

# Key Statistics 2015

*European pulp & paper industry*

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# Introduction

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Welcome to the latest issue of CEPI's Key Statistics, giving a clear picture of the European pulp and paper industry's performance in 2015.

The statistics included in this booklet are a compilation of data received from the National Associations which are CEPI's members, under the auspices of CEPI's Statistics Network. Some additional sources, such as Eurostat, have been used where necessary and relevant. Extra statistical information is accessible online to members on CEPI's Members Area website and to non-members by subscription<sup>1</sup>.

The Confederation of European Paper Industries (CEPI) is a Brussels-based non-profit making organisation founded in 1992, representing the European pulp and paper industry towards the European Institutions. Through its member associations, CEPI also

represents approximately 510 pulp, paper and board producing companies across Europe, ranging from small and medium-sized enterprises to multinationals (counting companies with a presence in more than one CEPI country only once). It represents 93% of the European<sup>2</sup> pulp and paper industry in terms of production. The pulp and paper industry provides 179,000 jobs in Europe directly, and 1.5 million in the value chain. It has a turnover of 79 billion euros and adds 16.5 billion euros to the EU GDP. It is strong in export markets, with an export rate of 21% of its production.

## CEPI Members in 2015

National Associations of the following 18 countries: Austria, Belgium, Czech Republic, Finland, France, Germany, Hungary, Italy, The Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden and United Kingdom.



### Data quality

Responsibility for the collection and management of statistical data lies with CEPI's statistics department, which is constantly working to improve the quality of the data reported. In order to further increase the reliability and credibility of the data reported, CEPI has commissioned Ernst & Young to issue a limited assurance statement on the data quality rating that CEPI carried out on its core indicators in the statistics report. The limited assurance statement is available at <http://www.cepi.org/topics/statistics>

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<sup>2</sup> Europe minus the Russian Federation

## CEPI Pulp and Paper Industry\*

	1991	2000	2005	2010	2014	2015	% Change 2015/2014	% Change 2015/2000
<b>Industry Structure</b>								
Number of Companies <sup>1</sup>	1,032	929	831	674	<b>628</b>	<b>633</b>	<b>0.8</b>	<b>-31.9</b>
Number of Mills	1,570	1,309	1,224	992	<b>919</b>	<b>917</b>	<b>-0.2</b>	<b>-29.9</b>
Pulp	296	233	218	172	<b>158</b>	<b>154</b>	<b>-2.5</b>	<b>-33.9</b>
Paper & Board	1,274	1,076	1,006	820	<b>761</b>	<b>763</b>	<b>0.3</b>	<b>-29.1</b>
Number of Paper Machines	2,182	1,858	1,725	1,393	<b>1,289</b>	<b>1,288</b>	<b>-0.1</b>	<b>-30.7</b>
Employment	411,113	279,987	246,785	194,894	<b>181,084</b>	<b>178,212</b>	<b>-1.6</b>	<b>-36.3</b>
Turnover <sup>2</sup> (Million Euros)	n.a.	79,388	74,537	75,790	<b>78,520</b>	<b>78,800</b>	<b>0.4</b>	<b>-0.7</b>
Investments <sup>2</sup> (Million Euros)	n.a.	5,637	5,318	2,913	<b>3,275</b>	<b>3,500</b>	<b>6.9</b>	<b>-37.9</b>
Added Value <sup>2</sup> (Million Euros)	n.a.	24,494	18,154	16,560	<b>16,250</b>	<b>16,500</b>	<b>1.5</b>	<b>-32.6</b>
<b>Total Pulp<sup>3</sup> ('000 Tonnes)</b>								
Production Capacity	39,584	43,842	47,247	44,189	<b>40,778</b>	<b>40,581</b>	<b>-0.5</b>	<b>-7.4</b>
Operating Rate	85.4%	91.2%	88.1%	87.6%	<b>89.6%</b>	<b>89.4%</b>	<b>-0.3</b>	<b>-1.8</b>
Production	33,807	39,962	41,602	38,695	<b>36,551</b>	<b>36,265</b>	<b>-0.8</b>	<b>-9.3</b>
Total Deliveries	n.a.	40,556	42,221	39,612	<b>38,703</b>	<b>38,511</b>	<b>-0.5</b>	<b>-5.0</b>
CEPI Internal Deliveries	n.a.	39,224	40,150	37,045	<b>35,386</b>	<b>35,219</b>	<b>-0.5</b>	<b>-10.2</b>
Consumption <sup>7</sup> (Apparent)	37,815	46,377	47,492	43,849	<b>40,971</b>	<b>41,088</b>	<b>0.3</b>	<b>-11.4</b>
<b>Market Pulp ('000 Tonnes)</b>								
Production	9,314	11,423	13,142	12,706	<b>13,174</b>	<b>13,087</b>	<b>-0.7</b>	<b>14.6</b>
Exports to Outside CEPI	n.a.	1,332	2,071	2,567	<b>3,317</b>	<b>3,292</b>	<b>-0.7</b>	<b>147.2</b>
Imports from Outside CEPI	n.a.	7,924	7,961	7,721	<b>7,736</b>	<b>8,115</b>	<b>4.9</b>	<b>2.4</b>
Consumption <sup>7</sup> (Apparent)	n.a.	18,015	19,032	17,860	<b>17,593</b>	<b>17,910</b>	<b>1.8</b>	<b>-0.6</b>
Exports/Production	n.a.	11.7%	15.8%	20.2%	<b>25.2%</b>	<b>25.2%</b>	<b>0.0</b>	<b>13.5</b>
Imports/Consumption	n.a.	44.0%	41.8%	43.2%	<b>44.0%</b>	<b>45.3%</b>	<b>1.3</b>	<b>1.3</b>
<b>Paper &amp; Board ('000 Tonnes)</b>								
Production Capacity	73,280	97,658	109,801	103,714	<b>101,468</b>	<b>99,673</b>	<b>-1.8</b>	<b>2.1</b>
Operating Rate	88.8%	93.0%	89.5%	91.7%	<b>89.7%</b>	<b>91.2%</b>	<b>1.5</b>	<b>-1.8</b>
Production	65,052	90,823	98,259	95,065	<b>91,019</b>	<b>90,872</b>	<b>-0.2</b>	<b>0.1</b>
CEPI Internal Deliveries	n.a.	78,796	84,661	80,263	<b>76,536</b>	<b>77,509</b>	<b>1.3</b>	<b>-1.6</b>
Exports to Outside CEPI	n.a.	13,887	17,793	19,164	<b>19,125</b>	<b>18,915</b>	<b>-1.1</b>	<b>36.2</b>
Imports from Outside CEPI	n.a.	6,383	5,903	5,783	<b>5,135</b>	<b>5,459</b>	<b>6.3</b>	<b>-14.5</b>
Consumption <sup>7</sup> (Apparent)	60,102	82,065	86,369	81,684	<b>77,028</b>	<b>77,416</b>	<b>0.5</b>	<b>-5.7</b>
Exports/Production	n.a.	15.3%	18.1%	20.2%	<b>21.0%</b>	<b>20.8%</b>	<b>-0.2</b>	<b>5.5</b>
Imports/Consumption	n.a.	7.8%	6.8%	7.1%	<b>6.7%</b>	<b>7.1%</b>	<b>0.4</b>	<b>-0.7</b>

	1991	2000	2005	2010	2014	2015	% Change 2015/2014	% Change 2015/2000
<b>Wood ('000 m<sup>3</sup>)</b>								
Consumption	120,274	148,093	153,380	148,901	<b>146,475</b>	<b>144,567</b>	-1.3	-2.4
Hardwood	30,410	40,048	41,337	38,119	<b>41,000</b>	<b>40,485</b>	-1.3	1.1
Softwood	89,863	108,046	112,043	110,782	<b>105,475</b>	<b>104,082</b>	-1.3	-3.7
Imports/Consumption	12.8%	17.1%	19.2%	17.1%	<b>16.6%</b>	<b>15.3%</b>	-1.3	-10.3
Domestic/Consumption	87.2%	82.9%	80.8%	82.9%	<b>83.4%</b>	<b>84.7%</b>	1.3	2.1
<b>Paper for Recycling ('000 Tonnes)</b>								
Collection	25,452	43,658	53,100	55,917	<b>55,177</b>	<b>55,935</b>	1.4	28.1
Utilisation	25,360	40,922	46,745	48,122	<b>47,635</b>	<b>47,710</b>	0.2	16.6
Exports to Outside CEPI	n.a.	3,751	7,698	9,592	<b>9,496</b>	<b>10,175</b>	7.1	171.3
Exports/Collection	n.a.	8.6%	14.5%	17.2%	<b>17.2%</b>	<b>18.2%</b>	1.0	9.6
Imports from Outside CEPI	n.a.	1,015	1,343	1,796	<b>1,954</b>	<b>1,950</b>	-0.2	92.1
Imports/Utilisation	n.a.	2.5%	2.9%	3.7%	<b>4.1%</b>	<b>4.1%</b>	0.0	1.6
Utilisation Rate	39.0%	45.1%	47.6%	50.6%	<b>52.3%</b>	<b>52.5%</b>	0.2	7.4
<b>Recycling Rate in Europe<sup>4</sup></b>								
Recycling Rate	40.3%	51.8%	61.8%	68.5%	<b>71.4%</b>	<b>71.5%</b>	0.05	19.7
<b>Non-Fibrous Materials ('000 Tonnes)</b>								
Consumption	9,504	15,545	16,496	16,163	<b>15,503</b>	<b>14,887</b>	-4.0	-4.2
<b>Energy and Environment<sup>5</sup></b>								
Fuels Consumption (TJ)	929,863	1,141,232	1,268,995	1,281,746	<b>1,125,963</b>	n.a.		
Biomass Use (%) of Total FC	44.1	49.1	50.1	52.9	<b>57.6</b>	n.a.		
Electricity Consumption (GWh)	86,527	110,424	113,874	113,137	<b>100,518</b>	n.a.		
% of Electricity produced through CHP <sup>6</sup>	88.0	90.4	94.4	95.4	<b>96.1</b>	n.a.		
CO <sub>2</sub> Emissions (Mega Tonnes)	39.05	41.94	43.37	37.98	<b>31.96</b>	<b>31.69</b>	-0.8	-24.4
Specific CO <sub>2</sub> Emissions (kt CO <sub>2</sub> / kt of product)	0.54	0.42	0.39	0.35	<b>0.31</b>	<b>0.30</b>	-0.6	-28.3

<sup>\*</sup> See Glossary on page 30

<sup>1</sup> 510 groups or corporations in 2015, when considering the entities established in one or several countries that are not bound together by legal and/or financial links.

<sup>2</sup> 2014 and 2015 figures are based on members' data, Eurostat and estimates for some countries.

