

An overview of wood fibre use in Ireland (2015)

Data sources: The data contained in this overview have been compiled from the UNECE Forestry and Timber Market Statement for Ireland (2016), the UNECE Joint Wood Energy Enquiry (JWEE) for Ireland (2016) and from the EUROSTAT Joint Forest Sector Questionnaire (JFSQ) for Ireland (2016). These reports were compiled on behalf of the Department of Agriculture, Food and the Marine by drima marketing.

Figure 1 has been provided to ITGA by COFORD, Department of Agriculture, Food and the Marine. It is taken from the annual Woodflow published by COFORD, which is based on annual data provided to the Joint Forest Sector Questionnaire (JFSQ) and the annual Joint Wood Energy Enquiry (JWEE). The figure and the accompanying data are copyright to the Department of Agriculture, Food and the Marine. Further reproduction of the primary data is welcome, to be accompanied by an acknowledgement as to the primary DAFM source. The Woodflow can be found at www.coford.ie. The roundwood production and trade data series can be downloaded from: <http://faostat.fao.org/beta/en/#data/FO>

Private forest estate

Ireland's forest cover, at 10.7% of the land area, is among the lowest in Europe. In order to provide for a sustained wood harvest and to provide for climate change mitigation and other public goods, the policy aim is to increase forest cover to 18% by mid century.

€114 million in funding for capital and current expenditure was allocated for the overall forestry programme in 2016. This was to meet commitments under previous forestry programmes along with schemes approved under the Forestry Programme 2014-2020. The programme aims to plant 6,000 ha of new forests in 2016, increasing to 8,310 ha in 2020.



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Much of the forest area planted has entered or is entering the thinning phase, but 42% is still less than 25 years old. The level of afforestation over the period 2011-2015 is shown in Table 1.

Irish roundwood harvest

In 2015, 3.07 million cubic metres of roundwood was available for processing in the Republic of Ireland, a 3.8% increase on 2014 (Table 2). This is the highest roundwood harvest since records began in 1961.

Table 1: Area of new forests planted in the Republic of Ireland by area and by ownership in ha (2011-2015).

Year	State	Private	Total
2011	62	6,591	6,653
2012	60	6,592	6,652
2013	3	6,249	6,252
2014	0	6,156	6,156
2015	9	6,284	6,293

Table 2: Roundwood available for processing in the Republic of Ireland (2011-2015).

Item	2011	2012	2013	2014	2015
	000 m ³ OB				
Commercial softwood					
Imports less exports	55	-18	49	68	40
Coillte	2,299	2,269	2,474	2,434	2,377
Private sector	386	343	328	447	646
Commercial hardwood					
Imports less exports	0	0	-1	0	0
Coillte	1	1	2	6	3
Private sector	1	1	1	0	0
Total	2,742	2,596	2,853	2,955	3,066

Sources and uses of wood fibre

The wood fibre sources for the processing and wood energy sectors in the Republic of Ireland are shown in Table 3, while the product output is in Table 4.

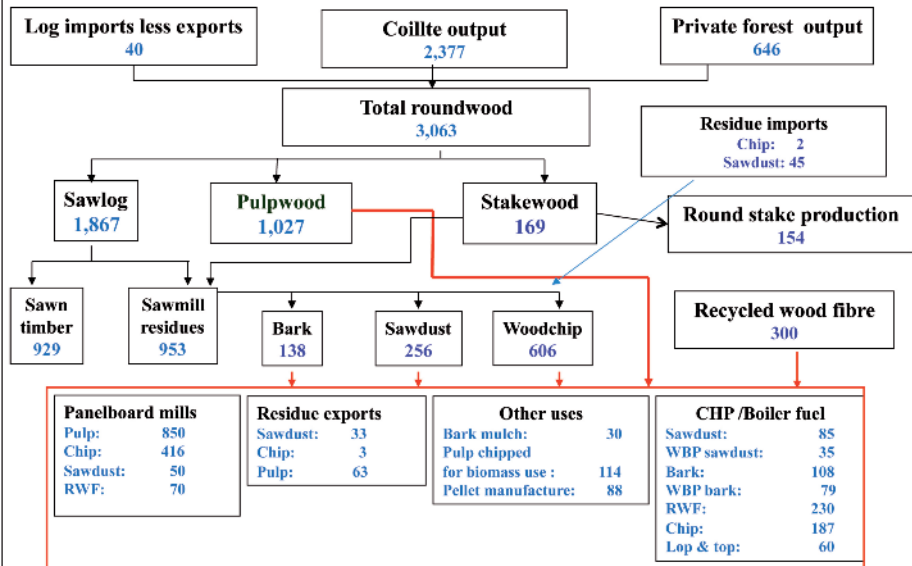
Table 3: Sources of softwood wood fibre (2011-2015).

