An overview of wood fibre use in the Republic of Ireland (2009)

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Sawmills increased exports during the three years 2007-09. Irish sawn timber finished to a high standard (Murray Group (above), and Glennon Brothers (below)) increased both domestic and export market share.

Data sources[1]: The data contained in this overview have been compiled from the UNECE Timber Committee Market Report for Ireland (2010) and from the EUROSTAT Joint Forest Sector Questionnaire (JFSQ) for Ireland (2010). Both of these reports were compiled on behalf of the Department of Agriculture, Fisheries and Food (DAFF) by Drima Marketing.

Irish roundwood harvest

In 2009, 2.421 million m³ of roundwood was processed in the Republic of Ireland. This was a reduction of 19.4% on that harvested in 2007 (Table 1).

Table 1: Roundwood available for processing in the Republic of Ireland (2007 - 2009)

Item/year	Irish roundwood harvest 000 m³ overbark		
	2007	2008	2009
Log imports less exports	57	106	-63
Coillte harvest	2,556	2,279	2,354
Private forest harvest	390	118	130
Total	3,003	2,503	2,421
Harvest as a % of 2007 harvest		83.3%	80.6%
Harvest assortment			
Sawlog (> 14 cm td)	1,934	1,619	1,602
Stake wood (7 – 14 cm td)	180	80	88
Pulp wood (7 – 14 cm td)	889	804	731

Sources and uses of wood fibre

The wood fibre sources which provide the Irish forest industry with its raw material (2007 – 2009) are shown in Table 2, while the products produced by the sector for the same period are shown in Table 3.

[1]*Further information regarding the data contained in this review can be found on the following websites; EUROSTAT forestry statistics http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-78-09-993/EN/KS-78-09-993-EN.PDF ; FAO forestry trade database http://faostat.fao.org/site/628/default.aspx and the UNECE Timber Committee (2010) http://timber.unece.org/index.php?id=316*

Table 2: Sources of wood fibre in the Republic of Ireland (2007 - 2009)

Fibre source	Volume 000 m³ OB		
	2007	2008	2009
Roundwood	3,003	2,503	2,421
Sawmilling residues	966	846	838
Wood based panel (WBP) residues	125	106	94
Post consumer recovered wood (PCRW)	264	208	200
Total	4,358	3,663	3,553

Table 3: Uses of wood fibre in the Republic of Ireland (2007 -2009)

Uses of wood fibre	Volume 000 m³ OB		
	2007	2008	2009
Sawmilling sector	1,934	1,619	1,602
WBP sector	1,673	1,462	1,286
Round stakes	180	80	88
Wood biomass use by the forest products sector	324	378	431
Other uses			
Horticultural bark mulch	132	44	54
Wood chip for commercial biomass use	20	30	55
Exports of forest product residues	95	50	37
Total	4,358	3,663	3,553

Roundwood supply and demand to 2020

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. Work is currently being finalised on both the COFORD wood supply and wood demand forecasts. Preliminary figures suggest that wood supply from forests on the island of Ireland is set to increase from 3.8 M m³ at present to 6.3 M m³ by 2020. The projected level of demand for roundwood on the island of Ireland in 2020 from both the conventional timber processing sectors and the emerging wood biomass energy sector is shown in Table 4.

Table 4: The projected demand for roundwood on the island of Ireland in 2020

Demand type	Projected demand (2020) million m³/annum
Conventional demand	3.6
Wood biomass energy demand	2.7
Total demand	6.3

Loading first thinnings in a private forest in Co. Wicklow. Net roundwood production from privately owned forests is estimated to increase from 0.38 million m³ in 2009 to 2.95 million m³ by 2028.

Private forest estate

In the period (1981-2009), over 239,000 hectares of forest have been established by private growers in Ireland. 211,712 hectares of this estate has been planted since 1990. 84% of private forest owners are farmers.

The full potential of this farm forest resource for rural development in Ireland has not yet been fully realised. A recent forecast which was undertaken by COFORD shows that the overall net roundwood production from privately owned forests will increase from an estimated 0.38 million m³ in 2009 to 2.95 million m³ by 2028.

Private sector roundwood production forecast

In 2008, COFORD funded an updated forecast of the roundwood volumes available from the Irish private forest estate. This project was undertaken by a team at University College Dublin (UCD). An overview of this forecast is outlined below.

- In 2008, according to the Irish National Forest Inventory (NFI), the area of privately-owned forest was 320,000 ha.
- Total growing stock is estimated as 18.5 million m³ of roundwood.
- Most of this private forest estate has been established over the past two decades, with many areas now entering the first thinning stage.
- The COFORD forecast study has shown that the annual potential level of roundwood supply from privately-owned forests is predicted to increase eight fold over present lev els, to reach almost 3 million m³ by 2028.
- This shows that the overall net roundwood production from privately owned forests will increase from an estimated 0.38 million m³ in 2009 to 2.95 million m³ by 2028.
- An assessment is also made of the potential to harvest energy crops from this resource. This is detailed in Table 5.

