UNECE Timber Committee Market Report for Ireland 2011

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1.0 Irish economy-an overview

2010[1]

Following two very tumultuous years for both the domestic and global economies, 2010 saw a return of some economic stability. The global economy recovered fairly robustly with reasonable growth rates returning to the majority of Ireland's trading partners. A combination of a recovering global economy and a significant improvement in the competitiveness of Irish business provided a solid platform for export recovery. However, with investment falling by close to 30% again in 2010, the strong export performance was not strong enough to result in GDP growth[2].

- At market prices, Gross Domestic Product (GDP) fell by 2.9% over 2009.
- Gross National Product (GNP), declined by 3.0%.
- Between 2009 and 2010, Irish industry (excluding building and construction) grew by 11.2% while agriculture, forestry and fishing sectors increased their output by 0.7%. However, these increases were not sufficient to counteract the declines which took place in the remaining sectors of the economy.
- Building and construction activity declined by 30.1%.
- Exports performed strongly in 2010, growing by 6.3% in value over 2009.
- Personal consumption, which accounts for nearly two thirds of domestic demand, fell by 3.1% while Government expenditure was 8.0% down on 2009.
- Gross fixed capital formation declined by 28.5%. This reflects the continued weakness of the construction sector[3].
- Investment in residential construction was €4.39 billion, an 87% reduction on 2006.
- In 2010, the output of the Irish construction sector declined by 40% over 2009.
- Employment fell in seven of the fourteen economic sectors over the year with the largest declines recorded in the construction (-21,800 or -16.9%)[4].
- Consumer price inflation (CPI) for 2010 was -1.0% compared to -4.5% for 2009.
- There were 1,848,000 people in employment in the 2010, a year-on-year fall of 81,000 or 4.2%.
- At year end, the Irish rate of unemployment stood at 13.6% up from 11.8% in 2009.

2011-2012

Ireland is continuing to undertake a comprehensive adjustment programme to reduce its macro-economic imbalances and restore its banking system to health. Despite robust export growth, weak domestic demand and ongoing fiscal consolidation have prevented an economic recovery from unfolding so far. As domestic demand stabilises, a modest upturn of output is expected in the course of 2011, with some acceleration in 2012. The unemployment rate is likely to stay high, and core deflation to continue[5].

Recent economic forecasts[6] by the Irish Economic & Social Research Institute (ESRI) indicate t that:

- In 2011, activity in the domestic economy is expected to remain depressed, with GNP forecast to grow by 0.2% and GDP growing by 1.8%. Growth may pick up in 2012, with GNP growing by 0.7% and GDP by 2.3%. The stimulus for growth is coming from the export sector as domestic producers seek to replace lost domestic demand with new business from abroad, while the multinational sector continues to perform well on global markets.
- In 2011, Ireland's export markets will largely sustain the pace of recovery experienced last year and we expect exports to make a further solid contribution to GDP growth this year.
- It is expected that the volume of exports of goods and services will increase by 7.0% in 2011 and by 7.4% in 2012.
- The expected growth in the imports of key trading partners is shown in Table 1.

[1] ESRI Quarterly Economic Commentary, Summer (2011); www.esri.ie
[2] IBEC IFFPA Review (2011); www.iffpa.ie
[3] http://www.cso.ie/releasespublications/documents/prices/current/cpi.pdf
[4] http://www.cso.ie/releasespublications/documents/labour_market/current/qnhs.pdf
[5] http://www.oecd.org/document/0,3746,en_2649_201185_46462759_1_1_1_1,00.html
[6] http://www.esri.ie/UserFiles/publications/QEC2011Sum_ES.pdf

Table 1: OECD forecast for import growth (%) in key markets (2009-2012)[7].

Trading partner	Actual and forecast import volume growth in key export markets			
	2009	2010	2011f	2012f
Austria	-12.5	7.5	7.7	6.0
Belgium	-10.9	8.4	6.9	6.1
Canada	-13.9	13.4	6.8	7.1
France	-10.6	8.2	7.7	6.8
Germany	-9.4	12.4	8.0	6.7
Netherlands	-8.5	10.5	5.4	6.7
United Kingdom	-11.9	8.5	4.0	3.7
United States	-13.8	12.6	5.4	8.4
OECD region	-12.5	11.1	6.3	7.3

- Data for the first 6 months of 2011 indicate that this trend is continuing with exports 8.5% higher than for the corresponding period in 2010.
- Unemployment is expected to remain high. The collapse in the output of the construction sector has created a major structural unemployment problem. Current trends in employment and unemployment are not encouraging. It is forecast that the rate of unemployment will average 14.3% in 2011 and 14.5% in 2012.
- Inflation is set to rise by 3.0% in 2011 and 1.0% in 2012.
- Private consumption is forecast to fall by 1.3% in 2011 and to remain constant in 2012.
- There remains an overhang of excess housing, office space and commercial space that is expected to depress investment over the coming years.
- The output of the construction sector is forecast to decline by further 10% in 2011 and grow by a moderate 0.6% in 2012.
- The Government's National Recovery Plan[8] targets a total adjustment of €15bn over four years with the objective of reducing the annual deficit to less than 3% of GDP by 2014[9].
- Of the €15bn, some €10bn will come from expenditure cuts and €5bn from tax increases.
- If these targets are achieved, the debt/GDP ratio will peak at 108% in 2013 before beginning a downward trajectory thereafter.

2.0 Market drivers

2.1 Construction activity

The demand for forest products is closely related to the level of house building, to timber frame use and to demand in key export markets[10]. However, in Ireland, the level of residential house completions has declined very significantly since 2006[11]. Euroconstruct forecasts that growth is unlikely to return to the sector until 2012 and then at a modest 1.6%. While Western Europe is expected to see a gradual pick up in construction activity in 2011, which will gather pace in 2012, it is forecast that Ireland, Spain and Portugal will do no more than stabilise at a deeply depressed level[12].

[7] http://www.oecd.org/document/0,3746,en_2649_201185_46462759_1_1_1_1,00.html
[8] http://www.budget.gov.ie/The%20National%20Recovery%20Plan%202011-2014.pdf
[9] http://www.davy.ie/content/pubarticles/nationalplan20101125.pdf
[10] http://www.coillte.ie/fileadmin/templates/pdfs/BaconReport.pdf
[11] http://www.environ.ie/en/PublicationsDocuments/FileDownLoad,20136,en.pdf
[12] www.euroconstruct.org

2.1.1 Irish housing output

The Irish housing market continues to stagnate. The continuing weak demand for new housing units is illustrated by the decline in planning permission being granted. In the fourth quarter of 2010, planning permissions were granted for 2,949 dwelling units, compared with 4,964 units for the same period in 2009, a decrease of 40.6%[13]. The actual and forecast output of the sector for the period 1990- 2012 is shown in Table 2.

Table 2**:** House completions in the Republic of Ireland (1990-2012f)[14,15,16]

	House completions	**Index 1990 = 100**
1990	19,539	1.00
1991	19,652	1.01
1992	22,464	1.15
1993	21,391	1.09
1994	26,863	1.37
1995	30,575	1.56
1996	33,725	1.73
1997	38,842	1.99
1998	42,349	2.17
1999	46,512	2.38
2000	49,812	2.55
2001	52,602	2.69
2002	57,695	2.95
2006	68,819	3.52
2004	76,954	3.94
2005	80,957	4.14
2006	93,419	4.78
2007	78,027	3.99
2008	51,724	2.65
2009	26,420	1.35
2010	14,602	0.75
2011f[17]	7,000	0.36
2012f	7,000	0.36

The timber frame sector has been a significant user of both construction timber and of wood based panels. Over the period 1992-2006, the use of timber frame housing in the Irish construction sector grew from a market share of 5% in 1992 to 30% in 2006[18,19]. However, since 2006, output has contracted in line with the overall fall in construction activity many timber frame manufacturers have closed or have taken short time.

[13] CSO, Planning Permissions Q4 2010, April 2011.
[14] House completion data is based on the number of new dwellings connected by the Electricity Supply Board (ESB) to its electricity supply network. These represent the number of homes completed and available and do not reflect any work in progress.
[15] Department of the Environment, Heritage and Local Government; www.environ.ie
[16] http://www.cso.ie/px/Doehlg/Dialog/Saveshow.asp
[17] http://www.environ.ie/en/Publications/StatisticsandRegularPublications/ConstructionIndustryStatistics/FileDownLoad,22919,en.pdf
[18] i.e. market share is taken as the percentage of new house /apartment completions which are constructed using timber frame methods.
[19] Source: Irish Timber Frame Manufacturers Association; www.itfma.ie

2.1.2 Repair, Maintenance and Improvement (RMI)

In 2010, the value of the Irish Repair, Maintenance and Improvement (RMI) sector was €4.37 billion; a 40% decline on 2006 (Table 3).

Table 3: Value of RMI output in the Republic of Ireland at constant 2008 prices (2006-2012f)[20,21].

