplying the demand for wood-biomass energy in the base year (i.e. 2020) times the expected growth in demand for renewable energy in the UK over the period 2020-2025 and 2020-2030.
- This analysis was undertaken under a conservative and an optimistic outlook.
- The results of this analysis are shown in Table 12.

²⁷ GWh = Gigawatt hours

²⁸ 1 PJ = 1,000,000 GJ

Irrespective of the demand scenario, over the period 2025-2030, the forecast supply-demand position for wood-biomass energy in Northern Ireland remains largely unchanged at 0.3 M m³ to 0.39 M m³ (Table 12).

The forecasted demand for wood-biomass energy in Northern Ireland (2025) (Table 12) is 27% less (conservative) and 40% less (optimistic) than the 2025 estimate for wood-biomass energy which was produced for the COFORD Roundwood Supply and Demand Report (2018). This decline is largely due to the reduction in forecasted increases in the demand for wood-biomass for heat, as a result of the cancellation of the renewable heat incentive (RHI) scheme in Northern Ireland in 2021/2022²⁹.

Table 12: Estimated demand and supply position for wood-based biomass for energy production in Northern Ireland by scenario type (2020-2030).

Item	Unit	Conservative scenario	Optimistic scenario
2020			
Baseline demand	M m ³	0.76	0.76
Expected growth in the demand for wood-biomass energy (2020-2025)			
Estimated % change	%	+16	+15
Estimated demand	M m ³	0.88	0.88
Estimated supply	M m ³	0.49	0.55
Estimated demand-supply	M m ³	-0.39	-0.33
Expected growth in the demand for wood-biomass energy (2020-2030)			
Estimated % change	%	+8	+11
Estimated demand	M m ³	0.82	0.85
Estimated supply	M m ³	0.49	0.55
Estimated demand-supply	M m ³	-0.33	-0.30

5. Summary

5.1 Estimated supply and demand for wood fibre on the island of Ireland by end use and scenario type (2025-2030)

5.1.1 Conventional demand

The estimated demand for wood fibre on the island of Ireland (2025-2030) from the conventional forest products sector is in Table 13, while the supply less demand position for wood fibre (over the same period) is in Table 14. This analysis assumes that the demand for wood fibre for process use by the WBP sector is met in full.

This shows that the supply less demand for wood fibre (for process use) ranges from -0.52 M m³ in 2025 to -0.60 M m³ in 2030 (Table 14).

The sawmill sector in Northern Ireland has traditionally imported a significant volume of roundwood. This supply is expected to continue over the period 2025-2030. However, this resource falls outside the scope of this report and is therefore not considered here.

²⁹ The Domestic RHI is due to close to new applicants on 31 March 2022. Once commissioned, payments will be made for 7 years. The non-domestic RHI closed to new applicants on 31 March 2021.

Table 13: Estimated demand for wood fibre from the conventional forest products sector on the island of Ireland (2025-2030).

Demand from the conventional forest products sector for wood fibre	2025			2030		
	Rol	NI	Total	Rol	NI	Total
	M m ³					
Sawmill	3.40	0.87	4.27	3.98	0.98	4.96
Wood-based panels	1.88		1.88	1.88		1.88
Total	5.28	0.87	6.15	5.86	0.98	6.84

Table 14: Estimated supply and demand position for wood fibre on the island of Ireland from the conventional forest products sector on the island of Ireland (2025-2030).

Sector	2025			2030		
	Rol	NI	Total	Rol	NI	Total
	M m ³					
Supply	3.37	0.38	3.75	3.90	0.45	4.35
Demand	3.40	0.87	4.27	3.98	0.98	4.96
Overall balance	-0.03	-0.49	-0.52	-0.08	-0.53	-0.61

5.1.2 Estimated demand for wood-biomass energy

The projected demand for wood fibre on the island of Ireland for the production of wood-biomass energy is in Table 15.

Over the period 2025-2030, the supply-demand position for wood-biomass on the island of Ireland ranges from a deficit of 1.59 M m³ to 1.92 M m³ for conservative demand scenario for wood-biomass energy and a deficit of 1.78 M m³ to 2.24 M m³ (optimistic demand scenario for wood-biomass energy) (Table 16).

Table 15: Estimated demand for wood fibre on the island of Ireland for the production of wood-biomass energy by market and demand scenario (2025-2030).

Sector	2025			2030		
	Rol	NI	Total	Rol	NI	Total
	M m ³					
Conservative demand scenario for wood-biomass energy						
Wood-based biomass energy	2.48	0.88	3.36	3.34	0.82	4.16
Optimistic demand scenario for wood-biomass energy						
Wood-based biomass energy	2.73	0.88	3.61	3.69	0.85	4.54

Table 16: Estimated supply and demand position for wood fibre on the island of Ireland by end use and demand scenario (2025-2030).

Sector	2025			2030		
	Rol	NI	Total	Rol	NI	Total
M m ³						
Conservative demand scenario for wood-biomass energy						
Supply position after the demand for sawmills and WBP has been met in full	-0.03	-0.49	-0.52	-0.08	-0.53	-0.61
Wood-based biomass energy	-0.68	-0.39	-1.06	-0.98	-0.33	-1.31
Total	-0.71	-0.88	-1.59	-1.07	-0.86	-1.92
Optimistic demand scenario for wood-biomass energy						
Supply position after the demand for sawmills and WBP has been met in full	-0.03	-0.49	-0.52	-0.08	-0.53	-0.61
Wood-based biomass energy	-0.93	-0.33	-1.26	-1.33	-0.30	-1.63
Total	-0.96	-0.82	-1.78	-1.41	-0.83	-2.24

6. Appendices

6.1 Appendix A: Determination of product outcomes

Top diameter categories do not translate directly to product assortments, as there will always be pulp/wood energy recovery from poorly formed sawlog-sized stems. For that reason, and in order to compare forecasted supply with sawlog demand estimated from the survey, it was necessary to derive an estimate of product assortment recovery using historic trends and applying the estimate to future harvest. The estimation process is now described³⁰.

