

An overview of wood fibre use in Ireland (2013)

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Data sources: The data contained in this overview have been compiled from the UNECE Timber Committee Market Report for Ireland (2014) and from the EUROSTAT Joint Forest Sector Questionnaire (JFSQ) for Ireland (2014). Both of these reports were compiled on behalf of the Department of Agriculture, Food and the Marine by drima marketing.

Irish roundwood harvest

Including firewood, the total roundwood harvest in the Republic of Ireland in 2013 was 3.05 million m³. In 2013, 2.85 million cubic metres of roundwood was processed in the Republic of Ireland, a 10% increase on 2012 (Table 1).

Table 1: Roundwood available for processing in the Republic of Ireland (2009-2013).

	2009	2010	2011	2012	2013
	000 m ³ OB				
Commercial softwood					
Imports less exports	-63	28	55	-18	49
Coillte	2,354	2,217	2,299	2,269	2,474
Private sector	130	463	386	343	328
Commercial hardwood					
Imports less exports	0	0	0	0	-1
Coillte	3	0	1	1	2
Private sector	0	0	1	1	1
Total	2,424	2,708	2,742	2,596	2,853

Table 2: Sources of wood fibre in 000 m³ overbark (2009-2013).

	2009	2010	2011	2012	2013
	000 m ³ OB roundwood equivalent (RWE)				
Roundwood	2,421	2,708	2,740	2,594	2,851
Sawmill residues	838	842	829	853	897
Wood-based panel residues	94	101	115	104	110
Residue imports					108
Harvest residues	0	0	40	30	30
Post-consumer recovered wood (PCRW)	200	280	270	250	250
Total	3,553	3,931	3,994	3,882	4,246

Table 3: Uses of softwood fibre (2009-2013).

	2009	2010	2011	2012	2013
	000 m ³ OB RWE				
Sawmilling	1,602	1,603	1,580	1,622	1,710
Round stake	88	118	116	131	117
Wood-based panels	1,286	1,400	1,340	1,276	1,407
Wood-biomass energy use by the forest products sector	431	554	572	611	704
Other uses					
Horticultural bark mulch	54	27	34	40	50
Wood chip for commercial biomass use	55	39	41	30	100
Export of forest product residues	37	58	196	112	88
Other uses			115	60	70
Total	3,553	3,931	3,994	3,882	4,246

Firewood

In 2013, 230,000 m³ of firewood was used in the Republic of Ireland to a value of € 33million, showing that it is providing a steady and a growing market for first thinnings (Table 4). In addition, firewood is also harvested by forest owners for their own use.

Roundwood supply and demand to 2020

Over the next 15 years, the supply of roundwood to be harvested from Irish forests will increase significantly. A recent COFORD report shows that over the period to 2028 the production capacity of Ireland's forests will almost double to 7 million cubic metres, from the current 3.79 million. Almost all of the increase in supply is set to come from privately-owned forests in the Republic of Ireland; those areas established over the past 25 years on foot of State/EU and private sector investment (Table 5). Considerable scope exists to expand wood energy production, and this is in addition to supplies for sawmilling and board manufacture.

However, realising this increase in potential production will entail significant capital investment in roads, harvesting equipment and information technology (IT) systems by forest owners, contractors and by the State.

Historically the Irish timber processing sector has processed all of the roundwood which has been harvested from Irish forests. In addition there is a lot of scope for the private forest sector to supply wood for energy use.

Table 4: Volume and value of the domestic firewood market in the Republic of Ireland (2009-2013).

	000 m ³ OB	€million
2009	184	26.75
2010	199	28.80
2011	214	30.97
2012	225	32.56
2013	230	33.33

Table 5: Forecast of potential net realisable volume production (NRV) in 000 m³ OB by assortment category from the private forest estate in the Republic of Ireland (2014-2028).

	Tip-7 cm	7-13 cm	14-19 cm	20 cm +	Total
2014	41	229	150	45	465
2015	47	264	183	57	551
2016	52	297	196	72	617
2017	64	377	284	91	816
2018	56	317	191	122	686
2019	65	366	290	195	916
2020	78	492	486	262	1,318
2021	85	485	555	463	1,588
2022	84	483	528	404	1,499
2023	93	502	784	848	2,227
2024	84	490	657	617	1,848
2025	72	427	634	703	1,836
2026	76	441	715	886	2,118
2027	101	544	1,209	1,605	3,459
2028	96	519	1,090	1,620	3,325

Work which was undertaken for the COFORD Demand Report shows that the projected level of demand for roundwood on the island of Ireland in 2020 from both the conventional timber processing sector and from the emerging wood biomass energy sector is as shown in Table 6.

Table 6: Estimated roundwood demand on the island of Ireland in 2020 in 000 m³ OB.

	Demand
Conventional forest products sector (i.e. sawmilling and wood-based panels)	3,830
Wood-biomass energy	3,084
Residues from the conventional forest products sector which are used to meet energy demand	-876
Total	6,038



Roundwood demand on the island of Ireland is estimated to increase to six million m³ by 2020.

