

Key Statistics

European Pulp
and Paper Industry
2012

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Introduction

Welcome to the latest issue of CEPI's Key Statistics, covering data for 2012. This booklet contains the key statistics necessary to give a picture of the performance of the European Pulp and Paper Industry in 2012.

The statistics included in this booklet are a compilation of the data received from the National Associations, which are Members of CEPI, under the control of the CEPI Statistics Network. Some additional sources have been used when necessary and relevant, such as Eurostat. Extra statistical information is accessible on line for members on **www.cepi.org** under the Members Only section. Some extra statistical information is also available to non-Members by subscription.

CEPI was founded in 1992 and annual statistics cover the period 1991 – 2012. CEPI represents 95% of the European pulp and paper industry in terms of production.

The Confederation of European Paper Industries (CEPI) is a Brussels-based non-profit making organisation, which represents the European pulp and paper industry towards the European Institutions. Through its member associations, CEPI also represents approximately 520 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).

Members of CEPI in 2012

Austria, Belgium, Czech Republic, Finland, France, Germany, Hungary, Italy, Norway, Poland, Portugal, Romania, Slovak Republic, Slovenia, Spain, Sweden, The Netherlands, United Kingdom.

Notes

Switzerland: Please note that data for Switzerland is no longer included in this report and has been removed from the data for previous years.

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Key Figures

CEPI Pulp and Paper Industry

	1991	2000	2005	2011	2012	% Change 2012/2011	% Change 2012/2000
INDUSTRY STRUCTURE							
Number of Companies	1 032	929	831	659	640	-2.9	-31.1
Number of Mills	1 570	1 309	1 224	983	959	-2.4	-26.7
Pulp	296	233	218	171	170	-0.6	-27.0
Paper & Board	1 274	1 076	1 006	812	789	-2.8	-26.7
Number of Paper Machines	2 182	1 858	1 725	1 364	1 331	-2.4	-28.4
Employment	411 113	279 987	246 785	189 952	185 112	-2.5	-33.9
Turnover* (Million Euros)	n.a.	79 388	74 537	77 978	75 313	-3.4	-5.1
Investments* (Million Euros)	n.a.	5 637	5 318	3 152	3 000	-4.8	-46.8
Added Value* (Million Euros)	n.a.	24 413	17 920	16 000	15 000	-6.3	-38.6
WOOD ('000 m³)							
Consumption	120 274	149 021	150 796	148 463	142 878	-3.8	-4.1
Hardwood	30 410	40 827	41 642	40 695	38 784	-4.7	-5.0
Softwood	89 863	108 194	109 154	107 768	104 094	-3.4	-3.8
Imports/Consumption	12.8%	24.0%	25.5%	19.5%	18.9%	-0.6	-21.4
PULP ('000 Tonnes)							
Production Capacity	39 584	43 842	47 247	43 128	42 548	-1.3	-3.0
Operating Rate	85.4%	91.2%	88.1%	89.8%	90.2%	0.3	-1.0
Production of Market Pulp	9 314	11 423	13 142	13 016	13 575	4.3	18.8
Production of All Pulp	33 807	39 962	41 602	38 749	38 367	-1.0	-4.0
Exports to Outside CEPI	n.a.	1 332	2 071	3 177	3 922	23.5	194.5
Imports from Outside CEPI	n.a.	7 924	7 961	8 014	7 820	-2.4	-1.3
Consumption****	37 815	46 377	47 492	43 586	42 264	-3.0	-8.9
PAPER FOR RECYCLING ('000 Tonnes)							
Collection****	25 452	43 658	53 100	55 915	55 673	-0.4	27.5
Utilisation	25 360	40 922	46 745	47 316	46 808	-1.1	14.4
Exports to Outside CEPI	n.a.	3 751	7 698	10 576	10 919	3.2	191.1
Exports/Collection	n.a.	8.6%	14.5%	18.9%	19.6%	0.7	11.0
Imports from Outside CEPI	n.a.	1 015	1 343	1 978	2 053	3.8	102.3
Imports/Utilisation	n.a.	2.5%	2.9%	4.2%	4.4%	0.2	1.9
Utilisation Rate****	39.0%	45.1%	47.6%	50.6%	50.8%	0.3	5.8
RECYCLING RATE IN EUROPE***							
Recycling Rate****	40.3%	51.8%	62.0%	70.3%	71.7%	1.5	19.9
ENERGY**							
Total Fuels Consumption (Tj)	929 863	1 141 232	1 268 995	1 222 039	n.a.		
Biomass Use (%) of Total FC	47.9	49.3	50.1	55.0	n.a.		
Electricity Consumption (GWh)	86 527	110 424	113 874	108 058	n.a.		
PAPER & BOARD ('000 Tonnes)							
Production Capacity	73 280	97 658	109 801	103 458	101 814	-1.6	4.3
Operating Rate	88.8%	93.0%	89.5%	90.4%	90.4%	0.0	-2.6
Production	65 052	90 823	98 259	93 557	92 081	-1.6	1.4
Exports to Outside CEPI	n.a.	13 887	17 793	18 894	19 888	5.3	43.2
Imports from Outside CEPI	n.a.	6 383	5 903	5 729	5 171	-9.7	-19.0
Consumption****	60 102	82 065	86 369	80 393	77 364	-3.8	-5.7