Fibre source	2011	2012	2013	2014	2015
	000 m ³ OB roundwood equivalent (RWE)				
Roundwood	2,740	2,594	2,851	2,949	3,063
Sawmill residues	829	853	897	925	949
Wood-based panel residues	115	104	110	114	114
Residue imports			108	49	47
Harvest residues	40	30	30	60	60
Post-consumer recovered wood (PCRW)	270	250	250	300	300
Total	3,994	3,882	4,246	4,397	4,533

The woodflow for the Republic of Ireland in 2015 is in Figure 1.

Woodflow for the Republic of Ireland in 2015

Figure 1: Woodflow for the Republic of Ireland for 2015 000 m³ OB



Breakdown of 2015 wood products 000 m³

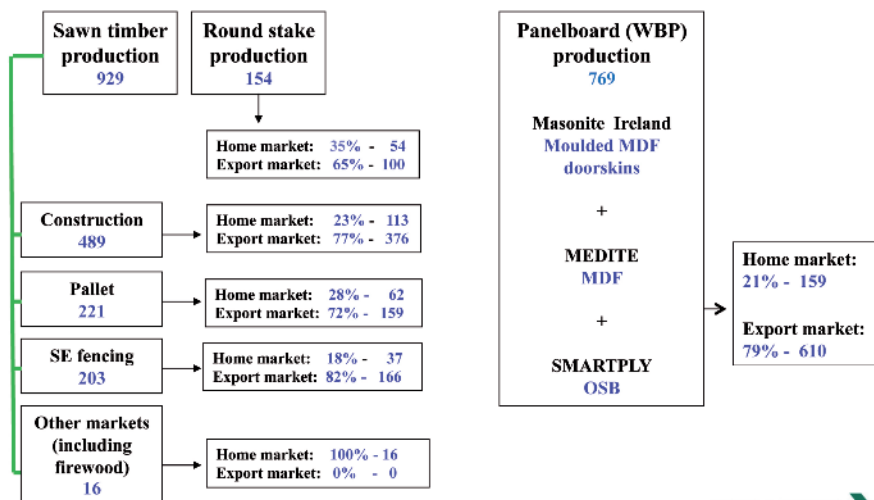


Table 4: Uses of softwood wood-fibre (2011-2015).

Fibre use	2011	2012	2013	2014	2015
	000 m ³ OB RWE				
Sawmilling	1,580	1,622	1,710	1,815	1,867
Round stake	116	131	117	147	169
Wood-based panels	1,340	1,276	1,407	1,377	1,370
Wood-biomass energy use by the forest products and energy sectors	572	611	704	760	796
Other uses					
Forest products and energy sectors	34	40	50	40	30
Wood chip for commercial biomass use	41	30	100	100	114
Export of forest product residues	196	112	88	88	36
Other uses	115	60	70	70	151
Total	3,994	3,882	4,246	4,397	4,533

Firewood (2015)

In 2015, 237,000 m³ of firewood was used in the Republic of Ireland to a value of €34 million, showing that it is providing a steady and a growing market for first thinnings (Table 5). In addition, firewood is also harvested by forest owners for their own use.

Estimated roundwood supply to 2035

In 2016, COFORD published its *All Ireland Roundwood Production Forecast 2016-2035*. This shows before all that over the period 2016-2035, roundwood production from Irish forests after 2035 is forecast to double from 3.96 million cubic metres in 2016 to 7.90 million cubic metres in 2035 (Table 6). Almost all of this increase is expected to come from the private sector.

Recent work undertaken by COFORD shows that the following challenges need to be overcome if the forecast roundwood harvest from the Irish private forest estate is to be realised. These include:

- Improving the accessibility (for timber harvesting) of the Irish private forest estate;
- Continuing Forest Service grant assistance for the development of forest roads;
- Developing a “standardised low cost” roundwood sales system which facilitates roundwood sales in the Irish private forest estate, and;
- The combination of private woodlots into larger sales units which can be harvested more economically.

