



Processing / Products No. 38

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- A general improvement in the economic situation in the UNECE<sup>4,5</sup> region helped increase the demand for forest products.
- 1.28 billion m<sup>3</sup> of roundwood was consumed in the region; an increase of 7 % on 2010<sup>6</sup>.
- 1.02 billion m<sup>3</sup> of industrial roundwood was harvested in the region<sup>7</sup>.
- The market for forest products showed mixed signs of recovery.
- Wood energy markets continued to develop strongly; woody biomass remained the single-most important source of renewable energy in the region.
- Efforts to exclude illegal timber from markets were strengthened via the EU Timber Regulation (EUTR) and the Lacey Act in the US.

## An overview of 2015 Meeting of the United Nations Economic Commission for Europe (UNECE) Committee on Forests and the Forest Industry<sup>1,2</sup>

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### Introduction

The November 2015 meeting of the United Nations Economic Commission for Europe (UNECE) Committee on Forests and the Forest Industry discussed:

- roundwood harvest,
- key regional markets,
- key sectoral markets,
- wood-biomass energy and
- green building.

### Roundwood harvest in the UNECE region (2012-2015)

The markets for forest products in the UNECE region showed mixed signs of recovery. In 2014, 1.28 billion m<sup>3</sup> of roundwood was consumed, a 7 % increase on the roundwood harvest for 2010. 84 % of this was industrial roundwood (Table 1). The balance was used for fuel.

The market for forest products continued to improve in North America and Europe. However, demand for industrial roundwood, pulp and paper grew in the Commonwealth of Independent States (CIS)<sup>8</sup> by 3.7 % and 2.2 % respectively.

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<sup>1</sup>. Global demand is taken as the demand for forest products within the UNECE region. This was discussed at the Seventy-third session of the UNECE Committee on Forests and the Forest Industry, Engelberg, Switzerland; November 2015; <http://www.unece.org/index.php?id=39138#/>

<sup>2</sup>. This meeting was formerly called the UNECE Timber Committee Meeting.

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<sup>4</sup>. The UNECE region covers more than 47 M square kilometres. Its member States include the countries of Europe, but also countries in North America (Canada and the United States), Central Asia (Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan) and Western Asia (Israel); <http://www.unece.org/oes/nutshell/region.html>

<sup>5</sup>. [http://www.unece.org/oes/member\\_countries/member\\_countries.html](http://www.unece.org/oes/member_countries/member_countries.html)

<sup>6</sup>. Total roundwood harvest includes firewood.

<sup>7</sup>. Industrial roundwood excludes firewood.

<sup>8</sup>. Members of the CIS are: Azerbaijan, Armenia, Belarus, Georgia, Kazakhstan, Kyrgyzstan, Moldova, the Russian Federation, Tajikistan, Turkmenistan, Uzbekistan and Ukraine: <http://www.cisstat.com/eng/cis.htm>

For information and a free on-line advisory service on the wood energy supply chain, the quality of wood fuels and internal handling visit [www.woodenergy.ie](http://www.woodenergy.ie)

While, demand for sawnwood and wood-based panels in the CIS declined by more than 4 %.

379 M m<sup>3</sup> of roundwood was harvested from European forests. Softwood removals increased by 3.1 % over 2013 to 288.9 M m<sup>3</sup>. The largest year-over-year increase in softwood log harvests occurred in Norway (8.9 %), Turkey (8.1 %), France (5.6 %), Poland (5.6 %) and the Czech Republic (2.9 %).

Europe's forest industry consumed slightly more than 390 M m<sup>3</sup> of industrial roundwood, the largest volume since the global recession in 2008. Approximately 60 % of this roundwood was consumed in just five countries: Finland, France, Germany, Poland and Sweden. Consumption increased by approximately 4 % in 2013-2014; attributed to higher production in the subregions sawmills.

Hardwood roundwood removals in Europe have increased steadily in the last five years, reaching their highest level in more than ten years.

**Table 1: Industrial roundwood harvest in the UNECE region (2012-2015).**

Region and item	2012	2013	2014	2015f
	M m <sup>3</sup> UB			
<b>Europe</b>				
Removals	369.4	367.5	378.5	384.4
Imports	51.1	56.4	57.4	58.4
Exports	38.2	43.4	44.6	45.0
Apparent consumption <sup>9</sup>	382.3	380.5	391.3	397.8
<b>CIS</b>				
Removals	193.7	199.7	208.1	213.2
Imports	0.5	0.6	0.6	0.6
Exports	21.8	23.8	27.0	29.0
Apparent consumption	172.4	176.5	181.7	184.8
<b>North America</b>				
Removals	461.2	502.7	506.7	508.1
Imports	6.0	5.8	5.2	5.2
Exports	16.2	21.7	21.2	21.3
Apparent consumption	451.0	486.8	490.7	492.0
<b>UNECE region</b>				
Removals	1,024.3	1,069.9	1,093.3	1,105.7
Imports	57.6	62.8	63.2	64.2
Exports	76.2	88.9	92.8	95.3
Apparent consumption	1,005.7	1,043.8	1,063.7	1,074.6