<sup>3</sup> Total Pulp = Market Pulp + Integrated Pulp.

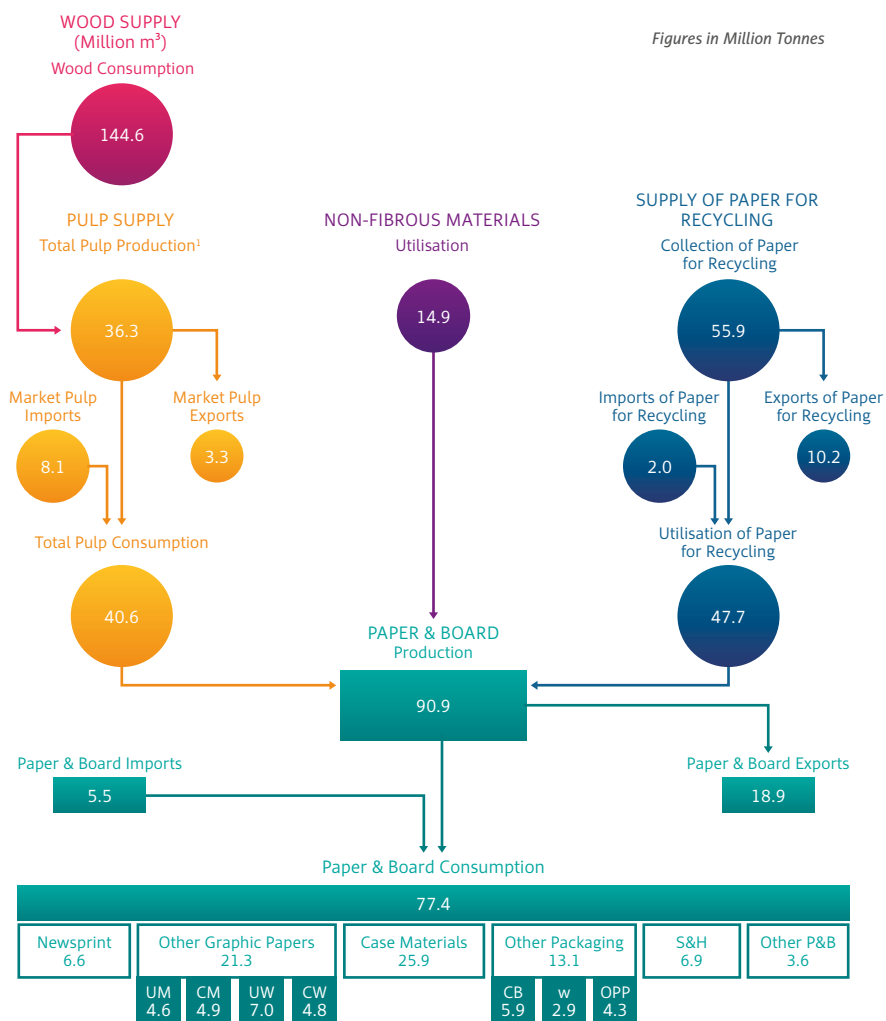
<sup>4</sup> Europe means EU-28 countries plus Norway and Switzerland.

<sup>5</sup> Hungary, Romania and Slovenia are not included in Energy data, except for CO<sub>2</sub> emissions.

<sup>6</sup> Compared to total on-site electricity generation.

<sup>7</sup> CEPI Apparent Consumption = Production - Exports to outside CEPI + Imports from outside CEPI.

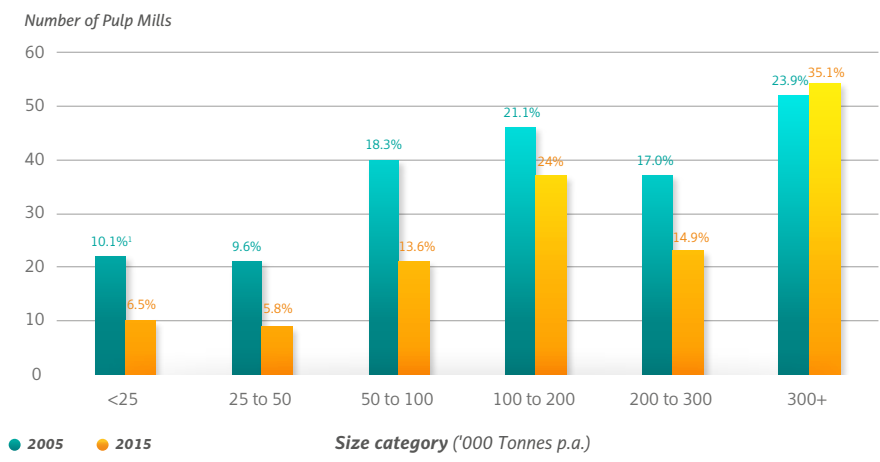
## CEPI Pulp and Paper Industry in 2015



*Paper & Board Consumption = Production + Imports from outside CEPI - Exports to outside CEPI*  
*UM = Uncoated Mechanical - CM = Coated Mechanical - UW = Uncoated Woodfree - CW = Coated Woodfree*  
*CB = Carton Board - W = Wrappings - OPP = Other Paper & Board for Packaging*  
*S&H = Sanitary and Household*

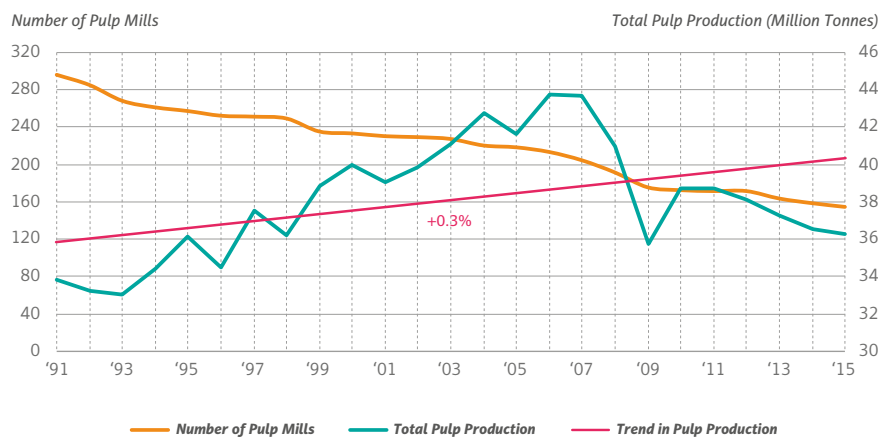
<sup>1</sup> of which Integrated Pulp 23.2 Million Tonnes

Number of CEPI Pulp Mills by Volume in 2005 and 2015



<sup>1</sup> Share of Total Number of Mills

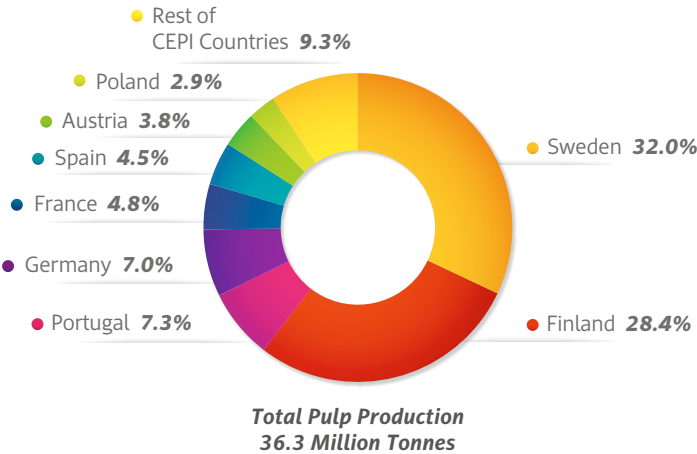
Number of CEPI Pulp Mills and Total Pulp Production



CEPI Total Pulp<sup>1</sup> Production and Consumption

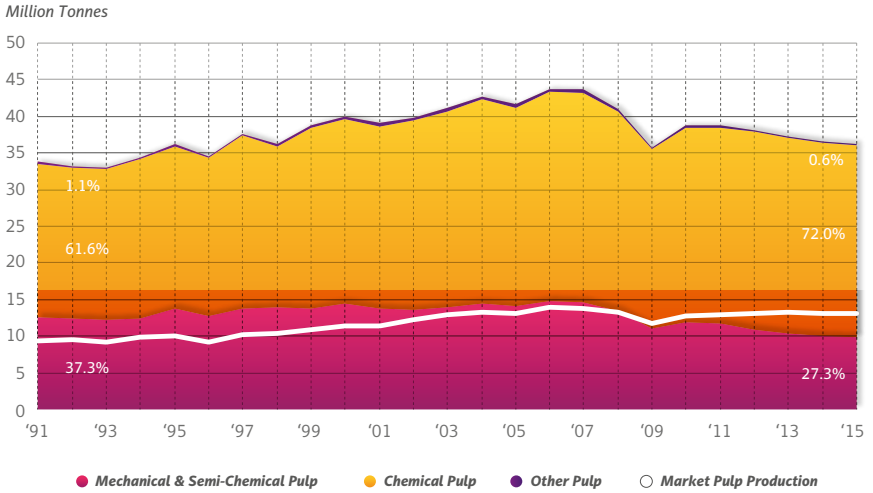
'000 Tonnes	PRODUCTION			CONSUMPTION		
	2014	2015	% Change 2015/2014	2014	2015	% Change 2015/2014
<b>Mechanical &amp; Semi-Chemical</b>	10,109	<b>9,914</b>	-1.9	10,184	<b>9,961</b>	-2.2
Sulphite Pulp	1,827	<b>1,665</b>	-8.8	1,556	<b>1,341</b>	-13.8
Sulphate Pulp	24,428	<b>24,456</b>	0.1	28,909	<b>29,453</b>	1.9
<b>Total Chemical Pulp</b>	26,255	<b>26,121</b>	-0.5	30,465	<b>30,794</b>	1.1
<b>Total Woodpulp</b>	36,364	<b>36,035</b>	-0.9	40,649	<b>40,755</b>	0.3
<b>Other Pulp</b>	187	<b>230</b>	23.0	321	<b>333</b>	3.7
<b>Total Pulp<sup>1</sup></b>	<b>36,551</b>	<b>36,265</b>	<b>-0.8</b>	<b>40,971</b>	<b>41,088</b>	<b>0.3</b>