	2006	2007	2008	2009	2010e	2011f	2102f
	€ m						
RMI residential-private housing	4,262.3	4,740.2	4,911.2	3,401.4	2,300.0	2,185.0	2,239.6
RMI residential-public housing	283.0	310.1	338.2	363.3	411.5	390.9	400.7
Private non-residential	1,172.4	1,259.3	889.1	339.2	166.3	149.7	149.7
Productive infrastructure	1,154.3	1,183.8	1,448.4	1,230.5	1,047.4	942.7	942.7
Social infrastructure	418.6	440.9	401.8	438.6	448.0	403.2	403.2
TOTAL	7,290.6	7,934.3	7,988.7	5,773.0	4,373.2	4,071.5	4,135.9
Index (2006 = 100)		1.09	1.10	0.79	0.60	0.56	0.57

2.2 UK construction market

The UK construction market is a key export market for forest products which are manufactured in Ireland. However in 2010, UK house completions declined by 14% over 2009 (Table 4).

Table 4: House starts and completions in the UK (1998-2010)[22].

Year	Starts	Completions	1998 = 100
1998-99	186,720	178,290	
1999-00	192,910	184,010	1.03
2000-01	183,480	175,370	0.98
2001-02	194,140	174,200	0.98
2002-03	197,110	183,210	1.03
2003-04	213,250	190,590	1.07
2004-05	225,050	206,620	1.16
2005-06	233,890	214,010	1.20
2006-07	222,610	219,050	1.23
2007-08	211,950	216,700	1.22
2008-09	111,410	171,880	0.96
2009-10	117,540	148,260	0.83

2.2.1 The UK market for forest products

The UK is a significant importer of sawn timber and panel products. In 2010, 5.7 M m^3 of sawn timber products were imported into the UK. However, in volume terms, the size of this market has declined by 32% over the period 2005-2010. Panel imports into the UK declined by 31% over the same period (Table 5)[23].

[20] http://www.environ.ie/en/PublicationsDocuments/FileDownLoad,21120,en.pdf
[21] E: estimate; F: forecast
[22] http://www.statistics.gov.uk/hub/business-energy/production-industries/building-and-construction
[23] IFFPA sectoral statistics update; Issue 3 – August 2010

Table 5: UK imports of sawn timber and wood-based panels (2005-2010)[24].

	Sawn timber	Wood-based panels	Total
	000 m^3/annum		
2005	8,341	3,939	12,280
2006	7,963	3,959	11,922
2007	8,469	3,859	12,328
2008	5,886	3,390	9,276
2009	5,172	2,500	7,672
2010	5,684	2,731	8,415

Ireland's market share of the UK sawn softwood timber market grew from 4.2% in 2007 to 6.3% in 2010. This is an impressive increase of 50% over a 4-year period. Moreover, in 2010, the Republic of Ireland was the fifth largest exporter of sawn softwood timber to the UK marketplace. There are further opportunities for the Irish sawmilling sector to grow its market share in the UK.

In 2010, the Irish panel products sector was the second largest exporter of particleboard and OSB to the UK marketplace. The sector increased its s market share by 270% over the 3-year period to 2010. Over the period 2007-2010, Ireland was the largest exporter of MDF to the UK marketplace, and its share of the market grew from 33% in 2007 to 44% in 2010.

2.3 €/£ Exchange rate

Historic movements in the €/£ exchange rate are shown in Table 6. Recent forecasts by the Royal Bank of Scotland Group (RBS) anticipate no major change in rates up to December 2012 (Table 6).

Table 6: Historic & forecasted €/£ exchange rates[25,26].

Historic	€/£	£/€	Forecast	€/£	£/€
Q1 2010	1.128	0.887	Q4 2011	1.150	0.870
Q2 2010	1.173	0.853	Q1 2012	1.160	0.862
Q3 2010	1.200	0.834	Q2/2012	1.160	0.862
Q4 2010	1.164	0.859	Q3/2012	1.160	0.862
Q1 2011	1.172	0.853	Q4/2012	1.160	0.862
Q2 2011	1.133	0.883			
Q3 2011[27]	1.137	0.880			

2.4 Demographics

The Irish Economic and Social Research Institute (ESRI) forecasts that net outward migration from the Republic of Ireland will total 70,000 in 2010 and 50,000 in 2011[28].

[24] http://www.forestry.gov.uk/pdf/trprod11.pdf/$file/trprod11.pdf
[25] http://www.bankofengland.co.uk
[26] Interest and exchange rate forecast, RBS Group, 8 September 2011; http://www.rbs.com/downloads/pdf/economic_insight/world/IER_Forecast_11_09_09.pdf
[27] Data on €/£ exchange rates for Q3 2011 is based on data available to 31/8/2011.
[28] http://www.esri.ie/irish_economy/quarterly_economic_commen/latest_quarterly_economic/

3.0 Policy measures

The following policy measures influence the Irish forestry & forest products sector.

3.1 Research, Technological Development & Innovation (RTDI)[29,30]

In 2010, RTDI/Research spending within the Irish forest products sector averaged 2%. Developments in RTDI policies that will affect the Irish forest and forest products sector include.

- The newly established Irish Energy Research Council will advise on priorities for Irish energy research to 2013 and for the longer term. The Council will coordinate existing energy Research Technological Development and Innovation (RTDI) activities and provide analysis and advice[31].
- Environment Research Sub-Programme
  - Some €93 million will be invested in environmental research over the period 2007 to 2013.
- The outcome of the Forfás National Research Prioritisation Exercise[32].

3.2 Forest research

The Irish forest research programme is managed by the Research Division of the Department of Agriculture, Food and the Marine. The COFORD Council (an advisory body consisting of representatives from the forestry sector) continues its work in advising the Department regarding the scope of forest research and provides advice to DAFM on issues including roundwood demand and supply. In 2010, the then Minister of State for Agriculture, Fisheries and Food, Seán Connick TD, announced grant assistance of €3 million for the COFORD research programme33,34. Projects funded were :

- Forest energy (2010-13),
- Facilitating the supply of woodchip from forest plantations for a major heat user,
- Eco-toxicological and growth promoting properties of wood ash,
- Combined research on riparian woodland,
- Broadleaf silvicultural programme and
- The development of low impact silvicultural systems in Ireland.

3.3 Support for afforestation

3.3.1 Afforestation grants and premiums

Afforestation grant and premium schemes provide a package to encourage the planting of forests by compensating forest owners for the costs of forest establishment and for the income foregone during the maturation of the timber crop. This scheme provides planting and establishment grants as well as annual premiums for new afforestation projects that are compliant with national and EU legislation, operational and environmental guidelines. The scheme is open to farmers and non-farmers. Forests established under this scheme must meet full silvicultural standards and must be managed as a commercial crop for the realisation of a profit[35,36,37].

In 2010, annual expenditure on forestry support schemes amounted to €114.5 million. A similar level of support is budgeted for 2011 (Table 7).

[29] Enterprise – Ireland; www.enterprise-ireland.com
[30] Ireland National Development Plan (NDP; 2007-2013; Government Publications, Dublin, Ireland; www.ndp.ie/viewdoc.asp?fn=/documents/NDP2007-2013/NDP-2007-2013-English.pdf
[31] http://www.dcenr.gov.ie/Energy/Office+of+the+Chief+Technical+Advisor/Irish+Energy+Research+Council.htm
[32] See http://www.forfas.ie/newsevents/news/title,6828,en.php
[33] http://www.coford.ie/iopen24/pub/pub/annualreport2007english.pdf
[34] http://www.coford.ie/iopen24/pub/newsletter/v10n6-june2010.doc
[35] http://www.teagasc.ie/forestry/financial_info/afforestation_grant_rates.asp
[36] http://www.teagasc.ie/forestry/docs/financial_info/AfforestationScheme2007_T&C.pdf
[37] http://www.teagasc.ie/forestry/docs/financial_info/forestrygrantrates_2009.pdf

Table 7: Annual expenditure on forest schemes by year and scheme type (2005-2011)[38].

	Forestry support schemes	Premiums	Afforestation	Total
	€ million			
2005	13.8	58.1	38.9	110.8
2006	17.4	60.0	33.6	111.0
2007	13.9	71.6	31.6	117.1
2008	12.0	74.3	29.4	115.7
2009	8.7	70.5	31.8	111.0
2010	6.6	72.3	35.5	114.4
2011				114.5

3.3.2 Native Woodland Scheme

The Native Woodland Scheme is an innovative package aimed at protecting and expanding Ireland's native woodland resource and associated biodiversity. It is a key biodiversity measure within Ireland's national forest policy. It also supports a wide range of other benefits and functions arising from native woodlands, relating to landscape, cultural heritage, wood and non-wood products and services, the practice of traditional woodland management techniques, environmental education, and carbon sequestration. There are two elements under the scheme, each with its own grants levels and premiums.

3.3.3 Forest roads scheme

The forest roads scheme provides opportunities to forest owners to improve access to forests. This is a once off payment of 80% of eligible costs to a maximum of €45/linear metre payable on satisfactory completion of the project[39].

3.4 Energy policy and support measures

3.4.1 National Renewable Energy Action Plan (NREAP)[40]

The National Renewable Energy Action Plan (NREAP) was published in July 2010. It sets out the Government's strategic approach and concrete measures to deliver on Ireland's 16% target under Directive 2009/28/EC. Climate change, energy security and competitiveness are inter-related challenges that will be addressed through the transforming of Ireland's economy from one based on fossil fuel dependence to a low carbon economy based around energy efficiency, renewable energy and smart networks.