## Use of forest products in construction

House construction remained the primary market for forest products. It was estimated that the construction of a single family home in North America consumed 25.1 m<sup>3</sup> of sawn timber and 14.2 m<sup>3</sup> of wood-based panels. In contrast, the construction of an average multifamily home in North America utilised 4.1 m<sup>3</sup> of sawn timber and 1.5 m<sup>3</sup> of wood-based panels. This figure is significantly lower in Europe, where less than 1 m<sup>3</sup> of wood products per unit were used.

The housing forecast for the Euroconstruct region<sup>9</sup> estimated moderate growth in housing output for 2015 of 2.4 %, increasing by 4.3 % in 2016. The total residential construction expenditure for this region was estimated at €614.4 billion, of which renovation comprised 60 % (€368.4 billion) and new residential construction 40.0 % (€246.1 billion)<sup>10</sup>.

## Consumption of forest products in the UNECE region (2010-2014)

The markets for forest products showed mixed signs of recovery (Table 2). The consumption of sawn timber rose by 4.2 % in North America and by 2.9 % in Europe. However, over the same period, the demand for sawn timber in the CIS dropped by 4.4 %. In recent years, China has become a key alternative market for sawnwood producers in Canada, Europe and the US.

Sawn softwood consumption increased in North America by 4.6 %, to 85.6 M m<sup>3</sup> and in Europe by 2.5 % to 86.4 M m<sup>3</sup>, but it declined in the CIS by 3.7 %, to 17.63 M m<sup>3</sup>.

The consumption of sawn hardwood increased to 34.4 M m<sup>3</sup>, a 3.3 % rise over 2013. China continued to dominate the global sawn hardwood trade in 2014.

There was moderately strong growth in the consumption of wood-based panels in both North America (+5.0 %) and Europe (+4.7 %), but consumption declined by 4.4 % in the CIS. The demand for particleboard grew by 2.1 % across the UNECE region. However demand varied; it was up by 8.5 % in North America and declined by 8.3 % in the CIS. Demand for OSB was strong, growing by 7.6 %. The consumption of fibreboard increased in North America (+ 4.2 %) and Europe (+ 6.6 %) but declined in the CIS (- 1.0 %).

The pulp, paper and paperboard market was once again in flux as large concentrations of graphic paper capacity continued to be rationalised in Europe and North America.

<sup>9</sup> The Euroconstruct region comprises 19 countries. The western area consists of Austria, Belgium, Denmark, Finland, France, Germany, Ireland, Italy, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the UK. The eastern area comprises the Czech Republic, Hungary, Poland and Slovakia: <http://www.euroconstruct.org/about/about.php>

<sup>10</sup> <http://www.euroconstruct.org/about/about.php>

**Table 2: Apparent consumption of forest products by product in the UNECE region (2010-2014)<sup>11,12</sup>.**

Region and product group	Unit	2010	2011	2012	2013	2014	% change (2010-2014)
<b>Europe</b>							
Industrial roundwood	M m <sup>3</sup>	385.1	385.5	376.2	380.6	391.3	1.6
Sawn timber	M m <sup>3</sup>	103.1	102.2	97.2	96.5	99.3	-3.7
Wood-based panels	M m <sup>3</sup>	65.9	66.9	65.0	66.3	69.4	5.4
Paper & paperboard	M t	94.8	93.2	89.9	88.8	89.9	-5.1
<b>CIS</b>							
Industrial roundwood	M m <sup>3</sup>	151.8	166.8	173.7	175.1	181.7	19.7
Sawn timber	M m <sup>3</sup>	17.0	19.0	19.7	20.4	19.5	14.6
Wood-based panels	M m <sup>3</sup>	12.6	16.0	17.0	18.9	18.1	43.8
Paper & paperboard	M t	7.4	9.7	9.4	9.2	9.4	27.1
<b>North America</b>							
Industrial roundwood	M m <sup>3</sup>	466.8	491.6	479.2	486.8	490.7	5.1
Sawn timber	M m <sup>3</sup>	89.3	89.8	95.6	101.2	105.4	17.9
Wood-based panels	M m <sup>3</sup>	46.7	45.8	46.4	48.0	50.4	7.8
Paper & paperboard	M t	83.3	79.7	78.0	76.0	75.1	-9.9
<b>UNECE region</b>							
Industrial roundwood	M m <sup>3</sup>	1,003.7	1,043.9	1,029.1	1,042.5	1,063.7	6.0
Sawn timber	M m <sup>3</sup>	209.4	211.0	212.5	218.1	224.2	7.0
Wood-based panels	M m <sup>3</sup>	125.2	128.7	128.4	133.2	137.9	10.1
Paper & paperboard	M t	185.5	182.6	177.3	174.0	174.4	-5.9