CEPI Total Pulp<sup>1</sup> Production by Country in 2015

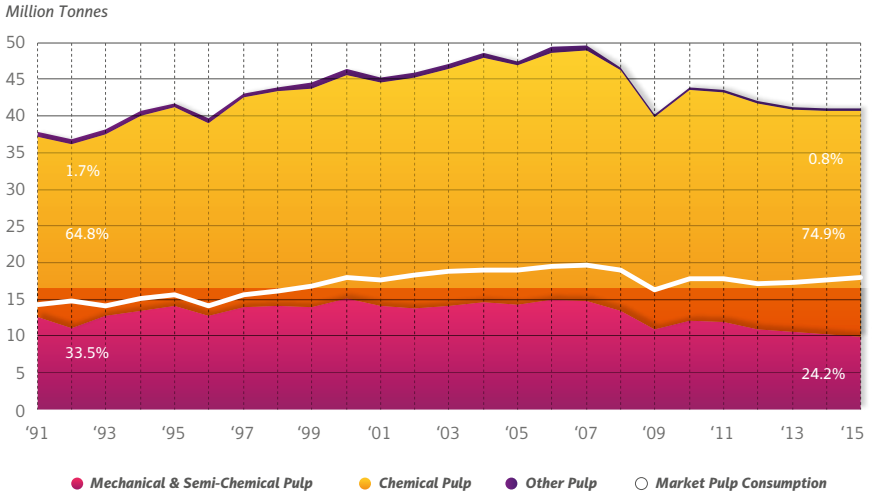


<sup>1</sup> Total Pulp = Market Pulp + Integrated Pulp

## CEPI Total Pulp<sup>1</sup> Production by Grade and Market Pulp Production

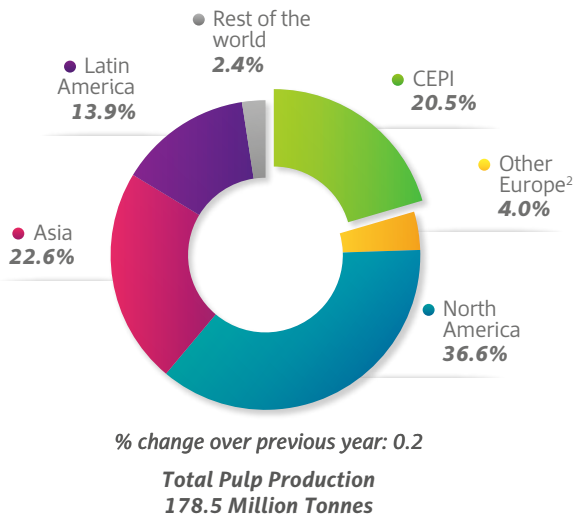


## CEPI Total Pulp<sup>1</sup> Consumption by Grade and Market Pulp Consumption

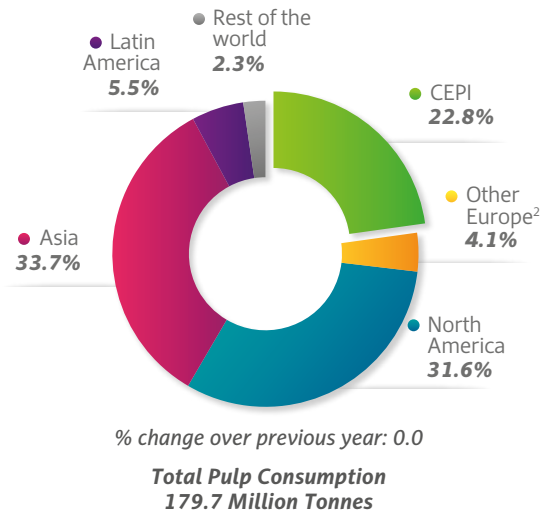


<sup>1</sup> Total Pulp = Integrated Pulp + Market Pulp

World Total Pulp<sup>1</sup> Production by Region in 2014<sup>3</sup>



World Total Pulp<sup>1</sup> Consumption by Region in 2014<sup>3</sup>



<sup>1</sup> Total Pulp = Integrated Pulp + Market Pulp

<sup>2</sup> Other Europe: Total Europe excluding CEPI countries

<sup>3</sup> Sources: CEPI, RISI - 2015 figures will be available in October 2016

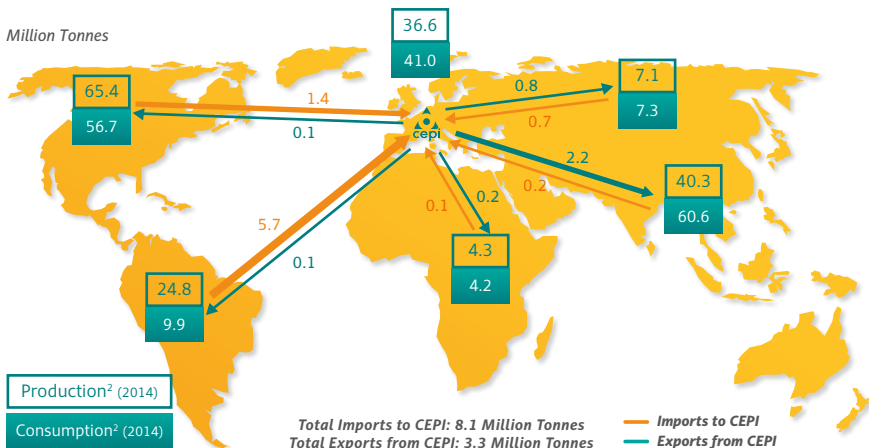
## CEPI Exports of Market Pulp to Other Regions

'000 Tonnes	2000	2005	2010	2014	2015	% Share of Total	% Change 2015/2014
Other Europe <sup>1</sup>	724	674	719	824	<b>769</b>	23.4	-6.7
North America	104	187	62	46	<b>59</b>	1.8	28.7
Latin America	6	20	49	75	<b>70</b>	2.1	-6.5
Asia	412	1,076	1,595	2,232	<b>2,159</b>	65.6	-3.2
Rest of the World	86	114	142	140	<b>235</b>	7.1	67.6
<b>Total</b>	<b>1,332</b>	<b>2,071</b>	<b>2,567</b>	<b>3,317</b>	<b>3,292</b>	<b>100.0</b>	<b>-0.7</b>

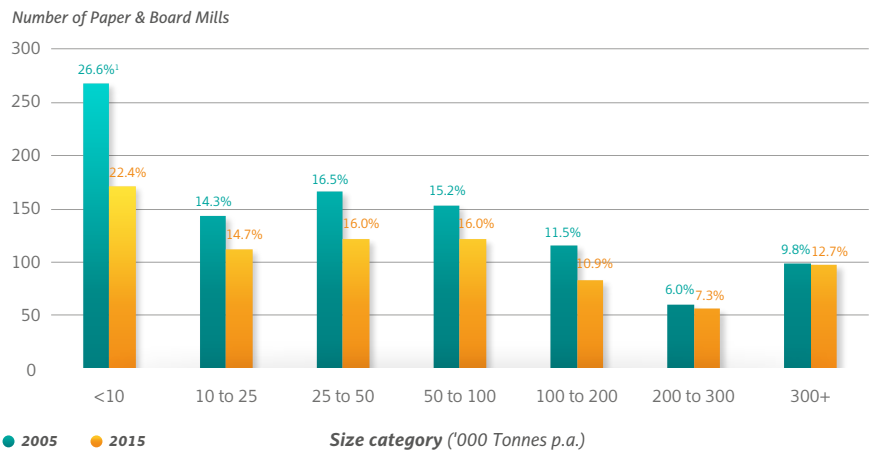
## CEPI Imports of Market Pulp from Other Regions

'000 Tonnes	2000	2005	2010	2014	2015	% Share of Total	% Change 2015/2014
Other Europe <sup>1</sup>	657	615	480	612	<b>658</b>	8.1	7.4
North America	4,623	3,891	2,292	1,569	<b>1,421</b>	17.5	-9.4
Latin America	1,916	2,825	4,733	5,373	<b>5,681</b>	70.0	5.7
Asia	272	197	134	99	<b>219</b>	2.7	120.9
Rest of the World	456	433	81	83	<b>135</b>	1.7	62.4
<b>Total</b>	<b>7,924</b>	<b>7,961</b>	<b>7,721</b>	<b>7,736</b>	<b>8,115</b>	<b>100.0</b>	<b>4.9</b>

## CEPI Trade Flows of Market Pulp in 2015

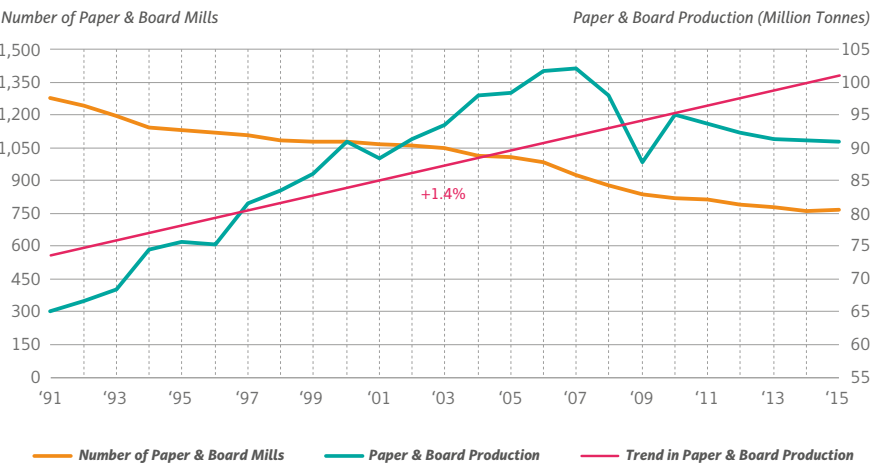
<sup>1</sup> Other Europe: total Europe excluding CEPI countries<sup>2</sup> Production and consumption of total pulp (market and integrated)

Number of CEPI Paper & Board Mills by Volume in 2005 and 2015



<sup>1</sup> Share of Total Number of Mills

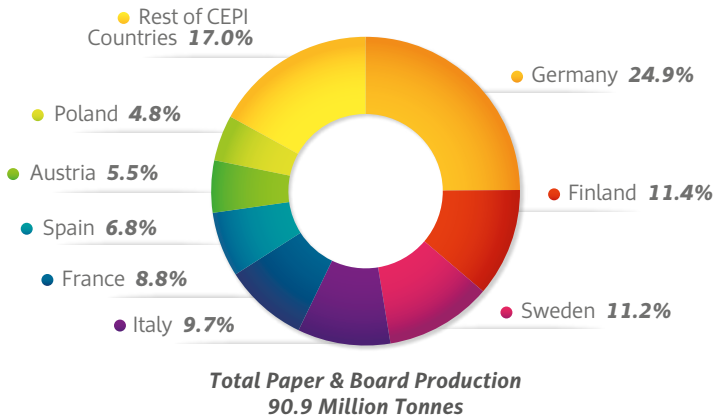
Number of CEPI Paper & Board Mills and Paper & Board Production