The Government's ambitions for renewable energy and the related national targets are fully commensurate with the European Union's energy policy objectives and the targets addressed to Ireland under the Renewable Energy Directive. Ireland's energy efficiency ambitions (20% by 2020) as set out in the National Energy Efficiency Action Plan are duly reflected in the NREAP.

The areas of NREAP which affect the wood biomass sector are renewable heat (RES-H) and renewable electricity (RES-E). These are now outlined.

[38] A total of €114.5 million in funding has been allocated for capital and current expenditure for 2011. This should facilitate an afforestation programme of between 7,500 and 8,000 ha. Source: DAFF http://www.agriculture.gov.ie/media/migration/publications/2011/AR02011.pdf

[39] http://www.teagasc.ie/forestry/docs/financial_info/roadscheme_2008.pdf

[40] http://www.dcenr.gov.ie/NR/rdonlyres/0E9749D9-BB72-49D6-B5BC-DC4EE41A6302/0/DraftNREAPv17June2010forwebsite.pdf

Renewable heat (RES-H)

The Government has set a target of 12% renewable heat by 2020. The related programmes and supports are designed to support the achievement of this target. For historical, geographical and demographic reasons, renewable heat poses considerable challenges for Ireland, which the Government is determined to address.

Renewable electricity (RES-E)

The Government has set a target of 40% electricity consumption from renewable sources by 2020. In the last 5 years in particular, Ireland has made huge strides in accelerating renewable generation (RES-E). In the 2001 European RES-E Directive, Ireland was set a target of moving from 3.6% RES-E to 13.2% RES-E by 2010. Ireland achieved 14.4% RES-E in 2009 and is on track to exceed the national target of 15% in 2010.

The main support scheme for RES-E is REFIT (Renewable Energy Feed-In Tariff)[41]. This scheme currently covers onshore wind (large and small scale), small scale hydro, biomass landfill gas and other biomass. Subject to state aid clearance, REFIT will also be offered for Anaerobic Digestion/High Efficiency CHP, ocean (wave and tidal) energy and offshore wind (see 3.3.5).

3.4.2 Renewable Energy Feed-In Tariff (REFIT)[42]

The REFIT scheme provides support to renewable energy projects over a 15 year period. The new support mechanism differ from the previous programme in that it operates as a fixed feed-in tariff mechanism rather than as a competitive tendering process. Applicants to REFIT must have planning permission and a grid connection offer for their project

In May 2010, a revised set of REFIT tariffs for biomass combustion, anaerobic digestion (AD) and biomass fuelled CHP were announced by the Department of Communications, Energy and Natural Resources (SEAI)[43]. These will provide grant support to assist the deployment of CHP systems which are fuelled by biomass (Table 8).

Table 8: REFIT tariffs under the new SEAI CHP/AD CHP schemes[44].

	REFIT tariff €/MWh[45]
AD CHP ≤500 kW	150
AD CHP >500 kW	130
AD (non CHP) ≤500kW	110
AD (non CHP) >500kW	100
Biomass CHP ≤1500kW	140
Biomass CHP >1,500kW	120
Biomass combustion, using energy crops	95
Biomass combustion using all other biomass	85

As of August 2011, these REFIT tariffs have not yet been finalised. They are subject to State Aids clearance which is awaited from the European Commission[46].

41 http://www.dcenr.gov.ie/Energy/Sustainable+and+Renewable+Energy+Division/Electricity+from+Renewables+inc+REFIT+and+AER.htm

42 ec.europa.eu/energy/energy_policy/doc/.../renewables_ie_en.pdf

43 http://www.dcenr.gov.ie/Energy/Sustainable+and+Renewable+Energy+Division/Electricity+from+Renewables+inc+REFIT+and+AER.htm

44 http://www.seai.ie/Grants/Biomass_CHP_Anaerobic_Digestion_CHP_Call_for_Proposals/

45 WWh: Mega watt hour.

46 http://www.seai.ie/Renewables/Bioenergy/Renewable_Energy_Feed_In_Tariff/

3.4.3 Energy Performance of Buildings Directive (EPBD) [47]

Since January 2007, in line with the European Commission's Energy Performance of Buildings Directive (Directive 2002/91/EC)[48], the energy efficiency of all new houses and apartments in the Republic of Ireland is assessed and certified by a registered building energy rating (BER) assessor. From 2009, this scheme has been extended for existing dwellings, when they are offered for sale or lease. The BER provides information on the dwelling's energy performance and can be used to demonstrate improvements in energy efficiency over time[49].

3.5 National renewable energy targets

National renewable energy targets are shown in Table 9.

Table 9: Renewable energy targets to 2020 by type[50].

	2015	2016	2017	2018	2019	2020
	% energy use in sector					
Renewable heat (RES-H)	8	9	10	10	11	12
Renewable electricity (RES-E)	34	36	38	40	42	44
Renewable transport (RES-T)	7	7	9	9	10	11
Overall RES	12	12	13	14	15	16

3.6 Demand for forest-based biomass for energy use to 2020[51]

Overall demand for roundwood is forecast to increase from 4.295 M m^3 in 2011 to 6.038 M m^3 by 2020 (Table 10).

Table 10: Estimated roundwood demand on the island of Ireland in 2011 and 2020.

	2011	2020
	000 m^3 OB	
Conventional demand[52]	3,456	3,830
Demand for forest-based biomass for energy production	1,589	3,084
Residues from conventional demand which are used to meet energy demand[53,54]	-750	-876
TOTAL	4,295	6,038

Based on scenario modelling[55], 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 GJ. Forest-based biomass and waste resources could deliver about 9 M GJ each, with agricultural residues having the potential to

[47] www.sei.ie/epbd/
[48] ec.europa.eu/energy/efficiency/buildings/buildings_en.htm
[49] http://www.dcenr.gov.ie/NR/rdonlyres/FC3D76AF-7FF1-483F-81CD-52DCB0C73097/0/NEEAP_full_launch_report.pdf
[50] http://www.mnag.ie/workshop_2010_7_2172276902.pdf
[51] The expected demand for forest–based biomass to 2020 is based on a scenario model which was developed by SEAI; www.seai.ie , which is based on data available as of 2/11/2010.
[52] Conventional demand is roundwood used (for processing) by the sawmilling and by the boardmill sectors.
[53] The use of post consumer recovered wood (PCRW) is excluded
[54] A portion of sawmill and panel residues is used for process drying and for the production of energy. In 2011, it is estimated that 750,000 m^3 OB of such residues will be thus used on the island of Ireland. To avoid double counting, the demand for forest-based biomass (for energy production) is discounted by 750,000 m^3 OB. It is estimated that by 2020 the use of sawmill/panel residues for energy production will have increased to 876,000 m^3 OB.
[55] This is based on data available as of 2/11/2010.

supply a further 8 M GJ. The balance of supply is likely to comprise indigenous purpose-grown energy crops and imported biomass[56].

The demand for forest-based biomass for energy in 2011 and in 2020 is an aggregate of the demand for combined heat & power (CHP), heat only and co-firing. Expected demand levels in 2011 and 2020 are shown in Table 11. 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 (Table 13). 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. To meet the stated targets for renewable energy by 2020, the gross demand for forest-based biomass for energy production will increase 2-fold, from 1.589 M m^3 in 2011 to 3.084 M m^3 in 2020. Such a steep increase in wood biomass demand will require a significant investment in the sectoral supply chain, and will significantly increase the competition for wood fibre.

Table 11: Estimated demand for forest-based biomass for energy production on the island of Ireland in 2011 and 2020[57].

	2011	**2020**	**2011**	**2020**
	Estimated demand 000 m^3 OB/annum		**% of total demand**	
Combined heat & power (CHP)	388	1,550	24	50
Heat only	1,092	1,425	69	46
Co-firing	109	109	7	4
TOTAL	**1,589**	**3,084**	**100**	**100**

Achieving renewable energy targets will require significant investment in biomass fuelled combined heat and power (CHP). Before becoming operational, such facilities have at least a 2-year lead-in period.

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3.7 Biomass supply streams

Of the 53 M GJ of biomass expected to be required by 2020, 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 would be made up of indigenous purpose-grown energy crops and imported biomass (Table 12)[58].

Table 12: Estimated supply streams which will be available to meet the biomass demand for energy production in the Republic of Ireland in 2020[59].

	Estimated annual supply	
	Million GJ	**%**
Biomass segregated from waste stream	9	17
Forest-based biomass	9	17
Agricultural residues	8	15
Indigenous purpose-grown energy crops and imported biomass	27	51
TOTAL	53	100
Roundwood equivalent[60] at 40-45% moisture content M m^3	7.5	
Roundwood equivalent at 4-45% moisture content M tonnes	5.5	

[56] This data is based on work which was undertaken by the COFORD Supply Group (2010).
[57] The expected demand for forest–based biomass to 2020 is based on a scenario model which was developed by SEAI; www.seai.ie, which is based on data available as of 2/11/2010.
[58] This supply data is base on work which was undertaken by the COFORD Roundwood Supply Group (2010) http://www.coford.ie/media/coford/content/publications/projectreports/roundwood/Roundwood%20Prod%20Forecast%20LR%20June%202011.pdf
[59] Data source: SEAI; www.seai.ie
[60] http://www.teagasc.ie/forestry/docs/events/Roundwood_S_D_Eugene_Hendrick.pdf

3.8 Meeting biomass energy targets

Ireland's progress towards meeting its biomass energy targets is discussed below.