Table 5: Forecast harvest from the Irish private forest estate (2009 to 2028)

Year	Net volume in 000 m³ OB				Potential energy volume 000 m³
	7-13 cm	14-19 cm	> 20 cm	Total	
2009	257	110	15	381	302
2014	330	209	56	595	388
2019	515	362	209	1,086	607
2024	576	627	539	1,743	675
2028	530	951	1,472	2,953	626

- Realising this increase in potential production will entail significant capital investment in roads, harvesting equipment and in information technology (IT) systems by forest owners, contractors and by the State.
- The total thinning area, from first, second, third and subsequent thinnings increases over time and peaks at circa 30,000 ha in 2022. This scale of thinning, to be achieved within the next thirteen years, represents a significant challenge to the overall forestry sector.
- Given the dispersed private forest resource and the small plantation size, innovation in wood procurement, harvesting and transport is essential to drive down costs, reduce measurement overheads, and eliminate double handling.
- Existing sales/procurement systems are too costly and are in need of overhaul. Savings due to economies of scale by combined selling of wood from clusters are possible.

Forest products trade (2007 – 2009)

In 2009, imports of forest products equalled €464 million, mainly pulp and paper products (over 71%), with sawn timber and wood based panels making up the remainder. A reduction in Irish construction output has led to a significant reduction in sawn timber and panel imports in 2008 and in 2009. These imports declined by 74% and 53% respectively over the period 2007 – 2009 (Table 6).

Table 6: Irish forest products trade data (2007 - 2009)

Product	Imports					
	000 m³			€million		
	2007	2008	2009	2007	2008	2009
Sawn timber	724	412	232	€251	€141	€66
WBP	358	264	181	€146	€108	€68
	000 tonnes			€million		
Pulp products	31	29	32	€22	€20	€22
Paper & paperboard products	546	526	379	€467	€520	€308
Total				€886	€789	€464
	Exports					
	000 m³			€million		
Sawn timber	381	389	564	€71	€54	€51
WBP	757	614	580	€262	€195	€147
	000 tonnes			€million		
Pulp products	0	2	0	€0	€0	€0
Paper & paperboard products	85	77	45	€92	€69	€45
Total				€425	€318	€243

In 2009, despite difficult trading conditions, volume exports of sawn timber increased by 45% over 2008.

In 2009, panel and sawn timber exports were worth €198 million. Key export markets were Northern Ireland, the UK and Benelux countries.

Sawmill output (2009)

Nine companies form the core of the Irish sawmilling sector, providing the outlet for sawlog and stakewood harvested from Irish forests. In 2008, Irish sawmills utilised 1.699 million m^3 of roundwood. Output was 780,000 m^3 of sawn timber. The primary products produced included construction timber, pallet and fencing products.

The primary products produced by the Irish sawmill sector include construction/structural timber, pallet/packaging timber and fencing products. In recent years Irish produced structural timber was largely sold on the home market with pallet and fencing products making up the bulk of sawn timber exports. However, in recent years, Irish sawmillers have worked hard to develop new products and markets. Such products include; acoustic planed all over (PAO)/eased edge timber studding, fencing products and acoustic barriers.

Coillte Panel Products such as medium density fibreboard (MDF (above)) and oriented strandboard (OSB (below) are now exported around the world.

The development of new products for sawn timber has required considerable investment in both sawmill processing facilities and in marketing and sales development in key export markets. In 2009, despite difficult market conditions, the exports of Irish sawn timber (in volume terms) increased by 45% over 2008. Irish sawn timber exports have traditionally been dominated by pallet and by fencing products. However, in recent years, the volume of construction timber which has been exported from the Republic of Ireland has increased significantly. This is largely sold in Northern Ireland and in the UK. Over the period 2000 – 2009, the volume of sawn softwood which has been exported by the sawmill sector in the Republic of Ireland has increased by 205%.

In line with the reduction in construction activity, the Irish market for sawn timber has declined by 77% over the period 2006 – 2009.

Panel sector (2009)

Four wood based panel (WBP) manufacturers operate in the Republic of Ireland. These are Finsa Forest Products, Masonite Ireland, Medite Europe and SmartPly Europe. In 2009, this sector had a combined output of 709,000 m^3. This was a 9% decline over 2008 and a 23% reduction over 2007 (Table 7). The sector is an active buyer of pulp wood; sawmill residues

(i.e. sawdust, woodchip and bark) and post consumer recovered wood (PCRW). In 2009, the estimated annual wood fibre requirement (for process use) of the panel mills operating in the Irish Republic was 1.29 million m^3.

Table 7: Total output of the panel sector in the Republic of Ireland (2007 – 2009)

Item / year	WBP output in 000 m^3		
	2007	2008	2009
WBP production	918	779	709
2009 output expressed as a % of 2007 output		85%	77 %

In 2009, 82% of the panel products which were manufactured in Ireland were exported. In total, 580,000 m^3 of panel products were exported from Ireland to a value of €147 million (Table 6). These exports are dominated by export sales of Oriented Strand Board (OSB) and Medium Density Fibreboard (MDF) products. These products are manufactured by Masonite, Medite and by Smart*Ply*. Key markets for Irish panel product exports are the UK and the Benelux countries. In 2009, the Irish panel products sector was the second largest exporter of particleboard and OSB to the UK marketplace. Over the same period Ireland was the largest exporter of MDF into the UK marketplace.