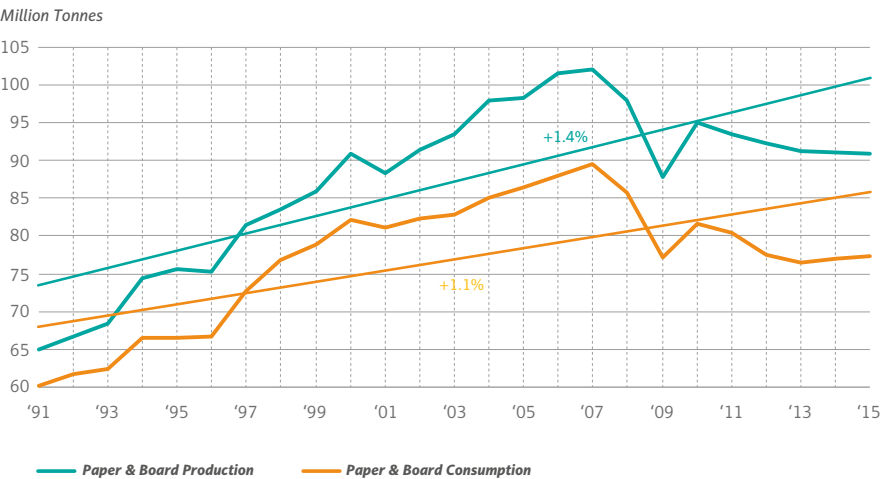
## CEPI Paper & Board Production and Consumption

'000 Tonnes	PRODUCTION			CONSUMPTION		
	2014	2015	% Change 2015/2014	2014	2015	% Change 2015/2014
Newsprint	7,594	<b>7,019</b>	-7.6	7,042	<b>6,606</b>	-6.2
Uncoated Mechanical	5,634	<b>5,503</b>	-2.3	4,648	<b>4,623</b>	-0.5
Coated Mechanical	7,050	<b>6,789</b>	-3.7	5,142	<b>4,926</b>	-4.2
Uncoated Woodfree	9,017	<b>8,934</b>	-0.9	7,149	<b>7,036</b>	-1.6
Coated Woodfree	7,364	<b>7,020</b>	-4.7	4,938	<b>4,754</b>	-3.7
Other Graphic Papers	29,065	<b>28,246</b>	-2.8	21,876	<b>21,339</b>	-2.5
<b>Total Graphic Papers</b>	<b>36,659</b>	<b>35,265</b>	<b>-3.8</b>	<b>28,918</b>	<b>27,946</b>	<b>-3.4</b>
<b>Sanitary and Household</b>	<b>6,998</b>	<b>7,153</b>	<b>2.2</b>	<b>6,700</b>	<b>6,925</b>	<b>3.4</b>
Case Materials	26,205	<b>27,059</b>	3.3	24,870	<b>25,894</b>	4.1
Carton Board	8,551	<b>8,710</b>	1.9	5,744	<b>5,891</b>	2.6
Wrappings	4,106	<b>4,071</b>	-0.9	2,994	<b>2,866</b>	-4.3
Other Paper & Board for Packaging	4,591	<b>4,733</b>	3.1	4,159	<b>4,300</b>	3.4
<b>Total Packaging Papers</b>	<b>43,452</b>	<b>44,572</b>	<b>2.6</b>	<b>37,767</b>	<b>38,951</b>	<b>3.1</b>
<b>Other Paper &amp; Board</b>	<b>3,910</b>	<b>3,881</b>	<b>-0.7</b>	<b>3,642</b>	<b>3,594</b>	<b>-1.3</b>
<b>Total Paper &amp; Board</b>	<b>91,019</b>	<b>90,872</b>	<b>-0.2</b>	<b>77,028</b>	<b>77,416</b>	<b>0.5</b>

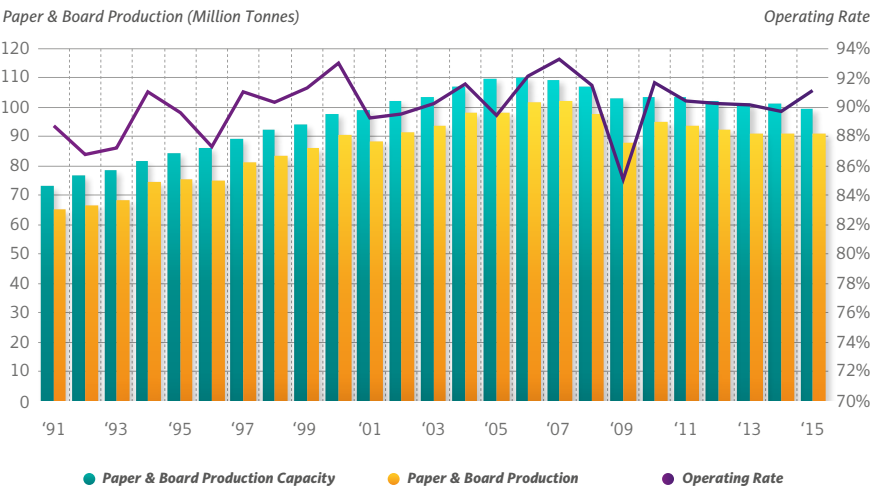
## CEPI Paper & Board Production by Country in 2015



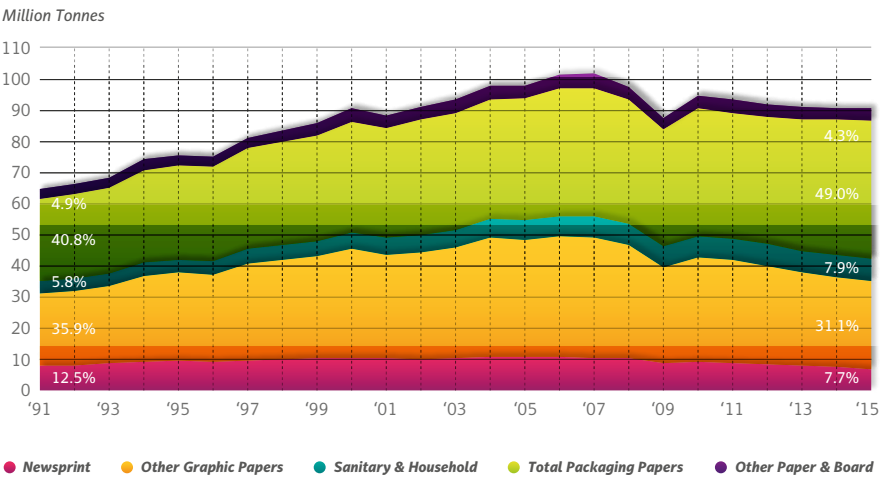
CEPI Paper & Board Production and Consumption



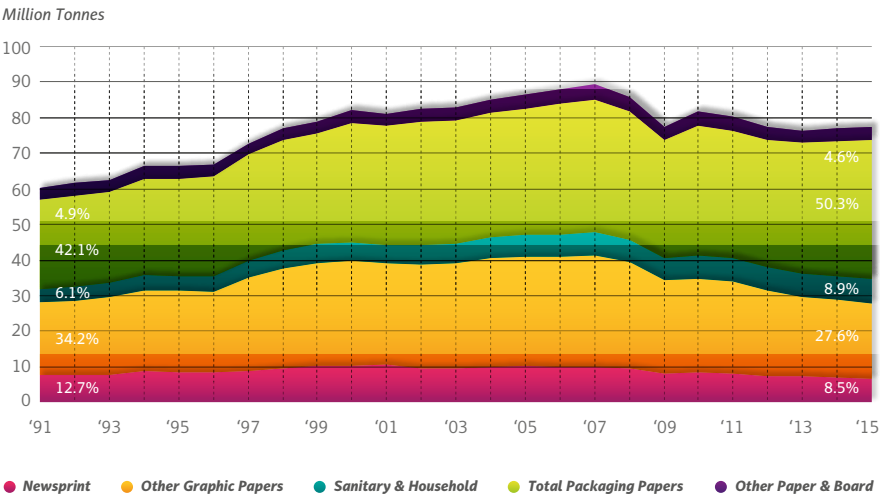
CEPI Paper & Board Production and Capacity



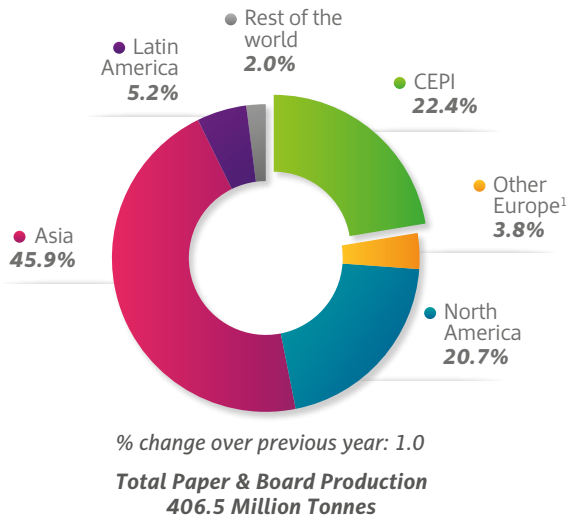
CEPI Paper & Board Production by Grade



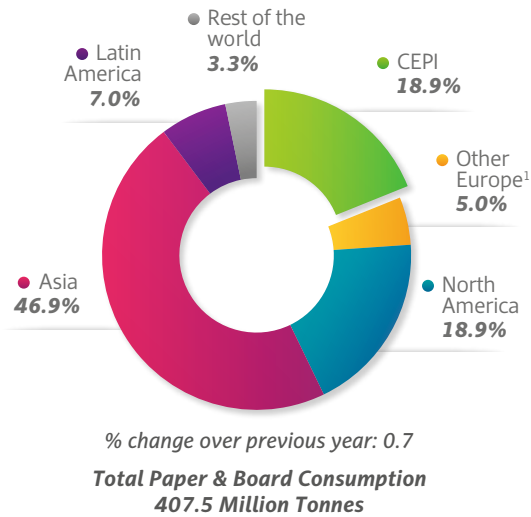
CEPI Paper & Board Consumption by Grade



Paper & Board Production by Region in 2014<sup>2</sup>



Paper & Board Consumption by Region in 2014<sup>2</sup>



<sup>1</sup> Other Europe: total Europe excluding CEPI countries

<sup>2</sup> Sources: CEPI, RISI - 2015 figures will be available in October 2016