## Regional overviews (2014)

### North America

The market for forest products in North America continued to improve<sup>13</sup>. This was largely due to the recovery in the US housing sector (Table 3), an improved economic situation, increased exports of forest products and roundwood to Asia, and of wood pellets to Europe.

The growth in the US housing sector is expected to continue into 2015. In addition, Canadian housing starts were up 4.6% in the first half of 2014, compared to the same period in 2013<sup>14</sup>.

The US housing market is the primary driver behind softwood lumber and wood-based panel (WBP) demand in North America. This was driven by a recovery in residential housing construction, where new house starts reached over 1 million for the first time since 2008. The single-family component grew by only 5 %, but multi-family starts maintained a strong pace, rising by 16 %. This was on top of substantial gains each year since 2010; the highest number of multi-family starts in any year since 1989. The construction of single family homes uses considerably more forest products than the construction of multi-family homes (see: Use of forest products in construction).

However, the US housing market is yet to fully recover. Multifamily housing permits, and housing starts, are above where they have been for the last 20 years. However single-family housing starts are at about 60 % of their historical average. Notably, multi-family construction consumes approximately 65 % less softwood and wood-based panels per family unit than traditional single-family units. As of November 2015, housing starts in the United States jumped 10.5 % to a seasonally adjusted annual rate of 1.17 million. It is forecast that total housing starts will increase by 16 % in 2016<sup>15</sup>.

In 2015, 61 % of the housing starts in the USA were single family homes. In 1993, 87 % of house starts were single family homes<sup>16</sup>. The change from single family to multi-family homes has a major effect on the use of forest products in construction (see: Use of forest products in construction).

In August 2014, the value of all new construction in the US was estimated at \$961 billion, \$46 billion above the same period in 2013. In 2013, expenditures on residential repair and remodeling in the US increased by 3.2% to \$130 billion. However, this was still well below the record high years of 2006 and 2007.

<sup>11</sup> <http://www.unece.org/fileadmin/DAM/timber/publications/2015-FPAMR-E.pdf>

<sup>12</sup> Apparent consumption is defined as (production + imports) – exports.

<sup>13</sup> [http://www.unece.org/fileadmin/DAM/timber/meetings/20151102/presentations/item\\_3a\\_Culbertson.pdf](http://www.unece.org/fileadmin/DAM/timber/meetings/20151102/presentations/item_3a_Culbertson.pdf)

<sup>14</sup> [http://www.unece.org/fileadmin/DAM/timber/mis/tos/2014/Canada\\_2014.pdf](http://www.unece.org/fileadmin/DAM/timber/mis/tos/2014/Canada_2014.pdf)

<sup>15</sup> [http://www.freddiemac.com/finance/pdf/dec\\_2015\\_public\\_outlook.pdf](http://www.freddiemac.com/finance/pdf/dec_2015_public_outlook.pdf)

<sup>16</sup> [http://www.unece.org/fileadmin/DAM/timber/meetings/20151102/presentations/item\\_3a\\_Culbertson.pdf](http://www.unece.org/fileadmin/DAM/timber/meetings/20151102/presentations/item_3a_Culbertson.pdf)

**Table 3: US housing starts by type (2000-2017f)**<sup>17,18,19,20,21,22</sup>

Year	Single-use	Multi-family	Total
		000 homes	
2000	1,242	332	1,574
2001	1,256	315	1,571
2002	1,325	323	1,648
2003	1,386	292	1,679
2004	1,532	310	1,842
2005	1,636	296	1,931
2006	1,655	325	1,980
2007	1,218	284	1,503
2008	819	301	1,120
2009	520	274	794
2010			581
2011			609
2012			781
2013			925
2014			1,003
2015			1,173
2016f			1,310
2017f			1,510

The growth in the housing sector continued to have a positive effect on softwood lumber consumption in the US through 2014. According to the Western Wood Products Association (WWPA)<sup>23</sup>, during the first seven months of 2014, softwood lumber consumption in the US increased by 5.0% over the same period in 2013. During the first seven months of 2014, shipments of softwood lumber from western mills increased by 5.5%. On a full year basis, the growth in residential housing starts, and continued strength in repair and remodelling activity, as well as gains in the non-residential sector, drove a 4.2 % increase in apparent sawn softwood consumption in North America to 85.6 M m<sup>3</sup> (Table 4).