Table 5: Volume and value of the domestic firewood market in the Republic of Ireland (2011-2015).

Year	000 m ³ OB	€ million
2011	214	30.97
2012	225	32.56
2013	230	33.33
2014	235	34.05
2015	237	34.34

In March 2015, the then Minister of State for Forestry Tom Hayes TD launched a COFORD report on the mobilisation of roundwood to meet growing demands for wood fuel, wood-based panels and sawn timber. The report entitled 'Mobilising Ireland's Forest Resource' was authored by the COFORD Wood Mobilisation Group which comprised growers and processors, Coillte, Teagasc, the Northern Ireland Forest Service and officials from the Forest Service.

This report analyses the full range of issues impacting on the level of wood mobilisation including: current and projected roundwood supply/demand dynamics and measures, forest rotation length, forest roads and roading, provision of harvest information to growers, road haulage and transport technology, training, environmental designations and research and development. It addresses these and other topics through 40 specific recommendations.

Table 6: Forecast of potential net realisable volume (NRV) production from forests in the Republic of Ireland in 000 m³ OB by assortment category (2016-2035).

Year	7-13 cm	14-19 cm	20 cm +	Total
2016	1,008	1,128	1,818	3,955
2017	948	1,057	1,956	3,961
2018	961	1,183	1,871	4,015
2019	1,053	1,331	1,926	4,310
2020	1,046	1,340	2,067	4,453
2021	1,114	1,548	1,972	4,634
2022	1,159	1,662	2,124	4,946
2023	1,207	1,868	2,403	5,478
2024	1,207	1,885	2,754	5,846
2025	1,244	2,071	2,820	6,136
2026	1,181	2,005	3,183	6,369
2027	1,209	2,006	3,198	6,412
2028	1,085	1,820	3,136	6,041
2029	1,134	1,862	3,130	6,126
2030	1,176	2,041	3,154	6,371
2031	964	1,736	3,695	6,395
2032	1,015	1,908	3,710	6,632
2033	1,000	1,864	3,890	6,753
2034	1,045	1,950	4,008	7,003
2035	1,189	2,222	4,452	7,863



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Demand by indigenous industry for forest fibre on the island of Ireland already exceeds the capacity of state and private forests to meet it, as evidenced by roundwood imports. Current high levels of harvest and demand reflect well on the quality of roundwood that is coming to the market from Irish forests, as well as the level of investment in supply chain management, processing technology and marketing by the processing sector.

A tight supply has meant that large sawlog is being imported for further processing, while wood fuels such as firewood and pellets are also being imported to meet the increasing levels of demand. While a level of imports is likely to continue, from a national economic perspective, and to build the significant role that forests play in climate change mitigation, the best source of wood for sawn timber, panels, fuel and other products is from Irish forests.

Estimated roundwood demand to 2020

By 2020, the demand for roundwood is set to increase to 6.41 M m³ (Table 7). Based on scenario modelling, the Sustainable Energy Authority of Ireland (SEAI) forecasts that by 2020, the demand for biomass for energy in the Republic of Ireland will be 53 M gigajoules (GJ). Forest-based biomass and waste resources could deliver about 9 M GJ each, with agricultural residues having the potential to supply a further 8 M GJ. The balance of supply is likely to comprise indigenous purpose-grown energy crops and imported biomass.

The demand for forest-based biomass for energy in 2020 is an aggregate of the demand for combined heat and power (CHP), heat only and co-firing. The expected demand for forest-based biomass in 2020 is shown in Table 7. To meet the 2020 renewable energy target, the demand for forest-based biomass for energy production will need to double over the period 2011 to 2020. This is a challenging target. However, experience in Scotland and in Austria has shown that biomass use can grow to meet challenging renewable energy targets.

The COFORD Mobilisation Report *Mobilising Ireland's Forest Resource* details how the maximum volume of roundwood can be harvested.

Table 7: Estimated roundwood supply and demand in the Republic of Ireland in 000 m³ OB in 2014 and 2020.