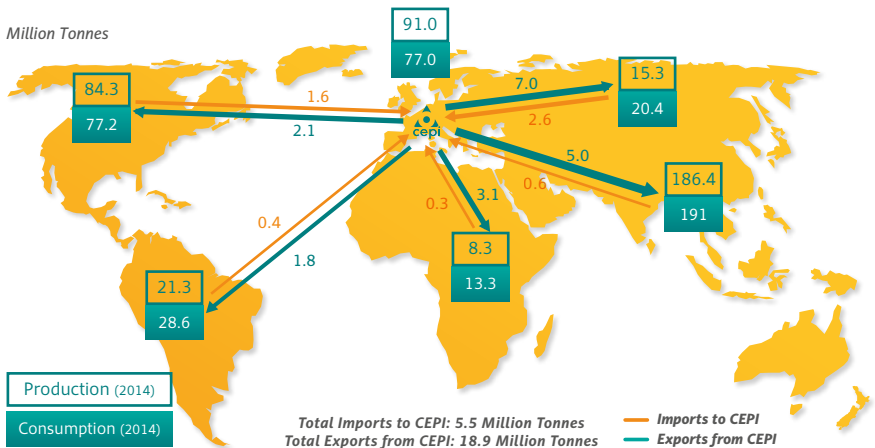
### CEPI Exports of Paper & Board to Other Regions

'000 Tonnes	2000	2005	2010	2014	2015	% Share of Total	% Change 2015/2014
Other Europe <sup>1</sup>	6,090	6,825	7,349	7,179	<b>7,001</b>	37.0	-2.5
North America	2,283	2,802	2,055	1,943	<b>2,060</b>	10.9	6.0
Latin America	874	1,194	1,879	1,765	<b>1,801</b>	9.5	2.1
Asia	2,933	4,742	5,099	5,174	<b>4,966</b>	26.3	-4.0
Rest of the World	1,707	2,229	2,783	3,064	<b>3,087</b>	16.3	0.8
<b>Total</b>	<b>13,887</b>	<b>17,793</b>	<b>19,164</b>	<b>19,125</b>	<b>18,915</b>	<b>100.0</b>	<b>-1.1</b>

### CEPI Imports of Paper & Board from Other Regions

'000 Tonnes	2000	2005	2010	2014	2015	% Share of Total	% Change 2015/2014
Other Europe <sup>1</sup>	3,318	2,727	2,525	2,371	<b>2,623</b>	48.1	10.6
North America	2,191	1,915	1,829	1,504	<b>1,622</b>	29.7	7.8
Latin America	198	498	498	360	<b>363</b>	6.6	0.7
Asia	332	394	625	590	<b>577</b>	10.6	-2.1
Rest of the World	344	369	307	310	<b>274</b>	5.0	-11.6
<b>Total</b>	<b>6,383</b>	<b>5,903</b>	<b>5,783</b>	<b>5,135</b>	<b>5,459</b>	<b>100.0</b>	<b>6.3</b>

### CEPI Trade Flows of Paper & Board in 2015

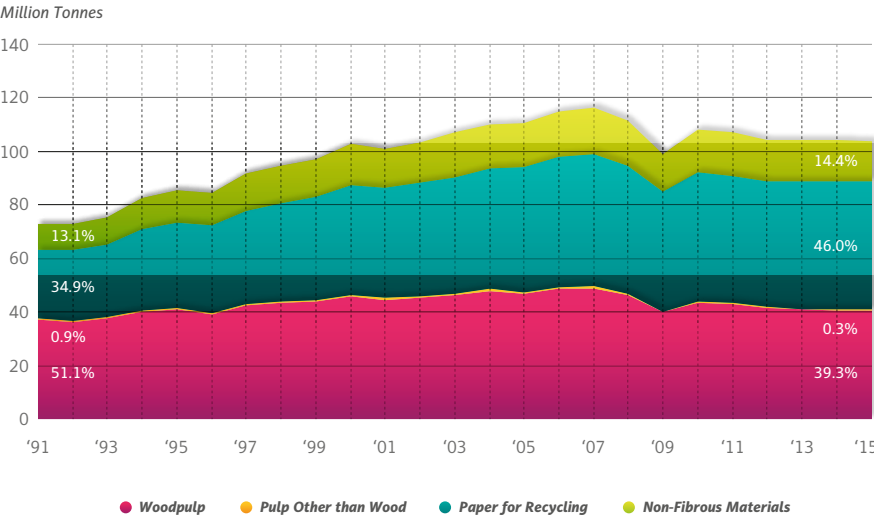


<sup>1</sup> Other Europe: total Europe excluding CEPI countries

CEPI Raw Materials Consumption

'000 Tonnes	1991	2000	2005	2010	2014	2015	% Share of Total	% Change 2015/2014
Woodpulp	37,162	45,619	46,861	43,533	40,649	<b>40,755</b>	39.3	0.3
Pulp Other than Wood	653	758	631	316	321	<b>333</b>	0.3	3.7
Paper for Recycling	25,360	40,922	46,745	48,122	47,635	<b>47,710</b>	46.0	0.2
Non-Fibrous Materials	9,504	15,545	16,496	16,163	15,503	<b>14,887</b>	14.4	-4.0
<b>Total Raw Materials</b>	<b>72,679</b>	<b>102,844</b>	<b>110,733</b>	<b>108,134</b>	<b>104,108</b>	<b>103,685</b>	<b>100.0</b>	<b>-0.4</b>

CEPI Raw Materials Consumption



## CEPI Wood Consumption

'000 m <sup>3</sup>	1991	2000	2005	2010	2014	2015	% Share of Total	% Change 2015/2014
Softwood Roundwood	65,240	72,372	74,415	76,641	72,435	<b>70,575</b>	48.8	-2.6
Softwood Chips	24,623	35,673	37,628	34,141	33,041	<b>33,507</b>	23.2	1.4
<b>Total Softwood</b>	<b>89,863</b>	<b>108,046</b>	<b>112,043</b>	<b>110,782</b>	<b>105,475</b>	<b>104,082</b>	<b>72.0</b>	<b>-1.3</b>
Hardwood Roundwood	28,963	38,542	39,914	36,635	38,444	<b>38,465</b>	26.6	0.1
Hardwood Chips	1,447	1,505	1,423	1,483	2,556	<b>2,020</b>	1.4	-21.0
<b>Total Hardwood</b>	<b>30,410</b>	<b>40,048</b>	<b>41,337</b>	<b>38,119</b>	<b>41,000</b>	<b>40,485</b>	<b>28.0</b>	<b>-1.3</b>
<b>Total Roundwood</b>	<b>94,204</b>	<b>110,915</b>	<b>114,329</b>	<b>113,276</b>	<b>110,879</b>	<b>109,040</b>	<b>75.4</b>	<b>-1.7</b>
<b>Total Chips</b>	<b>26,070</b>	<b>37,179</b>	<b>39,051</b>	<b>35,625</b>	<b>35,596</b>	<b>35,527</b>	<b>24.6</b>	<b>-0.2</b>
<b>Total Wood</b>	<b>120,274</b>	<b>148,093</b>	<b>153,380</b>	<b>148,901</b>	<b>146,475</b>	<b>144,567</b>	<b>100.0</b>	<b>-1.3</b>

## Share in CEPI Wood Consumption in 2015

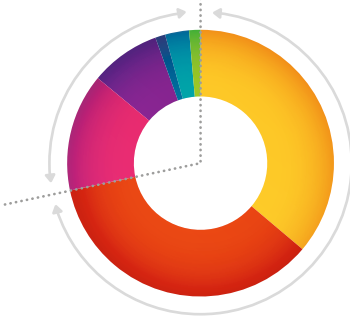
By Species<sup>1</sup>

Hardwood: 28.0%

- Birch **14.3%**
- Eucalyptus **8.5%**
- Beech **2.9%**
- Aspen **1.2%**
- Other Hardwood<sup>2</sup> **1.4%**

Softwood: 72.0%

- Pine **36.2%**
- Spruce **35.5%**



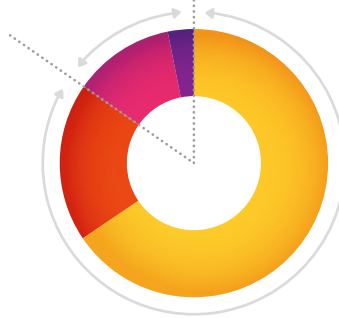
## By Origin

Imported: 15.3%

- Imported Roundwood **12.2%**
- Imported Chips **3.1%**

Domestic: 84.7%

- Domestic Roundwood **65.5%**
- Domestic Chips **19.2%**

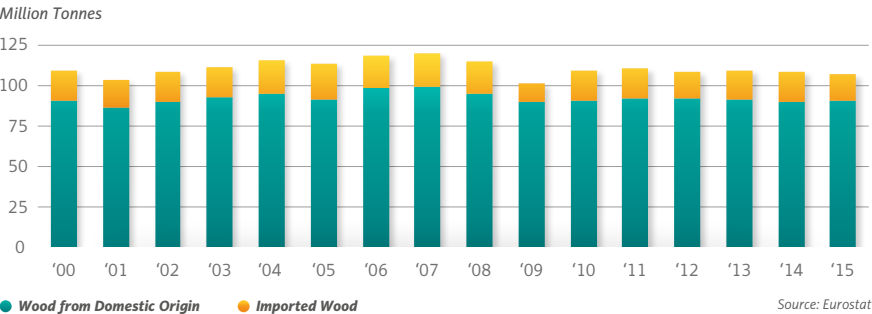


**Total CEPI Wood Consumption**  
**144.6 Million m<sup>3</sup>**

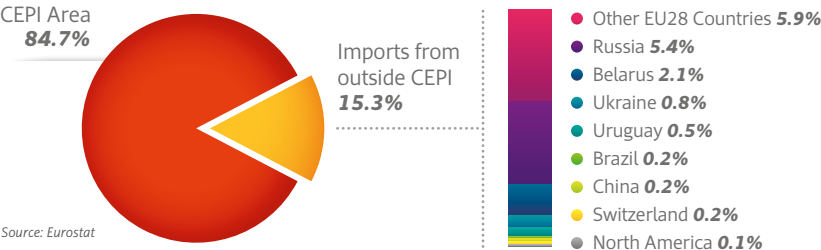
<sup>1</sup> Based on a sample representing 90% of total CEPI consumption

<sup>2</sup> Other Hardwood = hornbeam, ash, maple, accacia, quercus-cerris, oak, alder, poplar, willow, chesnut.