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 million Gigajoules (GJ). Forest-based biomass and waste resources could deliver about 9 million GJ each, with agricultural residues having the potential to supply a further 8 million 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 & power (CHP), heat only and co-firing. 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.

Private forest estate

In the period (1981-2013), over 250,000 hectares of forest were established by private growers in Ireland (Table 7). 232,616 hectares of this estate has been planted since 1990. 84% of private forest owners are farmers. Much of this estate is now available for harvesting. However, the full potential of this farm forest resource for rural development in Ireland has not yet been fully realised. 42% of the private forest estate in Ireland is less than 25 years old.

The private forest sector now accounts for 46% of the national forest estate or 5% of total land area of the Republic of Ireland. There are approximately 19,500 private forest owners, of which 84% are classed as farmers. These manage over 340,000 hectares of forest.

In 2013, forest fires damaged 350 hectares of forest. This was a considerable improvement on the 1,500 hectares lost to fire in 2011.

Forest products trade (2008-2013)

In 2013, exports of forest products from the Republic of Ireland were valued at €339 million, a 12% increase on 2012. Wood-based panels (WBP) accounted for €199 million, the balance comprising paper and sawn timber exports (Table 8). Export volumes of WBP increased by 11% over 2012 (Table 12).

In value terms, Ireland became a net exporter of sawn timber in 2010. This was for the first time since 1961, when global forest products statistics began to be compiled by FAO (Table 8). It marked the continuation of a trend apparent since 2008 (and more apparent in the case of export volumes) with the gap between the value of exports and imports closing due to the collapse of the domestic construction market and increased levels of exports, mainly to the UK.

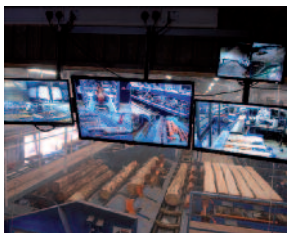
Over the period 2011-2013, consumption of sawn timber in the Republic of Ireland grew by 7%. In 2013, 67% of the Irish



There are approximately 19,500 private forest owners in the Republic of Ireland of which 84% are classed as farmers managing 340,000 hectares of forest.

Table 7: Area of new forests planted in the Republic of Ireland by area and by ownership (2005-2013).

	State	Private	Total
	Hectares		
2005	64	10,032	10,096
2006	25	8,012	8,037
2007	0	6,947	6,947
2008	67	6,182	6,249
2009	35	6,613	6,648
2010	4	8,310	8,314
2011	62	6,591	6,653
2012	60	6,592	6,652
2013	3	6,249	6,252



In 2013, Irish sawmills utilised 1.83 million cubic metres of roundwood. 86% of this roundwood was sold by Coillte, with the balance supplied by imports and by the private forest sector.

market for sawn softwood timber was supplied by domestic production with the balance being imported. Over the same period, only 4% of the Irish market for sawn hardwood was supplied domestically (Table 10).

Sawmill output (2013)

In 2013, Irish sawmills utilised 1.83 million cubic metres of roundwood. 86% of this roundwood was sold by Coillte, with the balance supplied by imports and by the private forest sector. The sawmilling sector used 100% of available logs. Due to a shortage of suitable roundwood for sawmill use; additional logs had to be imported from Northern Ireland and Scotland.

The timber products which are produced by Irish sawmills serve three main markets: construction/structural, pallet/packaging and fencing/outdoor. The market size of these products from 2008-2013 are shown in Table 9.

Over the period 2009-2013, in line with the reduction in construction activity, the domestic market for sawn timber declined by 50%. Over the same period, sawn timber exports grew by 56% (Table 10). In 2013, 63% of the Irish market for sawn timber was supplied by indigenous production with the balance being imported (Table 10).

Table 8: Timber and paper products trade, volume and value (2009-2013).

	Imports									
	2009	2010	2011	2012	2013	2009	2010	2011	2012	2013
	000 m ³					€ million				
Sawn timber	232	242	201	145	134	66	74	64	54	51
Wood-based panels	181	166	195	204	194	68	65	68	75	78
	000 tonnes									
Pulp products	32	41	54	47	50	22	31	45	45	41
Paper & paper-board products	379	370	383	415	428	308	313	333	339	340
Total						464	483	510	513	510
	Exports									
	2009	2010	2011	2012	2013	2009	2010	2011	2012	2013
	000 m ³					€ million				
Sawn timber	564	658	619	534	601	51	85	83	73	81
Wood-based panels	580	660	616	630	665	147	179	173	179	199
	000 tonnes									
Pulp products	0	1	0	0	0	0	0	0	0	0
Paper & paper-board products	45	33	59	68	81	45	44	52	51	59
Total						243	308	308	303	339

Table 9: Sawn timber output by product and year for the Republic of Ireland in 000 m³ (2009-2013).

	2009	2010	2011	2012	2013
Construction/structural	292	293	289	297	313
Pallet/packaging	254	255	251	258	272
Square edged fencing	208	209	206	211	223
Round stakes	80	107	106	119	106
Other	15	15	15	15	16
Total	849	879	867	900	930

Table 10: Self-sufficiency in sawnwood (2009-2013).