3.8.1 Renewable heat (RES-H)

In the early 1990's there was a decline in the contribution from renewable energy to thermal energy from 2.6% in 1990 to 2.1% in 1995. Between 2000 and 2007 RES-H grew from 2.4% to 3.7% before falling back slightly in 2008 to 3.6%. The provisional RES-H figure for 2009 is 3.9%. This growth in renewable energy (dominated by biomass) that has occurred is mostly due to increased activity in the industrial sub-sectors where the biomass is mostly used (i.e. in the forest products and food sectors). There has also been recent growth in renewable energy use in the residential and services sectors with the introduction of grant support schemes. However, the increases here have to date been small in volume with respect to overall thermal renewable energy consumption. Against this backdrop, the short term target of achieving a 5% renewable energy contribution to Ireland's thermal energy by 2010 is very challenging[61].

3.8.2 Renewable electricity (RES-E)

In 2009, the share of electricity which was generated from renewable energy sources (RES-E) was 14.3%[62]. This means that Ireland has surpassed the EU interim target of 13.2% RES-E by 2010. The data shown in table 9 suggests that Ireland is firmly on track to meet the Government target of 15% of all electricity generation to be from renewable energy sources by 2010. A significant milestone was achieved in 2009 was that wind energy accounted for over 10% of gross electricity generation (Table 13)[63].

Table 13: Renewable energy as a percentage of gross electricity consumption[64].

	1990	1995	2000	2005	2006	2007	2008	2009
		Renewables as a % of gross electricity						
Hydro	4.9	4.1	3.6	2.3	2.5	2.3	3.3	3.2
Wind		0.1	1.0	4.0	5.6	6.7	8.1	10.5
Biomass			0.4	0.5	0.4	0.5	0.5	0.6
TOTAL	4.9	4.2	5.0	6.8	8.5	9.5	11.9	14.3

3.9 National climate change strategy (2007-2012) [65]

Ireland signed the United Nations Framework Convention on Climate Change (UNFCCC[66]) in June 1992 and ratified it in April 1994. As a signatory to the Kyoto Protocol[67], Ireland is committed to limiting its greenhouse gas (GHG) emissions to 13% above the 1990 level by 2008-2012.

The Irish forest sector has a key role to play in addressing climate change, through carbon sequestration and through the development of renewable energy resources. Forest areas established as a result of grant-aid under State/European Union (EU) funded afforestation schemes since 1990 are expected to contribute an annual average emission reduction of 2.4 million tonnes of carbon dioxide (CO_2) over the Kyoto period (2008-2012). There is also significant potential for wood fuel to displace fossil fuel, particularly in the generation of heat in industrial, commercial, domestic and institutional markets. In doing so, it can help reduce Ireland's GHG[68] emissions. Since 2006, the use of wood biomass energy in Ireland has resulted in a total emissions saving of 2.03 million tonnes of carbon dioxide (CO_2).

[61] http://www.seai.ie/Publications/Statistics_Publications/SEI_Renewable_Energy_2010_Update/RE_in_Ire_2010update.pdf
[62] 2009 figures are provisional
[63] http://www.seai.ie/Publications/Statistics_Publications/SEI_Renewable_Energy_2010_Update/RE_in_Ire_2010update.pdf
[64] Source: SEAI; www.seai.ie and Eirgrid; www.eirgrid.com
[65] www.environ.ie/en/PublicationsDocuments/FileDownLoad,1861,en.pdf
[66] *unfccc.int*
[67] *unfccc.int/kyoto_protocol/items/2830.php*
[68] GHG: Green House Gas.

4.0 Developments in forest products markets

4.1 Irish roundwood harvest

In 2010, 2.7 million cubic metres of roundwood was processed in the Republic of Ireland. Private forest harvest grew by 356% over 2009 (Table 14) as result of increased demand levels.

Table 14: Roundwood available for processing (2008-2010)[69].

	2008	2009	2010
	000 m^3 OB		
Log imports less exports	106	-63	28
Coillte	2,279	2,354	2,217
Private	118	130	463
Roundwood processed	2,503	2,421	2,708
Of which			
Sawlog	1,619	1,602	1,603
Stakewood	80	88	118
Pulp	804	731	987

4.2 Private forest estate

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 and they own 340,000 ha.

During the period (1981-2010), over 247,000 ha of forest were established by private growers in Ireland[70], 220,000 ha being planted since 1990. Data for 2010 shows that the rate of afforestation increased over the previous year and was the highest since 2006 (Table 15).

Table 15: Afforestation in the Republic of Ireland by ownership category[71].

	State	Private	Total
	ha		
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

2010 was one of the worst years on record for forest fires, with 800 ha of Coillte's forests lost during the year[72]. There was also significant fire damage to private woodlands.

[69] EUROSTAT Joint Forest Sector Questionnaire (2009-2011).
[70] http://www.teagasc.ie/forestry/docs/technical_info/articles/Teagasc_forestry_situation_outlook_2010.pdf
[71] http://www.agriculture.gov.ie/forestservice/forestservicegeneralinformation/foreststatisticsandmapping/afforestationstatistics/
[72] http://www.thejournal.ie/fires-destroyed-780-hectares-of-forestry-last-year-in-ireland-2011-02/

4.3 Forecast of roundwood supply

Over the next 17 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 3.8 million. Almost all of the increase in supply is set to come from privately-owned forests in the Republic; those areas established over the past 25 years on foot of state/EU and private sector investment (Table 16). Considerable scope exists to expand wood energy production, and this is in addition to supplies for sawmilling and board manufacture[73].

Table 16: Forecast of potential net realisable volume production by assortment category from the private forest estate in the Republic of Ireland (2011-2028)[94].

	Tip -7cm	7-13 cm	14-19 cm	20cm +	Total
	000 m^3 OB				
2011	39	225	90	55	409
2012	39	225	102	57	423
2013	35	190	106	73	404
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

Realising such an 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.

73 http://www.coford.ie/media/coford/content/publications/projectreports/roundwood/Roundwood%20Prod%20Forecast%20LR%20June%202011.pdf

4.4 Mobilising roundwood supply

Recent work undertaken by COFORD[74] showed 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.

4.5 Sources & uses of wood fibre

In 2010, there was a strong demand for wood fibre from sawmills, board mills and from the emerging wood energy sectors. The wood fibre sources which provide the Irish forest industry with its raw material (2007-2009) are shown in Table 17, while the products produced by the sector for the same period are shown in Table 18.

Table 17: Sources of wood fibre (2008-2010)[75].

	2008	**2009**	**2010**
	000 m^3 OB		
Roundwood	2,503	2,421	2,708
Sawmill residues	846	838	842
Wood-based panel residues[76]	106	94	101
Post-consumer recovered wood	208	200	280
TOTAL	3,663	3,553	3,931

Table 18: Uses of wood fibre (2008-2010)[81].

	2008	**2009**	**2010**
	000 m^3 OB		
Sawmilling	1,619	1,602	1,603
Wood-based panels	1,462	1,286	1,400
Round stakes	80	88	118
Use of forest-based biomass energy by the forest products sector[77]	378	431	554
Other uses			
Horticultural bark mulch	44	54	27
Wood chip for commercial biomass use	30	55	39
Exports of forest product residues	50	37	58
Other uses			132
TOTAL	3,663	3,553	3,931

[74] http://www.coford.ie/iopen24/pub/lynn.pdf.pdf
[75] UNECE Joint Wood Energy Enquiry (2009-2011) & EUROSTAT Joint Forest Sector Questionnaire (2009-2011).
[76] Includes bark (from the debarking lines at Medite & Smart*Ply)* and sawdust from the sanding of wood-based panels.
[77] Wood biomass energy is used by the forest products sector for process drying, heating and for the generation of electricity.

4.6 Wood residues

Wood residues are primarily used as feedstock for sawmill kilns and by the WBP sector. Post-consumer recovered wood (PCRW) is increasingly being used for wood energy and for the manufacture of particleboard. Over the period 2008-2010, the availability of wood residues has increased by 18% (Table 19).

Table 19: Availability of wood residues (2008-2010)[78].

	2008	2009	2010
	000 m^3 RWE[79]		
Bark	203	215	222
Wood chip	470	517	517
Sawdust	152	200	204
Post-consumer recovered wood	208	200	280
TOTAL	1,033	1,132	1,223

4.7 Firewood use in Ireland

A recent study[80] has shown that the Irish market for firewood has grown by 35% over the period 2006-2010. In 2010, almost 200,000 m^3 of firewood (roundwood equivalent) was sold in Ireland, at a value of €29 million. The estimated production level, based on new methodologies[81], is significantly above previous estimates, and shows that the Irish firewood market is providing a steady and a growing market for farm forest thinnings.

Table 20: Estimated volume and value of the domestic firewood market in Ireland (2006-2010)[82].