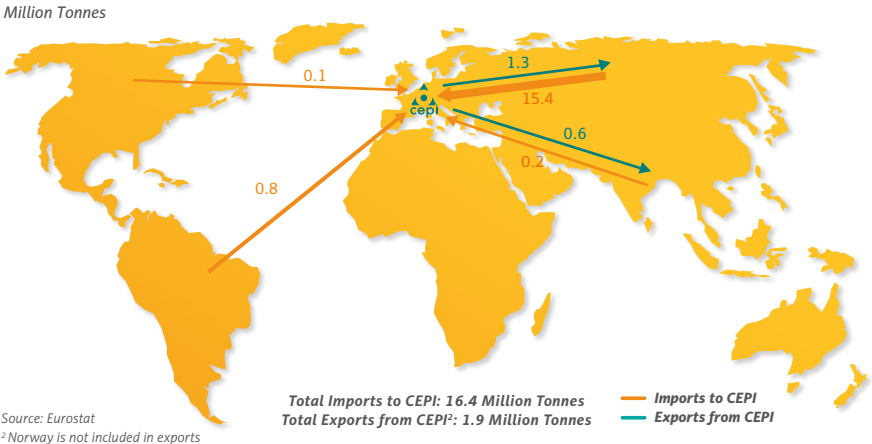
CEPI Wood Consumption by Origin



CEPI Wood Consumption Origin in 2015



CEPI Trade Flows of Wood in 2015



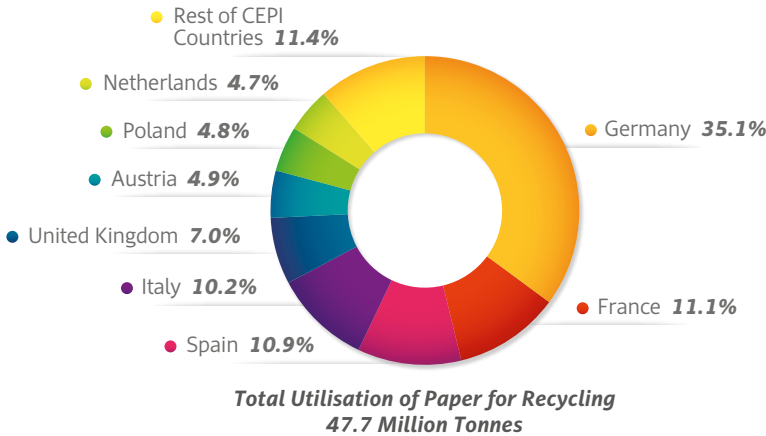
## CEPI Utilisation of Paper for Recycling by Sector in 2015

'000 Tonnes Paper Sector	Grades of Paper for Recycling							
	A Mixed Grades	B Corrugated and Kraft	C Newspapers & Magazines	D Other Grades	E Total Use of Paper for Recycling	F Usage by Sector <sup>1</sup> %	G Total P&B Production	E:G Utilisation Rate <sup>2</sup> %
Newsprint	27	0	6,428	59	<b>6,514</b>	13.7	<b>7,019</b>	92.8
Other Graphic Papers	165	22	2,733	686	<b>3,606</b>	7.6	<b>28,246</b>	12.8
<b>Total Newsprint + O.G.P.</b>	<b>192</b>	<b>22</b>	<b>9,161</b>	<b>745</b>	<b>10,120</b>	<b>21.2</b>	<b>35,265</b>	<b>28.7</b>
Case Materials	4,517	19,760	241	881	<b>25,400</b>	53.2	<b>27,059</b>	93.9
Carton Board	1,804	566	120	866	<b>3,357</b>	7.0	<b>8,710</b>	38.5
Wrappings, Other Pack.	2,036	1,708	161	491	<b>4,395</b>	9.2	<b>8,803</b>	49.9
<b>Total Packaging Papers</b>	<b>8,357</b>	<b>22,034</b>	<b>522</b>	<b>2,238</b>	<b>33,152</b>	<b>69.5</b>	<b>44,572</b>	<b>74.4</b>
<b>Sanitary and Household</b>	<b>285</b>	<b>108</b>	<b>620</b>	<b>1,878</b>	<b>2,890</b>	<b>6.1</b>	<b>7,153</b>	<b>40.4</b>
<b>Other Paper &amp; Board</b>	<b>264</b>	<b>961</b>	<b>151</b>	<b>172</b>	<b>1,548</b>	<b>3.2</b>	<b>3,881</b>	<b>39.9</b>
<b>Total Paper &amp; board</b>	<b>9,098</b>	<b>23,125</b>	<b>10,454</b>	<b>5,034</b>	<b>47,710</b>	<b>100.0</b>	<b>90,872</b>	<b>52.5</b>
<b>Share of Total</b>	<b>19.1%</b>	<b>48.5%</b>	<b>21.9%</b>	<b>10.6%</b>	<b>100.0%</b>			

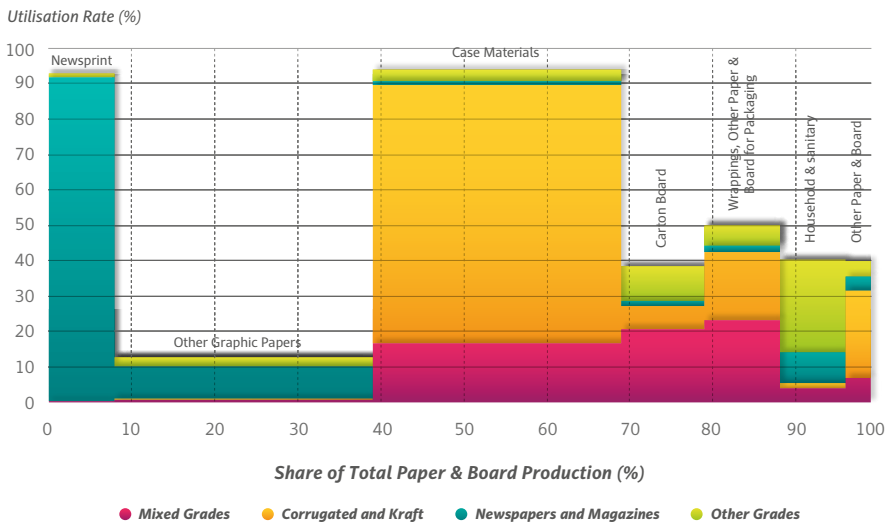
<sup>1</sup> Utilisation by sector: total use of paper for recycling in a sector as % of the total paper for recycling used by the industry

<sup>2</sup> Utilisation rate: use of paper for recycling in a sector as % of total paper & board production in that sector

## CEPI Utilisation of Paper for Recycling by Country in 2015

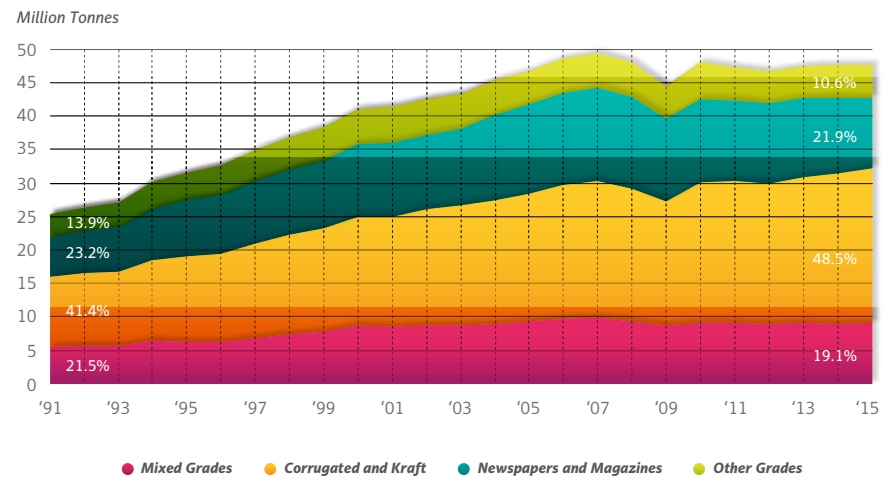


CEPI Utilisation of Paper for Recycling by Sector in 2015

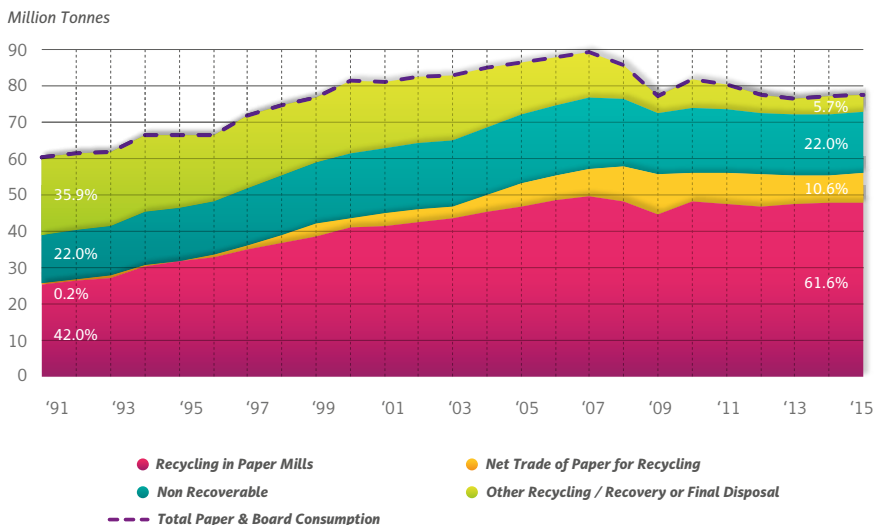


**For instance:** case materials represent 30% of total paper and board production, have an utilisation rate of 94% and use 53.2% of total paper for recycling volumes used by the industry. **Important Note:** Paper for recycling is composed of fibres but also unusable materials - non-paper components as well as paper and board detrimental to production. The share of unusable materials depends on the actual sorting and collection of used paper. It varies according to grades of paper for recycling and countries. The volume of recycled fibres actually used to produce new paper is therefore lower than the volume of paper for recycling considered. The utilisation rate compares utilisation of paper for recycling to paper & board production.