**Table 4: Sawn softwood balance in North America (2010-2015f)**<sup>24</sup>

Item	2010	2011	2012	2013	2014	2015f	% change (2013-2014)
Production	79.9	82.9	88.2	92.5	95.7	97.1	3.5
Imports	16.7	16.2	17.8	20.4	21.9	22.1	7.4
Exports	24.3	26.8	27.6	30.7	32.0	33.4	4.3
Apparent consumption	72.3	72.3	78.4	82.2	85.6	85.8	4.2

On a volume basis, the southern region of the US continued to have the highest levels of production and shipments of softwood lumber<sup>25</sup>. The southern US pine region has abun-

dant, low cost timber from productive, well managed private forests. Canadian forest product companies including Canfor<sup>26</sup>, West Fraser<sup>27</sup> and Interfor<sup>28</sup> have invested in southern pine sawmills. These now own 35 pine sawmills in Texas, Arkansas, Louisiana, Mississippi, Alabama, Georgia, South Carolina, North Carolina and Florida. These mills have a combined production capacity of 11 M m<sup>3</sup>. They produced 30 % of the southern pine framing lumber<sup>29</sup>.

Over the first three quarters of 2014, the production of structural panels in Canada increased by 2.2 %, while US demand for Canadian softwood lumber improved considerably. This was a result of the turnaround in the US housing market. Between 2012 and 2013, Canadian exports of softwood lumber to the US increased by 33.3 % to \$4.5 billion. In the first seven months of 2014, the exports of Canadian softwood lumber to the US increased by 17.1 % over 2013.

China has become a significant offshore market for roundwood and forest products exports from North America. Exports of sawn softwood lumber from Canada to China have increased from 0.26 M m<sup>3</sup> in 2004 to 7.96 M m<sup>3</sup> in 2013. Demand in China is driven by Government housing projects, the construction of private multi-storey residential projects and by the demand for non-residential construction.

During the first seven months of 2014, US exports to China have remained strong. This is driven by the exports of roundwood and softwood lumber to China. Export levels are above those for the corresponding period 2013. Sawmills in the Pacific Northwest are benefiting the most from this surge in demand.

Moreover, the output of the domestic US furniture industry, in retreat since 1999, was up 2.4% in August 2014 over 2013.

### Commonwealth of Independent States (CIS)<sup>30</sup>

The CIS used 182 M m<sup>3</sup> of roundwood in 2014, almost 20 % higher than in 2010. Forest output was concentrated in Belarus, the Russian Federation and the Ukraine. 13.7 M m<sup>3</sup> of roundwood was exported from forests in the Russian Federation, 80 % of which was sold in China.

In just five years, Ukraine has become Europe's largest exporter of softwood logs and the fifth-largest exporter of softwood logs worldwide. Its export volume more than doubled from 2009 to 2014, reaching a record high of 3.1 M m<sup>3</sup>, which was 38 % of the country's official timber harvest.

<sup>17</sup> [http://www.econstats.com/hs/hs\\_a15.htm](http://www.econstats.com/hs/hs_a15.htm)

<sup>18</sup> <http://www.calculatedriskblog.com/2012/10/wells-fargo-raises-housing-forecasts.html>

<sup>19</sup> f. forecast

<sup>20</sup> [http://www.unece.org/fileadmin/DAM/timber/mis/tos/2014/USA\\_2014.pdf](http://www.unece.org/fileadmin/DAM/timber/mis/tos/2014/USA_2014.pdf)

<sup>21</sup> <http://www.unece.org/fileadmin/DAM/timber/meetings/20141118/presentations/14-glass.pdf>

<sup>22</sup> <http://www.freddiemac.com/finance/ehforecast.html>

<sup>23</sup> <http://www.wwpa.org/>

<sup>24</sup> <http://www.unece.org/fileadmin/DAM/timber/publications/2015-FPAMR-E.pdf>

<sup>25</sup> [http://www.unece.org/fileadmin/DAM/timber/mis/tos/2014/USA\\_2014.pdf](http://www.unece.org/fileadmin/DAM/timber/mis/tos/2014/USA_2014.pdf)

<sup>26</sup> <http://www.canfor.com/>

<sup>27</sup> <http://www.westfraser.com/>

<sup>28</sup> <http://www.interfor.com/>

<sup>29</sup> [http://www.unece.org/fileadmin/DAM/timber/meetings/20151102/presentations/item\\_3a\\_Culbertson.pdf](http://www.unece.org/fileadmin/DAM/timber/meetings/20151102/presentations/item_3a_Culbertson.pdf)