	Sawn softwood					Sawn hardwood				
	2009	2010	2011	2012	2013	2009	2010	2011	2012	2013
	000 m ³ UB									
Domestic output	772	772	760	782	824	3	0	1	1	1
Exports	563	658	619	534	601	1	1	1	0	0
Imports	191	205	169	116	108	41	37	32	28	26
Total consumption	400	319	310	364	331	43	36	32	29	27
% of market which is home supplied	52	36	45	68	67	7	0	3	3	4

Wood residues (2013)

Wood residues are primarily used as feedstock for sawmill kilns and for process heat in the manufacture of wood-based panel (WBP). Post-consumer recovered wood (PCRW) is increasingly being used for wood energy and in the manufacture of wood-based panels. Over the period 2009-2013, the production of wood residues increased by 11% (Table 11).

Table 11: Production of wood residues in 000 m³ (2009-2013).

	2009	2010	2011	2012	2013
Bark	215	222	236	232	243
Wood chip	517	517	510	524	552
Sawdust	200	204	198	201	212
Post-consumer recovered wood (PCRW)	200	280	270	250	250
Total	1,132	1,223	1,214	1,207	1,257

Panel sector (2013)

In 2013, 739,000 m³ of wood-based panels (WBP) were produced from an intake of 1.36 million m³ of wood fibre, a 5.0% increase over 2012 (Table 12). A very high proportion (90%) of WBP manufacture was exported; 665,000 m³, to a value of

€199 million (Table 12). WBP exports mainly comprised 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 12: Production and exports of wood-based panels in and from the Republic of Ireland (2009-2013).

	2009	2010	2011	2012	2013
Production (000 m ³)	709	758	736	704	739
Export volume (000 m ³)	580	660	616	630	665
Export value (€ million)	147	179	173	179	199

Wood-biomass energy overview

In 2013, 33.5% of the roundwood harvested in the Republic of Ireland was used for energy generation, mainly within the forest products sector (Table 13).

In 2013, the output of the wood-based biomass energy sector grew by 2.9% over 2012 (Table 14). In 2013, 230,000 m³ of firewood was used in the Republic of Ireland to a value of €33million, showing that it is providing a steady and a growing market for first thinnings (Table 13). In addition, firewood is also harvested by forest owners for their own use.

Since 2006, the use of wood-biomass energy in Ireland has resulted in an estimated greenhouse gas (GHG) emission saving of 3.69 million tonnes of carbon dioxide (CO₂). Wood-biomass fuels used by the sector are shown in Table 13. The output of the wood-biomass sector is shown in Table 14.

Table 13: Use of forest-based biomass in 000 m³ OB and as a percentage of total roundwood harvest in the Republic of Ireland (2010-2013).

	2010	2011	2012	2013
Wood-biomass use by the energy and forest products industries	554	572	611	660
Roundwood chipped for primary energy use	39	41	30	100
Domestic firewood use	199	214	225	230
Short rotation coppice	1	5	5	5
Wood pellets and briquettes	121	129	144	161
Charcoal	2	5	2	1
Total	916	966	1,017	1,157
Of which supplied from domestic resources	841	896	910	1,034
Roundwood harvest				
Roundwood available for processing	2,708	2,740	2,594	2,852
Firewood harvest	199	214	225	230
Total	2,907	2,954	2,819	3,082
Forest-based biomass as a % of total roundwood harvest	28.9	30.3	32.3	33.5

Table 14: Output of the forest-based biomass energy sector in the Republic of Ireland (2009-2013).

	Unit	2009	2010	2011	2012	2013
		Output				
Heat	Terajoule	5,273	6,306	6,604	6,808	7,002
Electricity	Terajoule	240	372	378	477	491
Total	Terajoule	5,513	6,678	6,982	7,285	7,493
CO ₂ abated	000 tonnes	422	511	534	557	573

The expected future demand for wood-biomass fibre for co-firing by Edenderry Power is shown in Table 15.

Table 15: Estimated demand for wood fibre for co-firing by Edenderry Power (2014-2020).

	000 tonnes
2014	260
2015	300
2020	500

Wood-biomass energy overview

Contribution of renewables to heat and electricity demand. The contribution of renewable energy to meeting national energy targets is outlined below. This data is for 2012.

At the time of writing, data for 2013 was not available.

Renewable heat (RES-H)

Renewable energy contributing to Ireland's thermal energy requirements is dominated by industrial biomass use, in particular the use of waste wood to produce heat in board manufacture, joineries and wood processing plants and the use of tallow from rendering plants for the production of heat.

In 2012, renewable heat (RES-H) accounted for 5.2% of all thermal energy. RES-H grew from 2.6% in 1990 to 5.0% in 2011.

Since 2005, the use of renewable heat by industry has remained relatively static, while use in the residential and services sectors has increased by 122% and 400% respectively, albeit from quite low bases. Over the period 1990-2012, the overall use of renewable heat grew by 108%.

Renewable electricity (RES-E)

Wind energy dominates this sector. Over the period 1990-2012, the share of electricity from renewable energy has increased fourfold, from 4.9% to 19.6%. Most of this increase took place since 2000.



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