* 2011 and 2012 figures have been estimated by CEPI

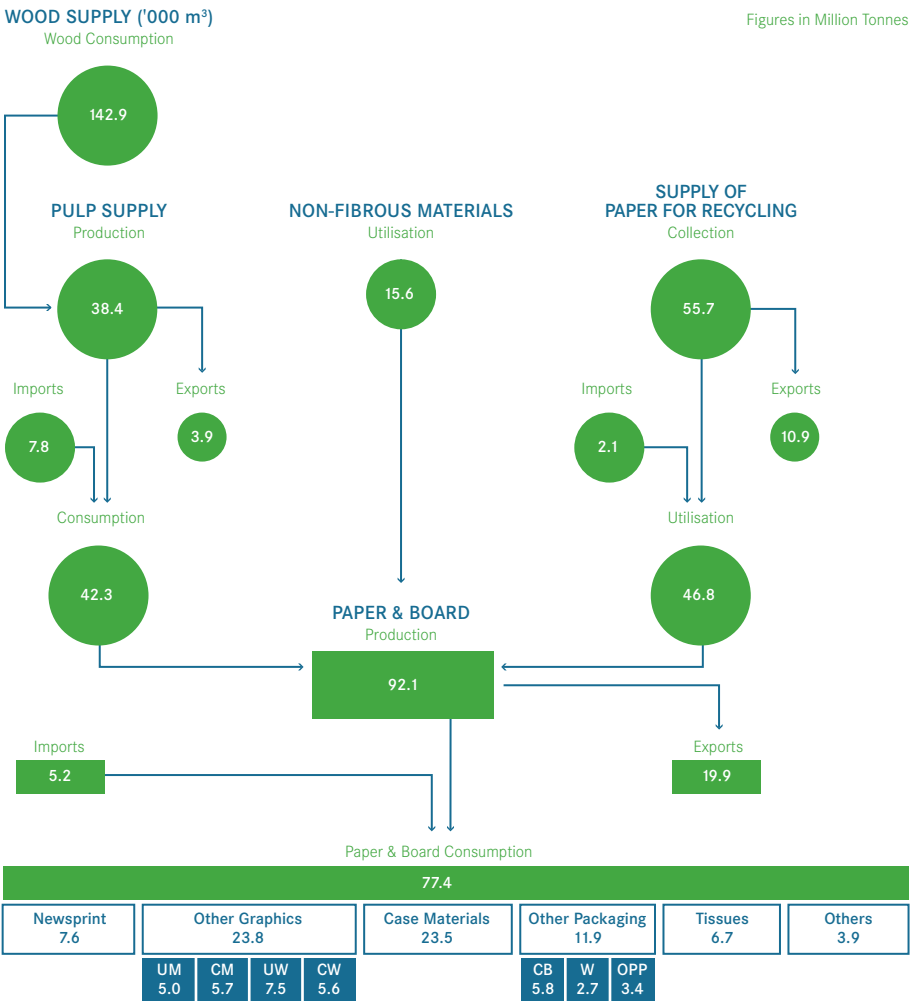
** Hungary, Romania and Slovenia are not included in Energy data