<sup>30</sup> [http://www.unece.org/fileadmin/DAM/timber/meetings/20151102/presentations/item\\_3a\\_Ivanov.pdf](http://www.unece.org/fileadmin/DAM/timber/meetings/20151102/presentations/item_3a_Ivanov.pdf)



There were mixed results in consumption of forest products. Consumption of industrial roundwood, pulp and paper increased. However decreases of more than 4 % in the consumption of both sawnwood (sawn softwood -3.7 %) and wood-based panels (-4.4 %) were observed. The market for sawn softwood increased by 3.7 % to 17.63 M m<sup>3</sup>. Sawn softwood production increased by 0.9 % over 2013, to 36.1 M m<sup>3</sup>. Aided by a dramatic weakening of the rouble and by healthy market demand, CIS exports of sawn softwood increased by 4.9 %. The apparent consumption of sawn hardwood fell by 8.1 % to 1.9 M m<sup>3</sup>.

The wood-based panel industry accounted for 42 % (150 billion roubles) of the total revenue generated by the wood-working subsector in the Russian Federation in 2014. The plywood industry was the largest segment, followed by particle board and fibreboard.

It is estimated that CIS countries combined produced 2 M tonnes of wood pellets in 2014. The Russian customs agency reported exports of 879 thousand tonnes of wood pellets to Europe in the same period.

Housing completions in the Russian Federation reached record levels, with a total of 1,080,300 new residences completed, a year-over-year rise of 20.3 %. Over the period 2013-2014, the area of residential house construction in the Russian Federation grew by 17.2 % from 70.2 to 82.3 M m<sup>2</sup>.

## Europe

Industrial roundwood removals amounted to 378.6 M m<sup>3</sup>, of which 76% (288.9 M m<sup>3</sup>) was softwood. Softwood removals were up by 3.1 % compared with 2013 (from 280.2 M m<sup>3</sup>). Of the ten-largest log producing countries, the largest year-over-year increases in softwood log production were observed in Norway (8.9 %), Turkey (8.1 %), France (5.6 %), Poland (5.6 %) and the Czech Republic (2.9 %)<sup>31</sup>.

Total log consumption (including industrial roundwood and woodfuel) was up by 2.4 % compared with 2013, the largest percentage increase observed in hardwood logs. Approximately 77 % of the total harvest was classified as industrial roundwood, with the remaining 23 % fuelwood.

The consumption of sawn softwoods increased by 2.5 %, to 86.4 M m<sup>3</sup>, while 12.8 M m<sup>3</sup> of sawn hardwoods were used. This was an increase of 4.5 % over 2013. Over the same period the European market for wood-based panels grew by 4.7 % to 69.4 M m<sup>3</sup>.

Over the period 2000-2014, European producers of forest products have significantly grown non European export markets for their products (Table 5).

**Table 5: Percentage of European produced forest products exported beyond Europe<sup>32</sup>.**

Product	2000	2014
	% of production volume	
Pulp	2.5	10.0
Wood-based panels	15.0	22.0
Sawn timber	5.0	15.0

## Sectoral overviews (2014)

### Sawn softwood

The consumption of sawn softwood in Europe increased by 2.9 % from 2013 (Table 6). Over the same period, the production of sawn softwood in Europe grew by 3.2 % to 101.1 M m<sup>3</sup>. This increase largely occurred in Finland, Germany and Sweden, which collectively added 2.3 M m<sup>3</sup> in production capacity.

The apparent consumption of sawn softwood rose by 4.2 % in North America and declined by 3.7 % in the CIS. Demand in Europe, grew by 2.7 % over 2013. In recent years, China has become a key alternative market for sawnwood producers in Canada, Europe and the US. The demand from China for sawn softwood grew by 13.8 % over 2013.

US sawn softwood output was 53.80 M m<sup>3</sup>, an increase of 5.4 % over 2013. Production gains were highest in the south (+6.9 %), followed by the inland (+5.2 %) and coast (+2.9 %) regions. Access to low-cost timber, investment in new and upgraded capacity and healthy demand driven by a strong housing sector has put the south in a leading position among US producing regions.

The slow and steady improvement in new residential housing starts and repair and remodelling activity in North America continued in 2014. The demand for sawn softwood in the USA grew 6.4 % to 72 M m<sup>3</sup>. Over the same period, the demand for sawn softwood in Canada declined by 3.6 % to 14.4 M m<sup>3</sup>.