Republic of Ireland

Domestic ROI roundwood harvest out-turn by product assortment for each year over the period 2010-2016 was first derived from the 2016 COFORD Connects Woodflow³¹, and is presented in Table 17. The averages from Table 18 were then used to allocate the forecasted (top diameter) harvest to product assortments.

A final adjustment was made to account for the fact that a higher proportion of the forecasted harvest in 2020 and 2025 is in 14+ cm sawlog-sized material compared with the base year of 2016:

- The increase in the 14+ cm category was from 73.23% of the forecasted NRV in 2016 to 75.66% in 2020, an increase of 2.43%, bringing the percentage sawlog from 53.9% to 56.3%
- The corresponding figure for 2025 was 79.17%, an increase of 5.94% on 2016, bringing the percentage sawlog available to 59.8%.

Northern Ireland

The Northern Ireland Forest Service separately provided historic product out-turn from roundwood harvest for the period 2010-2016³², which was used to determine a sawlog and pulpwood out-turn for domestic roundwood harvest in NI over the period 2010-2016.

Product assortment out-turn was then calculated using the NRV volumes from Table 17 in the 2016-2035 forecast and applying the averages in Table 18. It was assumed that the expected percentage outturn for sawlog and pulpwood/stakewood for NI in 2020 and 2025 would remain constant at 63.7% and 26.8%, respectively, of the NRV forecast. Firewood production in NI is taken as 9.5% of the NRV harvest.

³⁰ Source: 3COFORDWoodSupplyandDemand121218.pdf

³¹ <http://www.coford.ie/publications/cofordconnects/>

³² Personal communication, 7/2017.

Table 17: Annual and average domestic roundwood harvest outturn by product assortment over the period 2010-2016 from the COFORD Connects Woodflow (2010-2016).

Harvesting outturn % ³³	2010			2011			2012			2013			2014			2015			2016		
	Rol ³⁴	NI ³⁵	Total	Rol	NI	Total	Rol	NI	Total	Rol	NI	Total	Rol	NI	Total	Rol	NI	Total	Rol	NI	Total
	% of domestic harvest																				
Pulpwood/ stakewood	38.7	30.0	38.9	39.8	26.0	39.8	37.1	26.0	37.5	39.2	27.0	39.3	38.4	26.0	38.6	39.4	26.0	39.5	38.8	26.8	38.9
Sawlog	54.4	60.0	53.7	52.8	64.0	52.4	55.0	64.0	54.3	53.4	65.0	53.0	54.3	65.0	53.8	53.6	64.0	53.2	53.9	63.7	53.4
Firewood	6.9	10.0	7.4	7.4	10.0	7.8	7.9	10.0	8.2	7.4	8.0	7.7	7.3	9.0	7.6	7.0	10.0	7.3	7.3	9.5	7.7
Total	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

Table 18: Estimated harvesting out-turn by product and market (2010-2016).

Harvesting outturn %	Average (2010-2016)		
	Rol	NI	Total
	% of domestic harvest		
Pulpwood/ stakewood	38.8	26.8	38.9
Sawlog	53.9	63.7	53.4
Firewood	7.3	9.5	7.7
Total	100.0	100.0	100.0

6.2 Appendix B: Quality checks

In 2025, the estimated demand for wood fibre (for process use) by the conventional forest products sector on the island of Ireland is 6.14 M m³. This shows an increase of 4.1% (by volume) over that which was estimated for 2025 in the previous COFORD Roundwood Supply and Demand Report (Table 19).

Table 19: Estimated demand for wood fibre by the primary forest products sector on the island of Ireland (2025) by report date and % change in volume demand.

Sector	2025		
	Rol	NI	Total
M m ³			
COFORD Supply and Demand Report (2022)			
Sawmill	3.39	0.87	4.26
WBP	1.88		1.88
Total	5.27	0.87	6.14
COFORD Supply and Demand Report (2018)			
Sawmill	3.41	0.71	4.12
WBP	1.78		1.78
Total	5.19	0.71	5.90
Percentage change in the demand for wood fibre (by volume) over the COFORD Supply and Demand Report (2018).			
Sawmill	-0.6	22.5	3.4
WBP	5.6		5.6
Total	1.5	22.5	4.1

³³ Due to rounding, not all totals sum to 100.0.

³⁴ Data for Rol is from the COFORD Connects Woodflow Series; <http://www.coford.ie/publications/cofordconnects/>

³⁵ Data for Northern Ireland was provided by the Northern Ireland Forest Service (7/2017).

7. References

Department for Business, Energy & Industrial Strategy (BEIS) Updated Energy & Emissions Projections (2019)

Henry Phillips, Myles McDonagh, Michael Fairgrieve, Liam Malone and John Redmond; COFORD All Ireland Roundwood Production Forecast (2021-2040)

Henry Phillips, Myles McDonagh, Michael Fairgrieve, Liam Malone and John Redmond; COFORD All Ireland Roundwood Production Forecast (2021-2040) methodology

Knaggs, G, O'Driscoll E; COFORD Connects Woodflows. (2011-2018) COFORD/Department of Agriculture, Food and the Marine (DAFM), Dublin.

Knaggs, G, O'Driscoll E; Woodflow 2018; Gordon; COFORD, Department of Agriculture, Food and the Marine (2019)



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