*** Europe means EU-27 countries plus Norway and Switzerland

**** See Definitions on Page 28

From Raw Materials to Paper

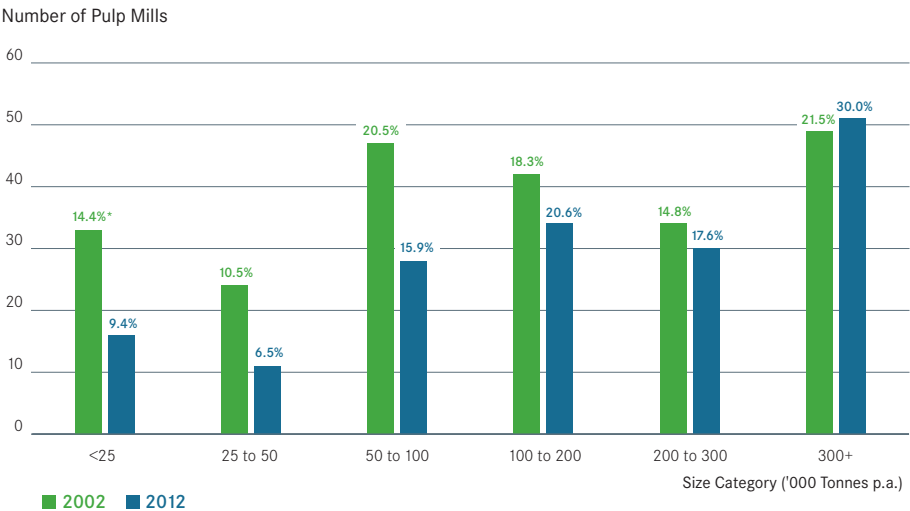
CEPI Pulp and Paper Industry in 2012



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

Pulp – Industry Structure

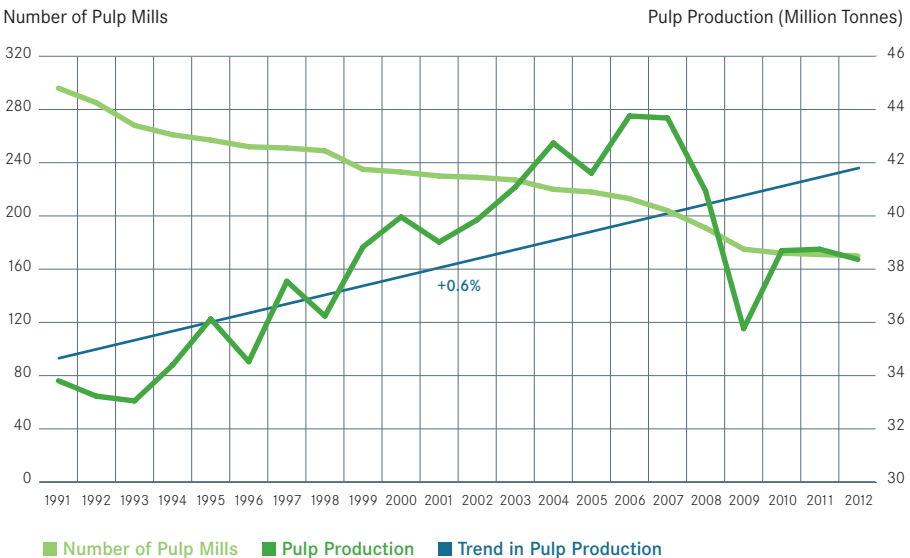
Number of CEPI Pulp Mills by Volume in 2002 and 2012