Item	2014	2020
Roundwood supply forecast (a)	3,064	3,756
Demand forecast and residue offset		
Roundwood for sawmilling	2,059	2,617
Roundwood for boardmills	730	880
Residues for boardmills	670	720
Forest-based biomass	994	1,871
Sawmill residue offset	-1,016	-1,315
Boardmill residue offset	-89	-103
Net demand (b)	3,348	4,670
Supply position (a-b)	-284	-914

Sawmill output (2015)

In 2015, sawmill roundwood intake was 2.04 million m³, which was converted to 0.93 million m³ of sawn timber and 154,000 m³ of round stakes (Table 8). 71% of sawmill's roundwood requirement was sold by Coillte, with the balance supplied by the private forest sector, with some imports.

The timber products produced by Irish sawmills serve three main markets: construction/structural, pallet/packaging and fencing/outdoor. Output from 2011-2015 is in Table 8.

Over the period 2014-2015, consumption of sawn timber in the Republic of Ireland grew by 17.2%. In 2015, 54% of the Irish market for sawn softwood timber was supplied by domestic production with the balance being imported. Over the same period, only 3% of the Irish market for sawn hardwood was supplied domestically (Table 9).

Table 8: Sawn timber and round stake output by product in the Republic of Ireland (2011-2015).

Product(s)	2011	2012	2013	2014	2015
	000 m ³				
Construction/structural	289	297	313	477	491
Pallet/packaging	251	258	272	207	221
Square edged fencing	206	211	223	203	203
Round stakes	106	119	106	133	154
Other	15	15	16	17	16
Total output	867	900	930	1,037	1,085

Table 9: Self-sufficiency in sawnwood (2011-2015).

Item	Sawn softwood					Sawn hardwood				
	2011	2012	2013	2014	2015	2011	2012	2013	2014	2015
	000 m ³ UB									
Domestic production	760	782	824	904	929	1	1	1	3	2
Exports	619	534	601	718	700	1	0	0	1	1
Imports	169	116	108	175	194	32	28	26	30	33
Total consumption	310	364	331	361	423	32	29	27	32	34
% of sawn timber market which is supplied by domestic production	45	68	67	52	54	3	3	4	6	3

Wood residue use (2015)

Wood residues are primarily used as fuel for sawmill kilns and for process heat in the manufacture of wood-based panels (WBP). Post-consumer recovered wood (PCRW) is used for wood energy and in the manufacture of wood-based panels. In 2015, the production of wood residues increased by 2.1% over 2014 (Table 10).

Table 10: Production of wood residues in 000 m³ (2011-2015).

Residue type	2011	2012	2013	2014	2015
Bark	236	232	243	219	217
Wood chip	510	524	552	576	604
Sawdust	198	201	212	244	246
Post-consumer recovered wood (PCRW)	270	250	250	300	300
Total	1,214	1,207	1,257	1,339	1,367

Panel output (2015)

In 2015, 769,000 m³ of wood-based panels (WBP) were produced from an intake of 1.37 million m³ of wood fibre, virtually unchanged on 2014. A very high proportion (79%) of WBP manufacture was exported; 610,000 m³, to a value of €190 million (Table 11). WBP exports comprised mainly oriented strand board (OSB) and medium density fibreboard (MDF); manufactured by Masonite, MEDITE and SMARTPLY. Key export markets were the UK and the Benelux countries.

Table 11: Production and exports of wood-based panels in and from the Republic of Ireland (2011-2015).

Item	Unit	2011	2012	2013	2014	2015
Production	(000 m ³)	736	704	739	773	769
Export volume	(000 m ³)	616	630	665	662	610
Export value	(€ million)	173	179	199	198	190

In 2015, development work continued on the €59 million upgrade of SMARTPLY's OSB mill near Waterford. By year-end, the building work for housing the new line was almost completed. Installation of the new equipment including a forming-line, press and saw-line was close to completion by year-end and on track for a Q1 2016 start-up. This is expected to deliver significant operational efficiencies and underpin new product development. This line produced its first board in April 2016.

Forest products trade (2011-2015)

In 2015, exports of forest products from the Republic of Ireland were €355 million, a 4% decline on 2014. Wood-based panels accounted for €190 million, the balance comprising paper and sawn timber exports (Table 12). Export volumes of WBP declined by 8% on 2014, while exports of sawn timber declined by 2.4% over 2014 (Table 12). The decline in the exports of sawn softwood is largely due to the increased use of domestically produced sawn softwood in the Irish market.