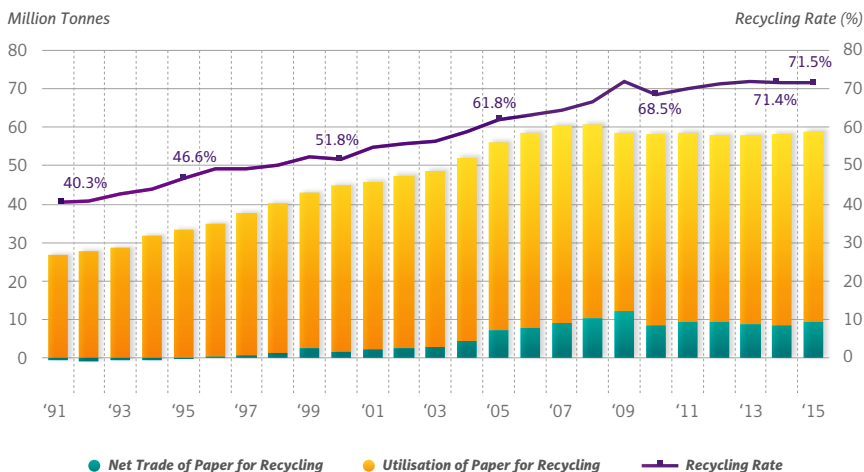
CEPI Utilisation of Paper for Recycling by Grade



## CEPI Paper & Board Consumption and Recycling



## Utilisation, Net Trade and Recycling Rate<sup>1</sup> of Paper for Recycling in Europe<sup>2</sup>



<sup>1</sup> Recycling Rate = "Utilisation of Paper for Recycling + Net Trade of Paper for Recycling", compared to Paper & Board Consumption

<sup>2</sup> Europe means EU-28 countries plus Norway and Switzerland

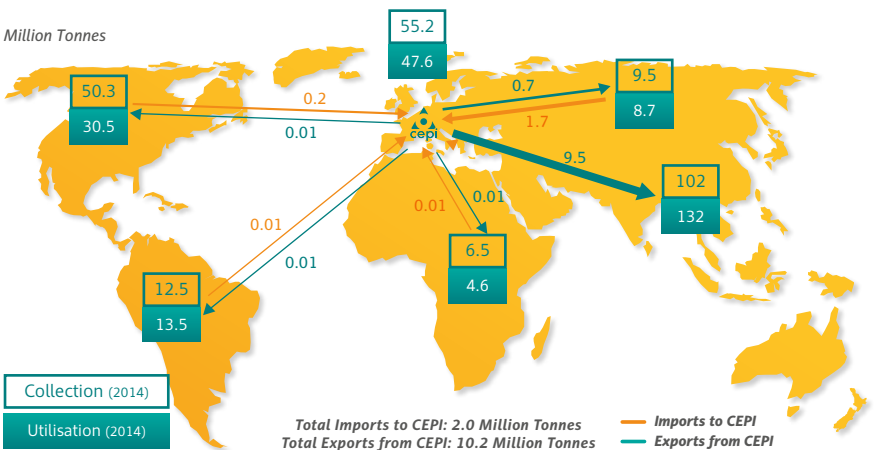
CEPI Exports of Paper for Recycling to Other Regions

'000 Tonnes	2000	2005	2010	2014	2015	% Share of Total	% Change 2015/2014
Other Europe <sup>1</sup>	676	444	373	551	695	6.8	26.3
North America	47	22	27	5	2	0.0	-70.2
Latin America	7	5	21	13	9	0.1	-29.0
Asia	2,894	7,087	9,157	8,914	9,456	92.9	6.1
Rest of the World	127	140	14	13	13	0.1	0.4
Total	3,751	7,698	9,592	9,496	10,175	100.0	7.1

CEPI Imports of Paper for Recycling from Other Regions

'000 Tonnes	2000	2005	2010	2014	2015	% Share of Total	% Change 2015/2014
Other Europe <sup>1</sup>	735	1,131	1,596	1,703	1,729	88.7	1.5
North America	264	199	184	214	187	9.6	-12.5
Latin America	0	4	3	9	17	0.9	86.2
Asia	9	0	6	8	2	0.1	-80.2
Rest of the World	7	9	8	20	15	0.8	-23.1
Total	1,015	1,343	1,796	1,954	1,950	100.0	-0.2

CEPI Trade Flows of Paper for Recycling in 2015



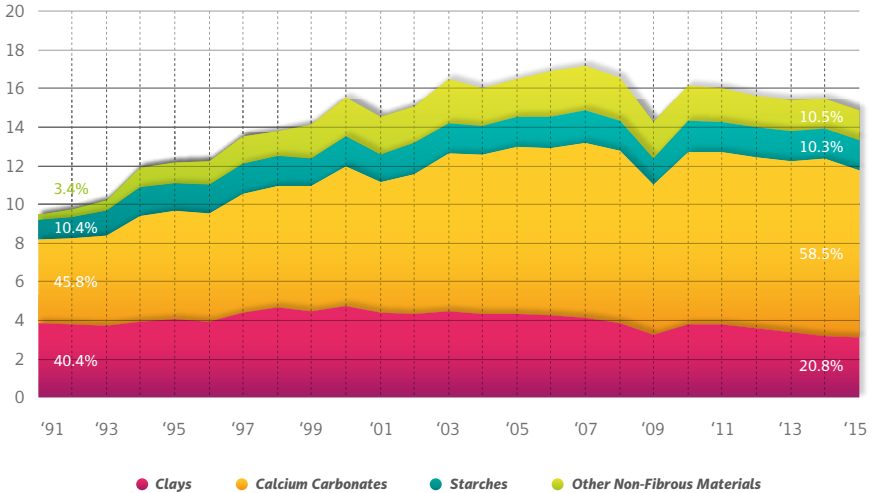
<sup>1</sup> Other Europe: total Europe excluding CEPI countries

### CEPI Non-Fibrous Materials Consumption

'000 Tonnes	1991	2000	2005	2010	2014	2015	% Share of Total	% Change 2015/2014
Clays (coating and filler)	3,842	4,716	4,323	3,825	3,186	<b>3,095</b>	20.8	-2.9
Calcium Carbonates (coating and filler)	4,349	7,247	8,662	8,903	9,197	<b>8,703</b>	58.5	-5.4
Starches (native and modified)	989	1,551	1,535	1,593	1,524	<b>1,528</b>	10.3	0.2
Other Non-Fibrous Materials	324	2,031	1,976	1,842	1,595	<b>1,562</b>	10.5	-2.1
<b>Non Fibrous Materials</b>	<b>9,504</b>	<b>15,545</b>	<b>16,496</b>	<b>16,163</b>	<b>15,503</b>	<b>14,887</b>	<b>100.0</b>	<b>-4.0</b>

### CEPI Non-Fibrous Materials Consumption

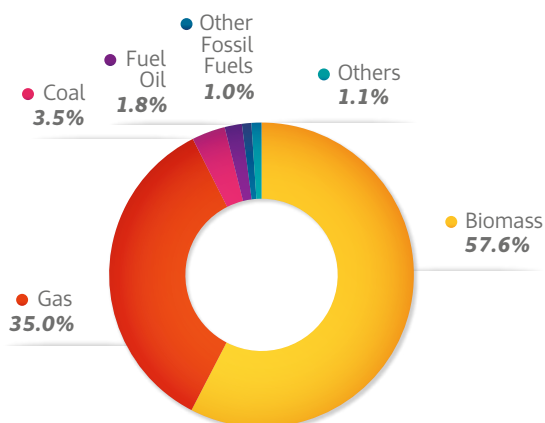
Million Tonnes



## CEPI Primary Energy and Electricity Consumption<sup>1</sup>

	1991	2000	2005	2010	2013	2014	% Share of Total	% Change 2014/2013
<b>Fuels Consumption (TJ)</b>	<b>929,863</b>	<b>1,141,232</b>	<b>1,268,995</b>	<b>1,281,746</b>	<b>1,171,251</b>	<b>1,125,963</b>	<b>100.0</b>	<b>-3.9</b>
of which:								
Gas (TJ)	259,593	404,946	489,425	489,565	407,227	<b>393,536</b>	35.0	-3.4
Fuel Oil (TJ)	129,461	90,914	67,454	37,856	25,238	<b>20,582</b>	1.8	-18.4
Coal (TJ)	113,867	59,304	48,314	53,280	46,100	<b>39,966</b>	3.5	-13.3
Other Fossil Fuels (TJ)	10,134	19,052	19,714	14,529	10,520	<b>11,275</b>	1.0	7.2
Biomass (TJ)	413,248	562,865	635,511	677,569	667,739	<b>648,586</b>	57.6	-2.9
Other (TJ)	3,560	4,151	8,602	8,948	14,426	<b>12,018</b>	1.1	-16.7
<b>Net Bought Electricity (TJ)</b>	<b>205,852</b>	<b>246,864</b>	<b>228,050</b>	<b>202,945</b>	<b>178,102</b>	<b>175,519</b>		<b>-1.5</b>
<b>Total Primary Energy Consumption (TJ)</b>	<b>1,135,715</b>	<b>1,388,096</b>	<b>1,497,045</b>	<b>1,484,691</b>	<b>1,349,353</b>	<b>1,301,483</b>		<b>-3.5</b>
<b>Fraction of Biomass in Total Fuels Consumption</b>	<b>44.1%</b>	<b>49.1%</b>	<b>50.1%</b>	<b>52.9%</b>	<b>57.0%</b>	<b>57.6%</b>		<b>0.6</b>
Total Electricity Produced at Site (GWh)	29,416	41,930	50,462	56,780	52,635	<b>51,763</b>	51.5	-1.7
Purchased Electricity (GWh)	59,045	72,255	72,815	67,567	60,505	<b>59,879</b>	59.6	-1.0
Sold Electricity (GWh)	-1,864	-3,681	-9,468	-11,193	-11,032	<b>-11,123</b>	11.1	0.8
<b>Total Electricity Consumption (GWh)</b>	<b>86,527</b>	<b>110,424</b>	<b>113,874</b>	<b>113,137</b>	<b>102,108</b>	<b>100,518</b>	<b>100.0</b>	<b>-1.6</b>
<b>% of Electricity produced through CHP<sup>2</sup></b>	<b>88.0%</b>	<b>90.4%</b>	<b>94.4%</b>	<b>95.4%</b>	<b>96.1%</b>	<b>96.1%</b>		<b>0.0</b>

## CEPI Fuels Consumption in 2014<sup>1</sup>



<sup>1</sup> Excluding Hungary, Romania & Slovenia - excluding Poland before 2003 - Figures for 2015 will be available in December 2016.

<sup>2</sup> Compared to total on-site electricity generation.