**Table 6: Sawn softwood balance in Europe (2012-2015).**

Item	2012	2013	2014	2015f	% change (2013-2014)
	M m <sup>3</sup>				
Production	96.6	97.9	101.1	103.8	3.2
Imports	31.8	31.6	33.0	33.5	4.3
Exports	43.8	45.3	47.5	48.6	5.0
Apparent consumption	84.6	84.2	86.6	88.7	2.9

### Sawn hardwood

The consumption of sawn hardwood increased to 34.M m<sup>3</sup> across the UNECE, a 3.3 % rise compared to 2013. This was the second consecutive year of increase, a sign that the upward trend may be sustainable.

<sup>31</sup> <http://www.unece.org/fileadmin/DAM/timber/publications/2015-FPAMR-E.pdf>

<sup>32</sup> [http://www.unece.org/fileadmin/DAM/timber/meetings/20151102/presentations/item\\_3a\\_Nilsson.pdf](http://www.unece.org/fileadmin/DAM/timber/meetings/20151102/presentations/item_3a_Nilsson.pdf)

The consumption of sawn hardwood in Europe increased by 4.5 % to 12.8 M m<sup>3</sup>. Over the same period, the production of sawn hardwood increased by 8.2 % to 13.4 M m<sup>3</sup>.

The consumption of sawn hardwood in North America increased by 4.1 % to 19.7 M m<sup>3</sup>, while the consumption of sawn hardwood in the CIS fell by 8.1 %, to 1.91 M m<sup>3</sup>.

China continued to dominate the global sawn hardwood trade in 2014. Its sawn hardwood imports increased by 32 % to \$4.2 billion, and its share of total global trade value increased from 33 % to 39 %.

### Builder's joinery and carpentry

The markets for builder's joinery and carpentry (BJC) are recovering swiftly in Germany and the US, but other markets in Europe are flat. German imports grew by 9.5 % in 2014 and the US market experienced a third consecutive year of solid growth. BJC markets are typically local, and manufacturing abroad is not as profitable as it is for wooden furniture. Nevertheless, about one-third of UK and US imports originate in Asia<sup>33</sup>.

### Wood laminate flooring

Global wood laminate flooring production increased from 925 M m<sup>2</sup> in 2013 to 940 M m<sup>2</sup> in 2014. The largest producers of this product were China, which accounted for 27 % of production and Germany, which accounted for 25 %.

### Tropical forest products

The supply base for tropical wood imported into the UNECE region narrowed after importers introduced due-diligence systems. In addition, importers reported strong purchasing competition from Chinese buyers for sawn tropical hardwoods<sup>34</sup>.

Over the period 2010-2014, the production of tropical forest products grew by 12.4 % (Table 7).

**Table 7: Output of the tropical forest products sector (2010-2014)<sup>35</sup>.**

Item	2010	2011	2012	2013	2014	% change (2010-2013)
	000 m <sup>3</sup>					
Tropical industrial roundwood	207,391	213,333	216,215	212,776	238,807	15.1
Sawn tropical timber	49,260	49,405	49,171	49,065	50,028	1.6
Tropical veneer	3,661	3,831	3,753	3,777	4,706	28.5
Tropical plywood	11,976	11,568	12,046	10,877	12,400	3.5
<b>Total</b>	<b>272,289</b>	<b>278,137</b>	<b>281,185</b>	<b>276,494</b>	<b>305,941</b>	<b>12.4</b>

### Wood-based panels

The consumption of wood-based panels (WBP) grew in Europe by 4.7 % to 69.4 M m<sup>3</sup> (Table 8). WBP markets within the UNECE region are dominated by markets for particleboard and fibreboard. In 2014, the apparent consumption of particleboard in Europe grew by 4.4 % to 34.6 M m<sup>3</sup>. The top five consuming markets for particleboard<sup>36</sup> were: Germany, Poland, Turkey, Italy and the UK. Over the same period, the apparent consumption of fibreboard<sup>37</sup> in Europe grew by 6.6 % to 20.4 M m<sup>3</sup>.

The production of wood-based panels (WBP) in the UNECE region grew by 1.9 % and is projected to grow a further 1.3 % in 2015. The gradual improvement in new residential housing starts and repair and remodelling (RMI) activity in North America continued in 2014. This was largely responsible for increasing the consumption of wood-based panels in North America by 5.2 % to 50.9 M m<sup>3</sup>. However, over the same period, the demand for wood-based panels in the CIS decreased by 4.2 % to 18.8 M m<sup>3</sup>.

Economic growth continued in North America, driven largely by the US, while Europe and the CIS were stagnant. There was moderately strong growth in the consumption of wood-based panels in both North America (+5.2 %) and Europe (+4.7 %). However, consumption declined by 4.2 % in the CIS (Table 8).