	000 m^3 OB	€ million
2006	147	21.35
2007	159	23.03
2008	171	24.83
2009	184	26.75
2010	199	28.80

4.8 Voluntary forest certification

4.8.1 Schemes

Since May 2001, Coillte's forests have been certified to the Forest Stewardship Council (FSC) scheme. In 2007, Coillte had its Forest Stewardship Council (FSC) certificate for responsible forest management renewed until 2012 by Soil Association Woodmark, an independent firm of environmental auditors[83]. A small number of privately-owned forests have also been certified by FSC.

The PEFC Ireland Scheme for Sustainable Forest Management, which incorporates the PEFC Irish Forest Certification Standard, was submitted to the PEFC Council in December 2010 for endorsement by

[78] UNECE Joint Wood Energy Enquiry (2009-2011).
[79] RWE: Roundwood equivalent
[80] EUROSTAT Joint Forest Sector Questionnaire (JFSQ) as undertaken by drima marketing on behalf of the Department of Agriculture, Marine and Food.
[81] Up to 2010, the volume of roundwood harvested for firewood use was estimated by expert opinion and survey data. In 2011, a new approach was used, whereby the Household Budget Survey (HBS) estimate of the expenditure by householders on firewood was used to ascertain expenditure on firewood in each year over the period 2007-2010. The number of households in Ireland was taken from 2006 and 2011 census[81] data. This was combined with the HBS data to estimate the volume and value of the domestic firewood market in Ireland (Table 23). Firewood harvest for 2011 will be estimated using new HBS data. These data are being processed and evaluated by the CSO and will be available by early 2012.
[82] drima market research study
[83] http://www.coillte.ie/fileadmin/user_upload/pdfs/2007_Annual_Report/CEO_review.pdf

PEFC International. The Irish Forest Certification Standard is seeking endorsement by PEFC for the first time. Interested parties are encouraged to comment on the new Standard by 22 September 2011[84].

The PEFC Irish Forest Certification Standard was prepared during an intensive 21-month period in an inclusive and transparent process involving representatives from economic, social and environmental interests with knowledge of the Irish forestry sector. This new Standard has been designed to comply with existing Irish and European forest management guidelines and legislation, including the Pan-European Operational Level Guidelines for Sustainable Forest Management agreed at the third Ministerial Conference on the Protection of Forests in Europe in Lisbon in 1998. The standard was subject to national public consultation and pilot-testing.

4.8.2 Certified forest products

All major sawmills and panel mills have chain-of-custody procedures for FSC certification. The demand for certified timber products in the Irish market is still relatively small and there is no strongly developed public procurement policy for them.

4.9 Value-added products: wooden furniture

In 2010, wooden furniture to the value of €168 million was imported by the Republic of Ireland. However, the value declined by 47% over the period 2008-2010. The value of furniture exported from Ireland declined by 26% over the same period (Table 21).

Table 21: The value of wooden furniture imports & exports by Ireland (2008-2010)[85].

	2008	2009	2010
	€ million		
Imports	317	177	168
Exports	35	24	26
Net imports	282	153	142

4.10 The view of the forestry and forest products sector

The Irish Forestry and Forest Products Association (IFFPA)[86] states that Ireland's forestry and forest products sector is a success story, employing 16,000 people across the state. It comprises a vibrant forest products sector, with state-of-the-art boardmills and sawmills, exporting a high proportion of output. Considerable potential exists to expand production; half the forest estate is less than 25 years old, and further expansion of forest cover is planned. The sector has adapted quickly to regain its competitive strength and is now well positioned to make a significant contribution to economic recovery. Over 16,000 are employed in the sector, mainly in rural Ireland, and this could increase significantly if the appropriate supports and afforestation programmes were in place[87].

IFFPA welcomed the Government's commitment to achieve an annual afforestation level of almost 15,000 hectares by 2015. It said that along with this was a requirement for adequate investment to allow for the appropriate infrastructure development of roads and entrances ensuring harvesting of raw materials to feed wood processing and energy markets. Timber mobilisation from the private sector is a challenge to be addressed in partnership with Government. It was the viewpoint of IFFPA that a continuation of the programme to improve broadleaved crops was also essential.

[84] http://www.pefc.org/index.php/news-a-media/general-sfm-news/news-detail/item/793-ireland-requests-pefc-endorsement
[85] Source: EUROSTAT JFSQ for Ireland (2009-2011).
[86] www.iffpa.ie
[87] http://www.iffpa.ie/Sectors/IFFPA/IFFPA.nsf/vPages/Press_and_Publications~an-overview-of-the-irish-forestry-and-forest-products-sector-2010-25-11-2010/$file/IFFPA%20Overview%202010.pdf

4.11 Trade in forest products

In value terms, exports of wood products grew by 18% in 2010 to reach €286 million, €179 million of which comprised wood-based panel exports. The balance was made up of paper and sawn timber exports[4]. This was 10% increase over 2009 (Table 25). Export volumes of wood-based panels and sawn timber rose by 14% and 10% in 2010 respectively.

4.12 Balance of trade

Since 2009 Ireland has become a net exporter (in volume terms) of sawn timber (Table 23), largely due to the collapse of the domestic construction market and increased levels of exports to the UK. The value of wood-based panel exports (a net export category for some time) rose by over 40% in 2010 (Table 22).

Table 22: Timber trade (2007-2010)[88].

	Imports							
	2007	**2008**	**2009**	**2010**	**2007**	**2008**	**2009**	**2010**
	000 cubic metres UB				**€ million**			
Sawn timber	724	412	232	242	251	141	66	74
Wood-based panels	358	264	181	166	146	108	68	65
	000 tonnes							
Pulp products	31	29	32	41	22	20	22	31
Paper and paper-board products	546	526	379	370	467	520	308	313
TOTAL					886	789	464	483
	Exports							
	000 cubic metres UB				**€ million**			
Sawn timber	381	389	564	621	71	54	51	63
Wood-based panels	757	614	580	660	262	195	147	179
	000 tonnes							
Pulp products	0	2	0	1	0	0	0	0
Paper and paper-board products	85	77	45	33	92	69	45	44
TOTAL					425	318	243	286

Table 23: Balance of trade in the value of forest products (2007-2010)[89].

	2007	**2008**	**2009**	**2010**
	€ million			
Sawn timber	-180	-87	-15	-11
Wood-based panels	116	87	79	114
Pulp products	-22	-20	-22	-31
Paper and paper-board products	-375	-451	-263	-269
TOTAL	-461	-471	-221	-197

[88] Includes import/export figures for sawn timber, wood-based panels and pulp/paper products only. Data are taken from Ireland's EUROSTAT JFSQ returns (2008-2011). Roundwood, sawmill residues and secondary processed timber products are not included. Trade data for the JFSQ is provided by the Central Statistics Office (CSO); www.cso.ie

[89] EUROSTAT JFSQ (2008-2011).

4.13 Sawn timber

Nine companies form the core of the Irish sawmilling sector (Table 24), providing the main market for the sawlog and stakewood which is harvested from Irish forests. The majority of the logs which are supplied to Irish sawmills are certified to FSC[90,91] or to PEFC[92] standards. In addition, Irish sawmills have their own chain of custody (CoC) certification. This enables them to certify their products to FSC or PEFC standards. The end user (of Irish produced sawn timber products) can therefore be confident that the timber products which they source from Irish sawmillers meet strict environmental criteria. These criteria are independently verified.

In 2010 sawmills processed 1.7 million m^3 of roundwood, generating 0.8 million m^3 of sawn timber[93]. In line with the reduction in construction activity, the domestic sawn timber market has declined by 46% over the period 2008-2010.

The primary products of the sawmilling sector are construction/structural timber, pallet/packaging timber and fencing products. In past years Irish 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 developed new products and markets such as; planed all over (PAO), eased edge timber studding[94], fencing products[95] and acoustic barriers[96].

The development of new products has required considerable investment in both sawmill processing facilities and in marketing and sales development in key export markets. In 2010, the exports of Irish sawn timber (in volume terms) increased by 10% over 2009 (Table 31). Irish sawn timber exports have traditionally been dominated by pallet and fencing products. However, in recent years, structural/construction timber exports have increased significantly. These are largely sold in Northern Ireland and in GB. Over the period 2000-2010, the volume of sawn softwood which has been exported by the sawmill sector has increased by 227% (Table 26)[97]. New markets for sawn timber have been developed in France, the Netherlands and Turkey.

Table 24: Main sawmills operating on the island of Ireland by size and location[98].

Sawmill size	Sawmill name	Location(s)	Website (if applicable)
Large	Balcas Ltd.	Enniskillen, Co Fermanagh, Northern Ireland	www.balcas.com
Large	ECC Timber Products Ltd./ Earraí Coillte Chonnacht Teoranta	Corr na Móna, Co Galway	www.ecc.ie
Large	Glennon Brothers Ltd.	Longford, Co Longford Fermoy, Co Cork	www.glennonbrothers.ie
Large	Grainger Sawmills Ltd.	Enniskeane, Co Cork	www.graingersawmills.com
Large	Murray Timber Group (MTG)	Ballygar, Co Galway Ballon, Co Carlow	www.mtg.ie
Medium	Coolrain Sawmills Ltd.	Coolrain, Co Laois	www.gardendeckingfencing.ie
Medium	Laois Sawmills Ltd.	Portlaoise, Co Laois	None
Medium	Palfab Ltd.	Lissarda, Macroom, Co Cork	www.palfab.com
Medium	Woodfab Timber Ltd.	Aughrim, Co Wicklow	www.woodfabtimber.ie

[90] FSC: Forest Stewardship Council; www.fsc.org
[91] The Forest Stewardship Council (FSC) is an independent, non Governmental, not for profit organisation established to promote the responsible management of the world's forests; www.fsc.org
[92] www.pefc.org
[93] Includes the production of round stake.
[94] http://www.mtg.ie/construction_timber.html
[95] http://www.glennonbrothers.ie/glenfence.html
[96] http://www.woodfabstructures.ie/acoustic.html
[97] Central Statistics Office; www.cso.ie
[98] Source: Drima market research survey.