* Share of Total Number of Mills

Note: Figures for some countries have been estimated by CEPI

Number of CEPI Pulp Mills and Pulp Production 1991 – 2012

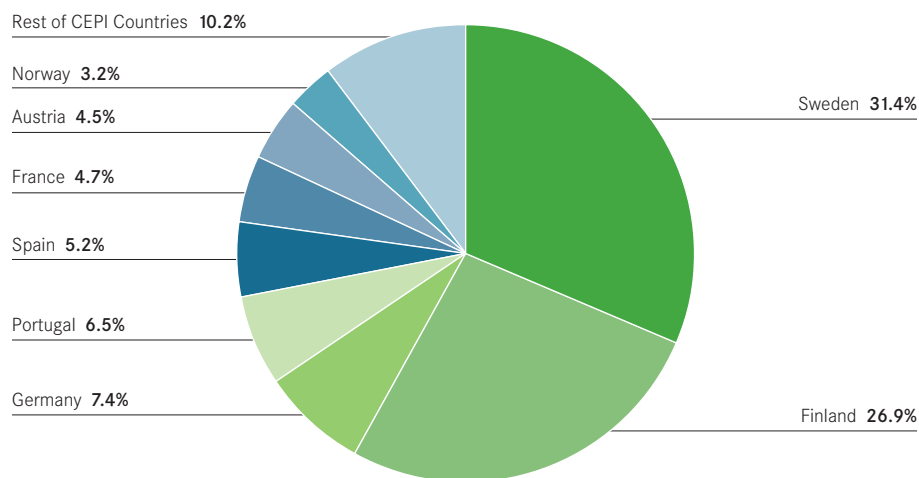


Pulp – Production and Consumption

CEPI Pulp Production and Consumption 2011 – 2012

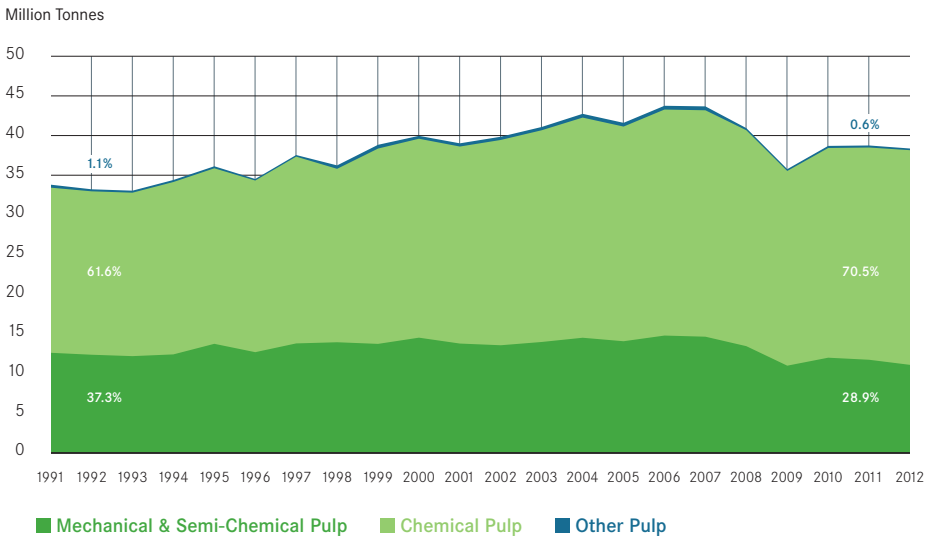
'000 Tonnes	PRODUCTION			CONSUMPTION		
	2011	2012	% Change 2012/2011	2011	2012	% Change 2012/2011
Mechanical & Semi-Chemical Pulp	11 732	11 090	-5.5	11 893	11 109	-6.6
Sulphite Pulp	2 147	2 068	-3.7	1 893	1 728	-8.7
Sulphate Pulp	24 612	24 997	1.6	29 402	29 050	-1.2
Chemical Pulp	26 759	27 065	1.1	31 295	30 779	-1.7
WOODPULP FOR PAPERMAKING	38 491	38 155	-0.9	43 188	41 887	-3.0
OTHER PULP	258	211	-18.2	398	377	-5.3
TOTAL PULP	38 749	38 367	-1.0	43 586	42 264	-3.0