In 2015, forest products to the value of €612 million were imported into Ireland. This trade is dominated by the importation of pulp, paper and paper-board products. In 2015, these products represented 67% of forest product imports into Ireland.

Wood-biomass energy overview (2015)

In 2015, 35% of the roundwood used in the Republic of Ireland was used for energy generation, mainly within the forest products sector (Table 13). The use of wood biomass energy in Ireland results in greenhouse gas (GHG) emission savings from the displacement of fossil fuels. As shown in Table 14, the saving in 2013 is estimated as over 0.5 million tonnes of carbon dioxide (CO₂), which compares with total emissions of 57.8 million tonnes of carbon dioxide (CO₂) in the same year.



In 2015, exports of forest products from the Republic of Ireland were €355 million, a 4% decline on 2014.

Table 12: Timber and paper products trade, volume and value (2011-2015).

Product(s)	Imports									
	2011	2012	2013	2014	2015	2011	2012	2013	2014	2015
	000 m ³					€ million				
Sawn timber	201	145	134	205	227	64	54	51	74	88
Wood-based panels	195	204	194	235	240	68	75	78	98	112
	000 tonnes									
Pulp products	54	47	50	46	51	45	45	41	42	53
Paper & paper-board products	383	415	428	404	427	333	339	340	340	359
Total						510	513	510	554	612
Product(s)	Exports									
	2011	2012	2013	2014	2015	2011	2012	2013	2014	2015
	000 m ³					€ million				
Sawn timber	619	534	601	718	701	83	73	81	122	121
Wood-based panels	616	630	665	662	610	179	173	179	199	190
	000 tonnes									
Pulp products	0	0	0	0	0	0	0	0	0	0
Paper & paper-board products	59	68	81	67	86	52	51	59	50	44
Total						308	303	339	370	355

In 2015, the output of the forest-based biomass energy sector grew by 3% over 2014 (Table 14). However, demand for wood-biomass energy from Edenderry Power was reduced in 2015, caused by the outage of the power station to facilitate a boiler upgrade.

In 2015, 237,000 m³ of firewood was used in the Republic of Ireland to a value of €34 million, showing that it is providing a steady and a growing market for first thinnings (Table 13). 8,000 m³ of this demand was imported, with the balance being supplied domestically. In addition, firewood is also harvested by forest owners for their own use. Wood-biomass fuels used by the sector are shown in Table 13. Ireland's progress towards meeting its renewable energy targets is detailed in Table 15. At the time of writing, data for 2015 was not fully available.

Table 13: Use of forest-based biomass in 000 m³ OB and as a proportion of total roundwood harvest (2011-2015).

Item	2011	2012	2013	2014	2015
Wood-biomass use by the energy and forest products industries	572	611	660	760	796
Roundwood chipped for primary energy use	41	30	100	100	114
Domestic firewood use	214	225	230	235	237
Short rotation coppice (SRC)	5	5	5	5	5
Wood pellets and briquettes	129	144	161	150	154
Charcoal	5	2	1	1	1
Total	966	1,017	1,157	1,251	1,307
Of which supplied from domestic resources	896	910	1,034	1,166	1,132
Roundwood available for processing	2,740	2,594	2,852	2,975	3,016
Firewood use	214	225	230	235	237
Total roundwood use	2,954	2,819	3,082	3,210	3,253
Wood biomass use as a % of total roundwood harvest	30.3	32.3	33.5	36.3	34.8

Table 14: Output use of forest-based biomass and associated greenhouse gas emissions mitigation (2011-2015).

Item	Unit	2011	2012	2013	2014	2015
		Output				
Heat	Terajoule	6,604	6,808	7,002	7,562	7,730
Electricity	Terajoule	378	477	491	530	446
Total	Terajoule	6,982	7,285	7,493	8,092	8,176
CO ₂ abated	000 tonnes	534	557	573	619	625

Table 15: Renewable energy progress to targets.

Energy type	Progress towards targets (2010-2014) by year					Targets	
	2010	2011	2012	2013	2014	2010	2020
RES-E (normalised)	14.5	17.3	19.5	20.8	22.7	15	40
RES-T	2.4	3.8	4.0	4.9	5.2	3	10
RES-H	4.5	4.9	5.1	5.5	6.6	5	12
Directive (2009/29/EC)	5.6	6.5	7.1	7.6	8.6		16