Wood biomass overview

There is growing interest in the Irish bio-energy sector. This is being promoted by the Sustainable Energy Authority of Ireland (SEAI) and DAFF/COFORD schemes. The output of the Irish biomass sector is currently dominated by the wood processing sector. In 2009:

- The output of the sector grew by 11%.
- The Irish forest industry used 329,000 tonnes of biomass.
- The heat generated by the Irish biomass sector is estimated to be 3,493 Terra Joules (TJ).
- The electricity generated by the Irish biomass sector is estimated to be 240 Terra Joules (TJ) including the use of wood biomass for co–firing with milled peat by Edenderry Power.

Biomass input and energy output

The use of wood biomass in Ireland is dominated by the forest products sector, which uses it for process drying and for energy purposes. Since 2006, the use of wood energy by commercial and domestic users has risen considerably (Table 8, overleaf). The average annual growth rate of the domestic use of wood biomass between 2005 and 2009 was 18%.

Wood pellets produced by D Pellet, Knocktopher, Co. Kilkenny.

Table 8: Feedstock used by the wood biomass energy sector in Ireland (2007 - 2009)

Biomass type	End use	Usage 000 m³		
		2007	2008	2009
Firewood	Domestic heating	44	54	87
Wood chips	Commercial heating	35	63	53
Short rotation coppice (SRC)	Commercial heating	1	1	4
Wood pellets & briquettes	Domestic & commercial heating	67	82	110
Charcoal	Domestic use	2	2	2
Biomass use by the energy[2] & forest products industry[3]	Process drying/heating/CHP	420	384	438
Total		569	586	694
Percentage forest products use		74%	66%	63%

The energy output of the wood biomass sector in Ireland is shown in Table 9.

Table 9: Energy output of the Irish wood based biomass sector (2007 – 2009)

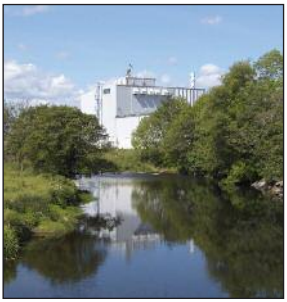
Item	Unit	Output		
		2007	2008	2009
Heat output	TJ	4,931	4,857	5,273
Electricity output	TJ	51	112	240
Total output	TJ	4,982	4,969	5,513
Tonnes CO_2 abated	000 tonnes	381	380	422

Domestic biomass uptake

In 2006, the Greener Homes Scheme (GHS) was established by the Sustainable Energy Authority of Ireland (SEAI). This scheme allows householders to obtain grants for the installation of renewable heat technologies including wood pellet stoves, boilers, solar panels and geothermal heat pumps.

Up to June 2010, 28,686 applications had been approved under the GHS, the uptake of which is shown in Table 10 (page 64).

[2] *This includes co-firing of wood biomass at Edenderry Power; www.edenderrypower.ie*
[3] *In 2008 - 2009, the requirement for wood biomass use by this sector declined in line with the decline in Wood Based Panel (WBP) output.*



There are three commercial wood fuelled CHP plants in Ireland: Balcas, Grainger Sawmills (above) and Munster Joinery.

Table 10: Uptake of the GHS by scheme type (2009 – 2010)

GHS scheme type	% of total schemes	
	4/2009	6/2010
Solar	54%	59%
Heat pump	23%	20%
Biomass	23%	20%
Wood gasification		0.4%

Biomass fuelled Combined Heat and Power (CHP)

There are currently three commercial wood fuelled biomass CHP plants in operation on the island of Ireland. These are Balcas Fuel Ltd., Grainger Sawmills Ltd. and Munster Joinery Ltd. The heat and electricity output of these facilities are shown in Table 11.

Table 11: Existing biomass fuelled CHP output on the island of Ireland (2009)

Plant name & location	Feedstock	Electricity output MWe	Heat output MWth
Balcas Fuel, Enniskillen, Co Fermanagh	Sawmill residues	2.7	10.0
Grainger Sawmills, Enniskeane, Co Cork	Sawmill residues	2.0	4.0
Munster Joinery Ltd., Ballydesmond, Co Cork	Joinery residues	3.0	-
Total		7.7	14.0

Co-firing with wood biomass

Edenderry Power, a modern peat-burning power station operated by Bord Na Móna is currently working to increase the volume of wood biomass which is used as a feedstock for its electricity generating process. By 2016, the volume of wood biomass which will be used in Edenderry is forecast to reach 310,000 tonnes. Not all of this resource will be supplied from forest resources.

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Biomass carbon savings

Since 2006, the use of wood biomass in Ireland has reduced Irish carbon dioxide (CO_2) emissions by 1.54 million tonnes. This saving averages 380,000 tonnes of CO_2 per annum.