Plywood consumption increased by just 1.2 % across the UNECE, although it grew by 3.9 % in the EU. Particleboard consumption grew by 2.1 %; up 8.5 % in North America and down 8.3 % in the CIS. The growth in the consumption of OSB (+7.6 %) was strong in all three subregions. Consumption of fibreboard increased in 2014 in North America (+4.2 %) and Europe (+6.6 %) but declined in the CIS (-1.0 %).

<sup>33</sup> <http://www.unece.org/fileadmin/DAM/timber/publications/2015-FPAMR-E.pdf>

<sup>34</sup> <http://www.unece.org/fileadmin/DAM/timber/publications/2015-FPAMR-E.pdf>

<sup>35</sup> [http://www.itto.int/annual\\_review\\_output/?mode=searchdata](http://www.itto.int/annual_review_output/?mode=searchdata)

<sup>36</sup> Production data for particleboard includes production data for oriented strand board (OSB).

<sup>37</sup> Production data for fibreboard includes production data for medium density fibreboard (MDF).

**Table 8: Wood-based panel balance in the UNECE region (2012-2015f)<sup>38</sup>.**

Item	2012	2013	2014	2015f	% change (2013-2014)
	000 m <sup>3</sup>				
<b>Europe</b>					
Production	67.3	68.2	70.0	70.6	2.7
Imports	28.6	30.4	31.5	31.8	3.7
Exports	31.2	32.2	32.1	32.0	-0.5
Apparent consumption	64.7	66.4	69.4	70.4	4.7
<b>CIS</b>					
Production	16.7	17.0	17.9	16.7	1.8
Imports	7.1	6.6	6.6	7.1	-7.0
Exports	4.9	5.5	5.7	4.9	12.2
Apparent consumption	18.9	18.1	18.8	18.9	-4.2
<b>North America</b>					
Production	45.1	46.4	46.7	45.1	2.9
Imports	11.6	13.3	13.7	11.6	14.7
Exports	8.8	9.3	9.5	8.8	5.7
Apparent consumption	47.9	50.4	50.9	47.9	5.2
<b>UNECE region</b>					
Production	129.1	131.6	134.6	129.1	1.9
Imports	47.3	50.3	51.8	47.3	6.3
Exports	44.9	47	47.3	44.9	4.7
Apparent consumption	131.5	134.9	139.1	131.5	2.6

### Paper, paperboard and wood pulp

The pulp and paper industry in Europe consumed virtually the same volume of wood fibre as in 2013, approximately 147 M m<sup>3</sup>, continuing a five-year trend of minor changes to total usage of pulpwood<sup>39</sup>.

Over the last 4 years, the consumption of paper and paperboard has fallen by 10 % in North America and by 5 % in Europe. Electronic communication via the internet and the use of smart phones continued to play a major role in the evolution of the pulp and paper segments, while paperboard use has benefited from increased online shopping.

Graphic paper capacity continued to be rationalised in Europe and North America. Paper, paperboard and woodpulp production fell as capacity was reduced following years of declining demand. However, over the same period, paper production rose in the CIS, as paper plants producing graphic paper were closed followed years of declining demand. Newsprint consumption has fallen dramatically, with consumption in North America in 2015 expected to be less than half what it was in 2005.

### Wood-biomass energy<sup>40</sup>

Wood energy is the most important source of renewable energy in the UNECE region. According to the UNECE/FAO Joint Wood Energy Enquiry (JWEE), wood accounts for 46 % of all renewable sources in the 25 UNECE countries who replied to

the JWEE (2013). Wood energy consumption grew at an estimated annual rate of 4.8 % in the period 2011-2013. The forest-based industry was the largest consumer of wood energy (43.9 %), followed by the residential (35.8 %) and combined heat and power (17.3 %) sectors.

Most of the demand is concentrated in the EU. Wood pellets dominated international wood energy trade, with Canada, the US and the Russian Federation being the main exporters of wood pellets to the EU.

The consumption of biomass for heating and electricity in the EU has grown significantly since 2005. According to the data provided in the National Renewable Energy Action Plans (NREAPs), biomass consumption for heating and electricity is expected to increase from 86.5 million tonnes of oil equivalent (Mtoe) in 2012 to 110.5 Mtoe in 2020. NREAPs forecasts that forest-based biomass supply will grow from 71 Mtoe in 2012 to 73.6 Mtoe in 2020.

A number of major European utilities that use biomass in large thermal power plants, mostly in the form of wood pellets, have established the Sustainable Biomass Partnership<sup>41</sup>. This is an industry led project to develop sustainability standards and processes.

6.55 million tonnes were imported into the European Union (EU28), an increase of almost half a million tonnes. The US and Canada were the main export partners; the US supplied 3.89 million tonnes (59 %) and Canada 1.25 million tonnes (19 %).