Timber products which are produced by the Irish sawmill sector serve three main markets: construction/structural, pallet/packaging and fencing. The size of these markets is shown in Table 25.

Table 25: Irish sawn timber output by product and year (2007-2010)[99].

	2007[100]	**2008**[101]	**2009**[102]	**2010**[92]
	000 cubic metres UB			
Construction/structural	374	267	292	293
Pallet/packaging	325	232	254	255
Square edged fencing	266	190	208	209
Round stakes	164	51	80	107
Other	19	13	15	15
TOTAL	1,148	753	849	879

Table 26: Exports of sawn softwood from the Republic of Ireland (2000-2010)[103].

2000	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**
000 m^3 UB										
274	336	485	502	495	428	447	374	387	564	621

Sawn softwood imports

The top ten softwood exporters to Ireland for the period 2007-2010 are detailed in Table 27.

Table 27: Top 10 softwood exporters to Ireland (2007-2010)[104].

	Volume of sawn softwood exported to Ireland in 000 m^3 UB			
	2007	**2008**	**2009**	**2010**
Sweden	122	90	44	42
Great Britain	80	35	33	37
Germany	72	62	22	26
Finland	70	33	13	11
Russia	67	37	22	18
Latvia	63	25	16	33
Northern Ireland	47	28	21	27
Brazil	18	2		
Estonia			3	4
Canada	17	4	2	1
Belgium				2
Austria	7	1	5	
% of total imports	92	91	95	98

[99] This data is for the Republic of Ireland (RoI)
[100] http://www.coford.ie/iopen24/pub/ccn-pp18.pdf
[101] http://www.coford.ie/iopen24/pub/ccn09-pp21.pdf
[102] Source: EUROSTAT Joint Forest Sector Questionnaire (JFSQ) [2011]
[103] Central Statistics Office; www.cso.ie
[104] Source: Central Statistics Office (CSO); www.cso.ie

Sawn hardwood

- Domestic sawn hardwood production is in-significant; just 191 m^3 of sawn hardwood was produced in 2010.
- In 2010, Ireland imported 37,000 m^3 of sawn hardwood, a 9.75% reduction on 2009.
- Imports had a value of €26.4 million.
- The top ten hardwood exporters to Ireland over the period 2007-2010 are shown in Table 28.

Table 28: Top 10 hardwood exporters to Ireland (2007-2009)[105].

	Volume of sawn hardwood exported to Ireland in 000 m^3 UB			
	2007	**2008**	**2009**	**2010**
Cameroon	35	12	13	10
United States	27	16	9	11
Ivory Coast	11	6	2	2
Northern Ireland	11	6	6	5
China	10	4	1	1
Canada	5	2	1	1
Sweden	5	5	1	0.5
Great Britain	4	4	2	2
Congo			1	
Ghana	3	1		
Central African Republic				1
Germany	3	2	1	1
% of hardwood imports	93%	89%	93%	96%

4.14 Wood-based panels (WBP)[106]

Four wood-based panel manufactures operate in Ireland (Table 29). However, in early 2011, Finsa Forest Products announced that it would cease production of particleboard at its Scariff facility. However, it will continue to overlay MDF and particleboard which it will import from its sister factories in Iberia[107].

Table 29: Wood-based panel manufacturers in the Republic of Ireland[108].

Company	**Established**	**Product(s)**	**Location**
Finsa Forest Products	1984	Chipboard/Particleboard	Scariff, Co Clare
Masonite Ireland	1997	Thin MDF/Moulded door facings	Drumsna, Co Leitrim
Medite-Europe	1983	Medium Density Fibreboard (MDF)	Clonmel, Co Tipperary
Smart*Ply* Europe	1995	Oriented Strand Board (OSB)	Slieverue, Co Kilkenny

In 2010, 758,000 m^3 of wood-based panels was produced from 1.40 million m^3 of wood fibre[109]. This was a 7% increase over 2009. 87% of the WBP manufactured in the Republic of Ireland were exported (660,000 m^3 to a value of €179 million; Table 30). Exports were dominated by Oriented Strand Board (OSB) and Medium Density Fibreboard (MDF), which are manufactured by Masonite, Medite and by Smart*Ply*. Key export markets for WBP are the UK and the Benelux countries. In 2010, the Irish WBP

[105] Sources: CSO Trade Statistics www.cso.ie & EUROSTAT JFSQ for Ireland (2009-2011)
[106] EUROSTAT /FAO Joint Forest Sector Questionnaire (JFSQ) for Ireland (2009-2011)
[107] http://www.clarechampion.ie/index.php?option=com_content&view=article&id=4893:52-staff-facing-redundancy-at-finsa&catid=60:east-clare&Itemid=56
[108] COFORD Woodflow for Ireland (2010).
[109] This includes pulpwood, wood chips, sawdust and post-consumer recovered wood.

sector was the second largest exporter of particleboard and OSB to the UK and the largest exporter of MDF to the UK[110].

Table 30: Production and exports of wood-based panels (2008-2010)[111].

	2008	2009	2010
Panel production (000 m^3 UB)	779	709	758
Panel exports (000 m^3 UB)	614	580	660
Panel exports (€ million)	195	147	179

4.15 Pulp & paper

- All pulp and paper used in the Irish market is imported[112].
- Pulp & paper represent 71% of Irish forest product imports (by value).
- In 2010, 411,000 metric tonnes of pulp and paper products were imported, the same level as 2009.
- Imports were valued at €344 million.
- In 2010 504,000 tonnes of recovered paper was exported.

4.16 Builders merchanting

The reduction in Irish building output is having a significant knock on effect on the Irish builder's merchant sector and on its suppliers.

4.17 Wood biomass energy

4.17.1 An overview of forest-biomass energy production[113,114]

There is growing interest in the Irish bio-energy sector. This is being promoted by the Sustainable Energy Authority of Ireland (SEAI)[115] and DAFF/COFORD[116]. The output[117] of the Irish forest-based biomass sector is currently dominated by the wood processing sector. In 2010;

- The output of the sector grew by 16%.
- The Irish forest industry used 554,000 m^3 of wood fibre.
- Heat generated was 5,972 Terra Joules (TJ).
- Electricity generated was 372 Terra Joules (TJ). This includes the use of forest-based biomass for co-firing with milled peat by Bord na Móna, Edenderry[118].

4.17.2 Forest-based biomass input & energy output

The use of forest-based biomass[119] in Ireland is dominated by the forest products sector, which uses it for process drying and for energy purposes. Since 2006, the use of forest-based biomass by commercial and domestic users has risen considerably (Table 27). The average annual growth rate of the domestic use of forest-based biomass between 2005 and 2009 was 18%[120].

[110] EUROSTAT; ec.europa.eu/Eurostat
[111] EUROSTAT Joint Forest Sector Questionnaire (2009-2011).
[112] EUROSTAT /FAO JFSQ Return for Ireland (2009-2011).
[113] Harvesting and processing forest biomass for energy production in Ireland; The forest energy 2006 Programme; Pieter D. Kofman and Tom Kent; COFORD; www.coford.ie/iopen24/pub/product_info.php?products_id=966605
[114] UNECE Joint Wood Energy Enquiry (JWEE) for Ireland; 2007-2009
[115] www.seai.ie
[116] http://www.woodenergy.ie/iopen24/
[117] EUROSTAT /FAO Joint Forest Sector Questionnaire (JFSQ) for Ireland; 2008-2009
[118] http://www.edenderrypower.ie/
[119] This includes the use of firewood, wood residues and post-consumer recovered wood for the production of energy.
[120] http://www.seai.ie/Publications/Statistics_Publications/SEI_Renewable_Energy_2010_Update/RE_in_Ire_2010update.pdf

The use of forest-based biomass energy is dominated by the forest products sector, which uses it for process drying and for energy purposes. Since 2007, the use of forest-based biomass energy by commercial and domestic users has risen considerably (Table 31). Between 2005 and 2009, the domestic use of forest-based biomass grew by 18% per annum[121]. The output of this energy sector is shown in Table 32.

Table 31: Use of forest-based biomass for energy (2008-2010)[122].

	End use	**2008**	**2009**	**2010**
		000 m^3 OB		
Firewood	Domestic heating	171	184	199
Roundwood chipped in forest	Commercial heating	63	53	39
Short rotation coppice (SRC)	Commercial heating	1	4	1
Wood pellets & briquettes	Domestic /commercial heating	82	110	121
Charcoal	Domestic use	2	2	2
Wood biomass energy use by the energy[123] & forest products industry	Process drying/heating /combined heat & power	384	438	554
TOTAL		703	791	916
% forest products use.		55	55	60

Table 32: Output of the forest-based biomass energy sector (2008-2010)[124].