## CEPI Key Figures on Energy and Environment<sup>1</sup>

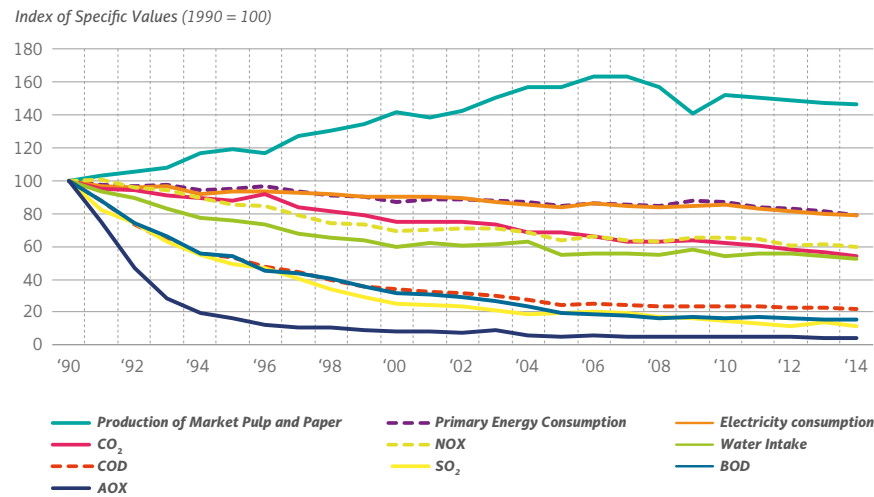
	1991	2000	2005	2010	2013	2014	% Change 2014/2013	% Change 2014/1991
<b>Energy Consumption</b>								
Production of Market Pulp and Paper & Board ('000 Tonnes)	71,971	98,691	109,644	106,084	102,810	<b>102,254</b>	-0.5	42.1
Specific Primary Energy Consumption (Tj/kt)	15.78	14.07	13.65	14.00	13.12	<b>12.73</b>	-3.0	-19.3
Specific Electricity Consumption (MWh/kt)	1.20	1.12	1.04	1.07	0.99	<b>0.98</b>	-1.0	-18.2
<b>Direct CO<sub>2</sub> Emissions <sup>2</sup></b>								
Absolute (Mega Tonnes)	39.05	41.94	43.37	37.98	33.88	<b>31.96</b>	-5.7	-18.2
Specific (kt CO <sub>2</sub> / kt of product)	0.54	0.42	0.39	0.35	0.32	<b>0.31</b>	-5.3	-43.5
<b>Indirect CO<sub>2</sub> Emissions</b>								
Absolute (Mega Tonnes)	13.88	14.33	12.47	11.59	12.58	<b>12.52</b>	-0.4	-9.8
Specific (kt CO <sub>2</sub> / kt of product)	0.19	0.15	0.11	0.11	0.12	<b>0.12</b>	0.1	-36.5
<b>Water Specific Emissions</b>								
BOD (kg / T of product)	4.65	1.69	1.03	0.88	0.84	<b>0.81</b>	-3.3	-82.5
COD (kg / T of product)	23.36	9.08	6.60	6.38	5.98	<b>5.78</b>	-3.3	-75.3
AOX (kg / T of product)	0.433	0.049	0.031	0.032	0.026	<b>0.024</b>	-6.7	-94.4
<b>Air Specific Emissions</b>								
SO <sub>2</sub> (kg SO <sub>2</sub> / T of product)	1.32	0.40	0.32	0.24	0.22	<b>0.18</b>	-15.6	-86.0
NOx (kg NOx / T of product)	1.31	0.90	0.83	0.85	0.80	<b>0.78</b>	-2.2	-40.2

<sup>1</sup> Excluding Hungary, Romania & Slovenia - Excluding Poland before 2003 - Figures for 2015 will be available in December 2016.

<sup>2</sup> Including all CEPI countries from 2005.

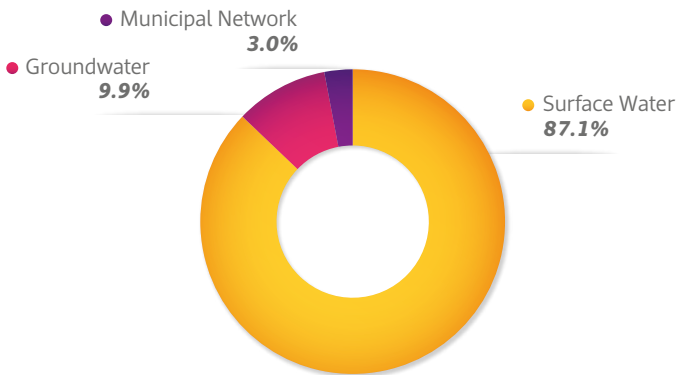
**Note:** Direct CO<sub>2</sub> Emissions are the fossil emissions produced by pulp and paper mills and connected energy plants.

Evolution of Environmental Impacts of the CEPI Pulp and Paper Industry<sup>1</sup>



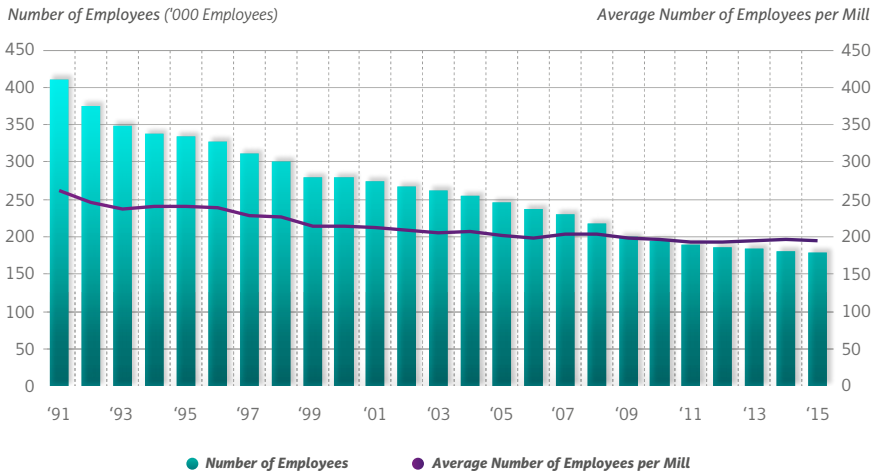
Water Emissions: COD (Chemical Oxygen Demand) - BOD (Biological Oxygen Demand) - AOX  
Air Emissions: CO<sub>2</sub> - NOX (Azote Oxydes) - SO<sub>2</sub>

CEPI sources of Water Intake in 2014<sup>1</sup>

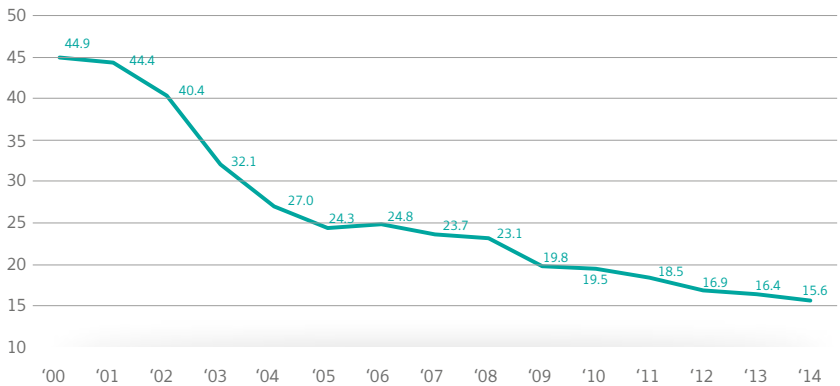


<sup>1</sup> Excluding Hungary, Romania & Slovenia - Excluding Poland before 2003 - Figures for 2015 will be available in December 2016.

## CEPI Employment Evolution



## CEPI Accident Rate<sup>1</sup>



<sup>1</sup> Accident rate: Number of accidents (fatal and non-fatal) x 1000/number of employees (absence of more than 3 days)  
 Figures for 2015 will be available in December 2016  
 Including Austria, Finland, France, Germany, Italy, Netherlands, Norway, Portugal, Spain, Sweden, United Kingdom

# Glossary

## PULP

**Pulp Consumption:** Production + Imports from outside CEPI - Exports to outside CEPI

### Pulp Grades:

**Mechanical - Stone groundwood:** pulp produced by grinding wood into relatively short fibres.

CEPI Harmonised Code is 923 000 000

**Thermo-mechanical:** pulp produced in a thermo-mechanical process where wood particles are softened by steam before entering a pressurised refiner. CEPI Harmonised Code is 923 400 000

**Semi-chemical:** pulp produced in a two-stage process which involves partial digestion with chemicals, followed by mechanical treatment in a disc refiner. CEPI Harmonised Code is 921 000 000

**Chemical - Sulphite:** pulp produced by cooking wood chips in a pressure vessel in the presence of bisulphite liquor. CEPI Harmonised Code is 922 200 000

**Chemical - Sulphate (or kraft):** pulp produced by cooking wood chips in pressure vessels in the presence of a sodium hydroxide (soda) liquor. CEPI Harmonised Code is 922 100 000

**Other Pulp:** Pulp produced from fibres other than wood, such as sugar cane bagasse, wheat straw, kenaf, cotton rags and hemp.

## PAPER

**Paper and Board Consumption:** Production + Imports from outside CEPI - Exports to outside CEPI

### Paper Grades:

**Newsprint:** paper mainly used for printing newspapers. CEPI Harmonised Code is 100 000 000.

**Uncoated mechanical:** paper suitable for printing or other graphic purposes where less than 90% of the fibre furnish consists of chemical pulp fibres. CEPI Harmonised Code is 211 000 000.

**Uncoated woodfree:** paper suitable for printing or other graphic purposes, where at least 90% of the fibre furnish consists of chemical pulp fibres. CEPI Harmonised Code is 231 000 000.

**Coated papers:** all paper suitable for printing or other graphic purposes and coated on one or both sides with minerals such as china clay (kaolin), calcium carbonate, etc.

CEPI Harmonised Code for Coated Mechanical is 212 000 000 and for Coated Woodfree is 232 000 000.

**Sanitary and Household:** This covers a wide range of tissue and other hygienic papers for use in households or commercial and industrial premises. CEPI Harmonised Code is 700 000 000.

**Case materials:** papers and boards mainly used in the manufacture of corrugated board. Included are kraftliner, testliner, semi-chemical fluting, and waste-based fluting (Wellenstoff). Also known as containerboard, corrugated case materials, cardboard, linerboard or corrugating medium. CEPI Harmonised Code is 300 000 000.

**Carton board:** made from virgin and/or recovered fibres, mainly used in cartons for consumer products. Also known as solid board, folding box board, boxboard or carrier board. CEPI Harmonised Code is 400 000 000.

**Wrappings (up to 125 g/m<sup>2</sup>):** papers whose main use is wrapping or packaging made from any combination of virgin or recovered fibres, bleached or unbleached. Included are sack kraft, other wrapping krafts, sulphite and grease-proof papers. CEPI Harmonised Code is 500 000 000.

**Other papers mainly for packaging purposes:** this category embraces all paper and board mainly for packaging purposes other than those listed above. CEPI Harmonised Code is 600 000 000.

**Other paper and board:** includes cigarette papers and filter papers, as well as gypsum liners and special papers for waxing, insulating, roofing, asphaltting, and other specific applications or treatments.

CEPI Harmonised Code is 800 000 000.

## PAPER FOR RECYCLING

**Collection:** utilisation plus exports minus imports of paper for recycling.

**Utilisation rate:** percentage of paper for recycling utilisation compared to the total paper & board production.

Important Note: Paper for recycling is composed of fibres but also unusable materials - non-paper components as well as paper and board detrimental to production. The share of unusable materials depends on the actual sorting and collection of used paper. It varies according to paper for recycling grades and countries. The volume of recycled fibres actually used to produce new paper is therefore lower than the volume of paper for recycling considered. The utilisation rate compares utilisation of paper for recycling to paper & board production.

**Recycling rate:** "utilisation of paper for recycling + net trade of paper for recycling", compared to paper & board consumption

**Utilisation by sector:** total utilisation of paper for recycling in a sector as percentage of the overall utilisation of paper for recycling.





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