With more than 20 export-oriented pellet plants under construction or with credible plans to begin operations in the next two years in the southern states of the US, further significant growth in North American pellet exports can be expected.

The use of wood-biomass energy within the UNECE region is shown in Table 9.

**Table 9: Use of wood-biomass energy by sector within the UNECE region (2011-2013)<sup>42,43,44</sup>.**

Energy use	2011	2013
	% energy use	
Residential	39	41
Industrial	38	29
Power and heat	20	28
Other	3	2

<sup>38</sup> <http://www.unece.org/fileadmin/DAM/timber/publications/2015-FPAMR-E.pdf>

<sup>39</sup> <http://www.cepi.org/>

<sup>40</sup> <http://www.unece.org/fileadmin/DAM/timber/publications/2015-FPAMR-E.pdf>

<sup>41</sup> <http://www.sustainablebiomasspartnership.org/>

<sup>42</sup> <http://www.unece.org/fileadmin/DAM/timber/publications/FPAMR2013.pdf>

<sup>43</sup> [http://www.unece.org/fileadmin/DAM/timber/publications/FPAMR-2014-final\\_01.pdf](http://www.unece.org/fileadmin/DAM/timber/publications/FPAMR-2014-final_01.pdf)

<sup>44</sup> At the time of writing, wood energy data for 2014 was not available.

## Independent forest certification

As of May 2015, the major certification schemes, the Forest Stewardship Council (FSC)<sup>45</sup> and the Programme for the Endorsement of Forest Certification (PEFC)<sup>46</sup> reported a global total of 446.5 million hectares of forestlands certified against their standards (includes an estimated 7.5 million hectares certified under both schemes). This was an increase of 6.2 million hectares (1.4 %) over the previous 12 months.

In July 2015, the European Timber Trade Federation (ETTF)<sup>47</sup> announced projects by national federations in Denmark, France, Germany, Italy and Spain to develop procurement policies favouring certified timber.

In July 2014, the Russian Federation launched EGAIS, a system for monitoring harvested timber. As of July 2014, all freight traffic of harvested timber must have supporting documentation establishing its origin. After July 2015, forest users will register transactions via an electronic form; administrative responsibility for violation of the rules of the Federal Law will come into force in January 2016<sup>48</sup>.

The potential global supply of certified roundwood is shown in Table 10.

**Table 10: Potential global and regional supply of roundwood from certified resources (2012-2015)<sup>49</sup>.**

Region	Total forest area M ha	Certified forest area			Certified forest area			Estimated industrial roundwood from certified forests			Estimated proportion of total roundwood production from certified forests		
		M ha			%			M m <sup>3</sup>			%		
		2012	2013	2015	2012	2013	2015	2012	2013	2015	2012	2013	2015
N. America	614.2	198.0	215.8	217.3	32.2	35.1	35.4	224.0	244.2	245.9	12.7	13.8	13.9
Europe	168.1	95.4	100.2	109.6	56.7	59.6	65.2	224.7	236.1	258.1	12.7	13.3	14.6
CIS	836.9	47.5	53.4	62.9	5.7	6.4	7.5	9.1	10.2	12.0	0.5	0.6	0.7
Oceania <sup>50</sup>	191.4	13.2	11.9	12.5	6.9	6.2	6.5	3.8	3.4	3.6	0.2	0.2	0.2
Africa	674.4	7.3	7.5	6.5	1.1	1.1	1.0	0.8	2.2	2.0	0.0	0.1	0.1
L. America	955.6	14.7	15.7	17.1	1.5	1.5	1.8	2.9	1.2	1.3	0.2	0.1	0.1
Asia	592.5	9.5	12.5	13.1	1.6	1.6	2.2	3.2	4.0	4.2	0.2	0.2	0.2
<b>Total</b>	<b>4,033.1</b>	<b>385.6</b>	<b>417.0</b>	<b>439.0</b>	<b>9.6</b>	<b>10.3</b>	<b>10.9</b>	<b>468.5</b>	<b>501.3</b>	<b>527.1</b>	<b>26.5</b>	<b>28.3</b>	<b>29.8</b>

<sup>45</sup> <https://ic.fsc.org/en>

<sup>46</sup> <http://www.pefc.org/>

<sup>47</sup> <http://www.ettf.info/>

<sup>48</sup> <http://www.unece.org/fileadmin/DAM/timber/publications/2015-FPAMR-E.pdf>

<sup>49</sup> <http://www.unece.org/fileadmin/DAM/timber/publications/2015-FPAMR-E.pdf>

<sup>50</sup> Oceania is a region centered on the islands of the tropical Pacific Ocean