	Unit	**2008**	**2009**	**2010**
		Output		
Heat	TJ	4,857	5,273	5,972
Electricity	TJ	112	240	372
TOTAL	TJ	4,969	5,513	6,344
Tonnes CO_2 abated	000 tonnes	380	422	486

Forest-based biomass fuelled Combined Heat & Power (CHP)

There are currently two commercial forest-biomass fuelled CHP plants in operation in the Republic of Ireland. These are Grainger Sawmills Ltd. and Munster Joinery Ltd. The heat and electricity output of these facilities are shown in Table 33.

Table 33: Existing forest-biomass fuelled CHP output in the Republic of Ireland (2010).

	Feedstock	**Electricity output MWe**	**Heat output MWth**
Grainger Sawmills, Enniskeane, Co Cork	Sawmill residues	2.0	4.0
Munster Joinery Ltd., Ballydesmond, Co Cork	Joinery residues	3.0	11.0
TOTAL		5.0	15.0

4.17.3 Carbon savings

Since 2006, the use of wood biomass in Ireland has reduced Irish carbon dioxide (CO_2) emissions by 2.03 million tonnes or an average of 406,000 tonnes of CO_2 per annum.

[121] http://www.seai.ie/Publications/Statistics_Publications/SEI_Renewable_Energy_2010_Update/RE_in_Ire_2010update.pdf
[122] UNECE Joint Wood Energy Enquiry (2009-2011).
[123] Includes co-firing of wood biomass at Edenderry Power; www.edenderrypower.ie
[124] UNECE Joint Wood Energy Enquiry (2009-2011).

5.0 Irish forests & the environment

The Irish forestry and forest products sector has strong environmental and non timber benefits. All major Irish timber processors and growers are certified by the Forest Stewardship Council (FSC)[125] or by the Programme for the Endorsement of Forest Certification (PEFC)[126]. A report on forest recreation in Ireland has estimated that 18 million people visit Irish forests per annum. In addition, Ireland's forests create an opportunity to conserve and enhance biodiversity at both a local and a national level. Over the five year period of the Kyoto Protocol (2008-2012), Irish forests will sequester 11 million tonnes (Mt) of carbon dioxide (CO_2). By 2020, the amount of CO_2 which will be sequestered annually from Irish forests is estimated to be over 4 million tonnes per annum[127].

6.0 New developments

6.1 Forest health – sudden oak death

At the end of July 2010, the Irish Forest Service detected from surveys the first finding of sudden oak death (*Phytophthora ramorum)* on Japanese larch. These were showing extensive dieback from the crown and down the stem. Subsequently, another location was identified where Japanese larch was dying back due to the presence of *P. ramorum.* In addition there are three confirmed findings of the disease in Japanese larch in Northern Ireland. Landowners with infected sites are required to clearfell the areas as a matter of urgency in order to attempt to contain the further spread of the pathogen[128].

6.2 Forestry review

In October 2009, the Forest Service announced that they were undertaking a review of the Irish forestry and forest products sector. The guidance document for the review states that the Forest Service is committed to "review state forestry policy to take account of its critical role in relation to climate change and its importance to construction, bio-energy, bio-diversity and its potential to deliver long-term employment in other downstream industries e.g. eco-tourism, furniture, crafts etc. The review will include the role of Coillte and its functions and operations. It will also assess the effectiveness of current forestry grant schemes and make recommendations on how best to deliver supports in the future"[129]. This work will be undertaken in three stages as follows:

1. An overarching group with wide representation dealing with national forestry policy,
2. An interdepartmental group dealing with the funding of forestry schemes and
3. An interdepartmental group with Coillte representation dealing exclusively with the role, functions and operations of Coillte.

The review is expected to be completed before year end.

[125] www.fsc.org
[126] www.perfc.org
[127] http://www.agriculture.gov.ie/media/migration/2020/2020strategy/2020Forestry.doc
[128] http://www.agriculture.gov.ie/media/migration/forestry/forestservicegeneralinformation/foresthealthandseeds/QAPramorumonJL230810.pdf
[129] http://www.agriculture.gov.ie/forestryreview/messagefromministerofstatekilleen/

6.3 New standards for forest products/Eurocode 5 (EN 1995-1-1 & 1-2)

The period of co-existence between national standards and European standards came to an end in March 2010. All national standards which conflicted with European standards had to be withdrawn by that date. Thus for structural timber, in Ireland, I.S. 193 (Roof trusses) and I.S. 444 (the use of structural timber in buildings) were withdrawn. The Irish standards were based on BS 5268-2 which was a permissible stress design standard while EC5 is a limit state standard and involves much more complicated design procedures.

The change-over also involves the use of European loading standards; the main ones being EN 1991-1-4 (wind), EN 1991-1-1 (dead and imposed loads) and EN 1991-1-3 (snow).

6.4 Glennon Brothers sawmill wins Entrepreneur of the Year Award

In late 2009, the Irish timber processing firm Glennon Brothers secured a contract to deliver the first ever shipments of Irish and UK home-grown timber to France in a €1.5 million deal. Five shipments of kiln dried structural timber for use by the French house building sector have been shipped to France from Youghal, Co Cork and from Troon in Ayrshire, Scotland. This deal represents a first in both a UK and an Irish context[130]. In 2010, Glennon Brothers doubled its exports from Ireland to mainland Europe and to the UK. Exports from Glennon Brothers to the UK and Europe reached €20m compared with €10m in 2009[131]. In October 2010, this hard work was rewarded when Glennon Brothers won the top prize in the Industry Category of the Entrepreneur of the Year Awards.

6.5 New wood-based panel products from Coillte Panel Products (CPP)

In 2010, Coillte Panel Products (CPP) launched a number of new products and product range extensions. These included Medite Thick MDF (32-45mm range), Medite Ultralite (a lightweight MDF with a density of 500kg/m^3), and Medite Eco Flooring (MDF with zero added formaldehyde for flooring use) and Medite Eco FR (zero added formaldehyde/flame retardant). The development of these products helped to grow sales volumes by 8.4% over2009[132].

In 2011, Coillte Panel Products and Accsys Technologies announced that the production of Medite Tricoya the world's first ultra-high performance medium density fibreboard (MDF), is underway, and is expected to enter the market in the coming months. Following the signing of a joint development agreement in June 2009 and following significant research and development, Accsys Technologies will supply proprietary acetylated material to Medite Europe Ltd. for the production of Medite Tricoya[133].

Medite Tricoya uses the proprietary acetylation processes to produce a dimensionally stable and biologically durable MDF. Tests undertaken at the Building Research Establishment (BRE)[134] confirm that, this new wood composite panel product has an expected service life of 60 years when used in exterior applications. Such a service life represents a significant sustainability advantage over existing materials, particularly given its durability and dimensional stability in wet environments.

6.6 New forestry and bio-energy show

In May 2011, a new forestry and bio-energy show[135] was held at Birr, Co Offaly. Jointly arranged by the Irish Timber Growers Association (ITGA) and a private company, it attracted over 5,000 visitors.

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[130] http://www.glennonbrothers.ie/press/france.html
[131] http://www.farmersjournal.ie/site/farming-Strong-UK-performance-by-Glennon-brothers-12193.html
[132] http://annualreport2010.coillte.ie/index.php?id=57
[133] http://www.medite-europe.com/en/news_item.php?item=176
[134] http://www.bre.co.uk/
[135] http://www.ifwshow.ie/ifwshow_2011/Home_2011.html
http://www.irishtimes.com/newspaper/commercialproperty/2011/0504/1224295989487.html

6.6 Irish Farmers Association/A guide to establishing a forest owners association

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 who manage 340,000 hectares of forest.

The majority of private forests have been established in the last two decades, with many of these forests now approaching first thinning stage. A recent COFORD study shows that net production from privately owned forests will increase to 3.33 M m^3 by 2028 (Table 18). This represents an 8-fold increase in production over present levels

One of the biggest challenges facing private forest owners is to manage the large number of small and fragmented forests. The average holding in the private forest sector is 9 hectares and is often in dispersed locations. There is strong demand for a guaranteed consistent supply of timber from the private forest sector. However, farmers face a significant challenge to co-ordinate timber production to satisfy the growing market demand and to take advantage of the value-added opportunities in the market, particularly in the wood energy sector.

One of the most promising approaches to addressing the challenges faced by private forest owners in Ireland is for forest owners to work together to collectively manage their forests. Forest owner co-operation initiatives can vary from informal management agreements between neighbouring forest owners to legally incorporated cooperatives. In 2010, the Farm Forestry section of the Irish Farmers Association (IFA) secured funding the Forest Service to develop a "Practical Guide to Establishing a Forest Owner Organisation". This guide has been developed to introduce several ways that forest owners can work together to organise and empower themselves to improve the management and profitability of their forest enterprise. It includes a step-by-step guide based on experiences from forest owner groups in Ireland and internationally[136]. To date, 23 such forest owner groups are in operation in Ireland[137].

[136] http://www.ifa.ie/LinkClick.aspx?fileticket=urBVZTwN-JY%3d&tabid=808
[137] http://www.ifa.ie/LinkClick.aspx?fileticket=OItnVIueiMU%3d&tabid=808

7.0 Tables

7.1 Economic Indicators

7.1.1 An Economic Overview of the Irish Economy (2001-2012)[138,139,140].

Criteria/year	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011f	2012f
Output-real annual growth %												
Government spending	9.8	7.1	3.2	1.8	4.6	5.3	6.9	2.2	-4.5	-3.8	-3.3	-4.0
Personal consumption	5.4	3.8	3.2	3.8	6.6	5.7	5.9	-15	-6.9	-0.8	-1.3	0.0
Exports	8.6	4.5	0.5	7.3	3.9	4.4	8.6	-0.8	-4.2	6.3	7.0	7.4
Imports	7.2	2.4	-1.2	8.6	6.5	4.4	5.6	-2.9	-9.3	2.7	4.9	5.8
Consumer Price Index (CPI)	4.9	4.6	3.5	2.2	2.4	4.0	4.9	4.1	-4.5	-1.0	3.0	1.0
Gross Domestic Product (GDP)	5.7	6.0	4.3	4.3	5.5	5.7	6.0	-3.4	-7.0	-0.4	1.8	2.3
Gross National Product (GNP)	3.8	2.8	5.5	3.9	5.3	6.5	4.4	-5.3	-9.8	0.3	0.2	0.7
Expenditure on Gross Domestic (GDP) & Gross National Product (GNP)												
GDP at market prices € billion	€116.8	€129.9	€138.9	€147.6	€161.2	€175.8	€189.8	€180.0	€160.6	€156.0		
GNP at market prices € billion	€97.8	€106.2	€117.2	€124.4	€135.9	€150.3	€161.2	€154.7	€132.2	€128.2		
Other economic variables												
Unemployment (As % of the labour force)	4.0	4.6	4.7	4.5	4.4	4.4	4.6	6.3	11.8	13.6	14.3	14.5

[138] ESRI, Quarterly Economic Commentary, Summer 2010; http://www.esri.ie/UserFiles/publications/RB20100201/QEC2010Sum_ES_Summary%20Table.pdf
[139] f: Figures for 2011 and 2012 are forecast.
[140] ERSI Quarterly Economic Commentary, Summer 2011; http://www.esri.ie/UserFiles/publications/QEC2011Sum_ES.pdf

7.1.2 Value of construction output in current prices, 2000-2011f [141,142,143,144,145].

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010e	2011f	2012f
Residential € billion	9.50	10.95	11.93	14.65	18.06	20.87	20.67	18.34	12.24	3.89	1.66		
Non-residential € billion	3.82	3.71	2.96	2.73	2.96	3.42	5.07	5.86	5.12	2.12	0.6		
Productive infrastructure € billion	3.06	3.75	4.58	4.76	4.83	5.23	4.13	4.58	5.17	4.77	3.82		
Social infrastructure € billion	1.20	1.52	1.82	1.68	1.75	2.03	1.47	1.89	2.08	1.51	1.31		
Total output € billion	17.58	19.93	21.29	23.82	27.6	31.55	31.34	30.67	24.61	12.29	7.39	6.66	7.05
Residential %	54	55	56	61	65	66	66	60	50	32	22	14	
Housing Construction % GNP	9.2	9.8	10.2	11.8	13.6	15.4	13.5	11.4	7.9	2.8	1.2		
Annual house building cost Index[146,147] (1991 = 100)	141.0	161.5	171.8	176.5	181.5	186.9	194.2	201.7	209.4	206.4	208.7	204.2	
Total construction output							(0.7)	(2.1)	(19.8)	(50.1)	(39.9)	(10)	0.6

[141] http://www.environ.ie/en/PublicationsDocuments/FileDownLoad,21120,en.pdf
[142] Central Statistics Office; www.cso.ie
[143] ESRI Quarterly Economic Commentary; Summer 2011; www.esri.ie
[144] http://www.irishconstruction.com/page/2372
[145] http://www.qnhsireland.net/statistics/ann_house_building_cost_index.htm
[146] http://www.qnhsireland.net/statistics/ann_house_building_cost_index.htm
[147] http://www.cso.ie/px/Doehlg/Dialog/varval.asp?ma=HSM09&ti=House+Building+Cost+Index+(Base+Jan+1991=100)+by+Month+and+State&path=../Database/DoEHLG/Housing Statistics/&lang=1

7.1.3 Forest products production in Ireland (2006 -2012f) [148,149,150].

Category	Unit	2006	2007	2008	2009	2010	2011f	2012f
Roundwood	1000 m^3	2,671	2,710	2,232	2,429	2,618	2,585	2,585
Coniferous	1000 m^3	2,654	2,682	2,203	2,346	2,514	2,465	2,465
Non-coniferous	1000 m^3	17	27	30	83	104	120	120
Wood fuel, including wood for charcoal	1000 m^3	15	32	52	167	181	200	200
Coniferous	1000 m^3	5	12	24	87	78	80	80
Non-coniferous	1000 m^3	11	20	28	80	103	120	120
Industrial roundwood (wood in the rough)	1000 m^3	2,656	2,678	2,180	2,262	2,437	2,385	2,385
Coniferous	1000 m^3	2,650	2,671	2,179	2,259	2,437	2,385	2,385
Non-coniferous	1000 m^3	6	7	1	3	0	0	0
Sawlogs and veneer logs	1000 m^3	1,789	1,725	1,359	1,497	1,425	1,415	1,415
Coniferous	1000 m^3	1,782	1,718	1,358	1,494	1,425	1,415	1,415
Non-coniferous	1000 m^3	6	7	1	3	0	0	0
Pulpwood (round & split)	1000 m^3	760	828	734	678	893	850	850
Coniferous	1000 m^3	760	828	734	678	893	850	850
Non-coniferous	1000 m^3	0	0	0	0	0	0	0
Other industrial roundwood	1000 m^3	107	125	87	87	118	120	120
Coniferous	1000 m^3	107	125	87	87	118	120	120
Non-coniferous	1000 m^3	0	0	0	0	0	0	0
Wood chips and particles	1000 m^3	606	545	523	516	517	502	502
Wood residues	1000 m^3	254	229	169	167	168	163	163
Sawnwood	1000 m^3	1,094	985	696	774	772	750	750
Coniferous	1000 m^3	1,091	981	696	772	772	750	750
Non-coniferous	1000 m^3	3	4	1	2	0	0	0
Of which: tropical	1000 m^3	0	0	0	0	0	0	0
Wood-Based Panels (WBP)	1000 m^3	937	918	779	709	758	700	700
Particle board (including OSB)	1000 m^3	436	440	377	329	358	300	300
Of which: OSB	1000 m^3	308	310	270	274	291	300	300
Fibreboard	1000 m^3	501	479	402	380	400	400	400
Hardboard	1000 m^3	0	0	0	0	0	0	0
MDF (Medium Density Fibreboard)	1000 m^3	413	396	340	340	360	360	360
Insulating board	1000 m^3	0	0	0	0	0	0	0
Other fibreboard	1000 m^3	88	83	61	40	40	40	40
Recovered paper	1000 mt	444	458	448	471	511	520	530
Paper and paperboard	1000 mt	0	0	0	0	0		
Packaging materials	1000 mt	45	45	45	45	45	45	45
Case materials	1000 mt	45	45	45	45	45	45	45

[148] EUROSTAT /Irish JQ1 Return (2007-2011).
[149] F: figures for 2011 & 2012 are forecast.
[150] These figures are in cubic metres underbark.

7.1.4 Irish Timber Imports and Exports (2008-2010)

The breakdown of Irish forest product imports and exports for the period 2008 to 2010 are shown in Table 34, while the balance of payments in forest products are shown in Table 35.

Table 34: Timber trade (2007-2010)[151].

	Imports							
	2007	**2008**	**2009**	**2010**	**2007**	**2008**	**2009**	**2010**
	000 cubic metres UB				**€ million**			
Sawn timber	724	412	232	242	251	141	66	74
Wood-based panels	358	264	181	166	146	108	68	65
	000 tonnes							
Pulp products	31	29	32	41	22	20	22	31
Paper and paper-board products	546	526	379	370	467	520	308	313
TOTAL					886	789	464	483
	Exports							
	000 cubic metres UB				**€ million**			
Sawn timber	381	389	564	621	71	54	51	63
Wood-based panels	757	614	580	660	262	195	147	179
	000 tonnes							
Pulp products	0	2	0	1	0	0	0	0
Paper and paper-board products	85	77	45	33	92	69	45	44
TOTAL					425	318	243	286

Table 35: Balance of trade in the value of forest products (2007-2010).

	2007	**2008**	**2009**	**2010**
	€ million			
Sawn timber	-180	-87	-15	-11
Wood-based panels	116	87	79	114
Pulp products	-22	-20	-22	-31
Paper and paper-board products	-375	-451	-263	-269
TOTAL	-461	-471	-221	-197

[151] Includes import/export figures for sawn timber, wood-based panels and pulp/paper products only. Data are taken from Ireland's EUROSTAT JFSQ returns (2008-2011). Roundwood, sawmill residues and secondary processed timber products are not included. Trade data for the JFSQ is provided by the Central Statistics Office (CSO); www.cso.ie

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