CEPI Pulp Production by Country in 2012

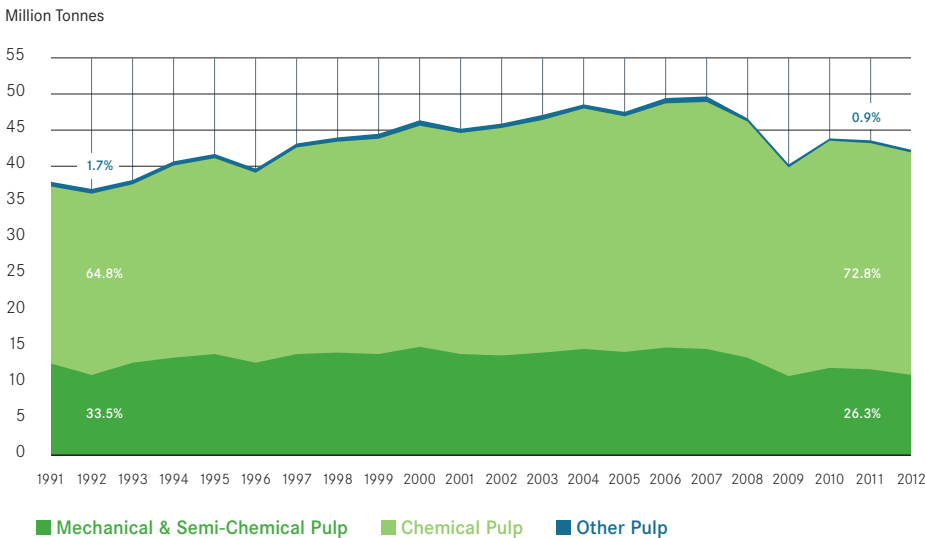


Pulp – Production and Consumption by Grade

CEPI Pulp Production by Grade 1991 – 2012

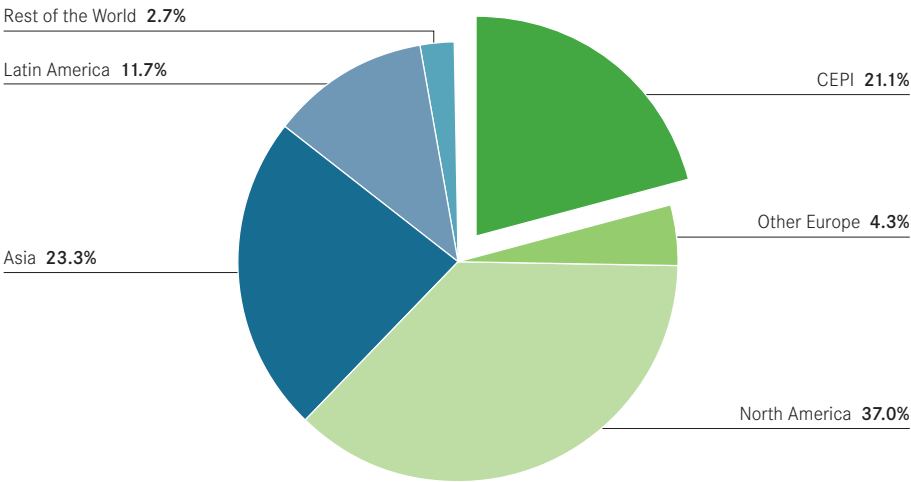


CEPI Pulp Consumption by Grade 1991 – 2012



Pulp – Production and Consumption – Global View

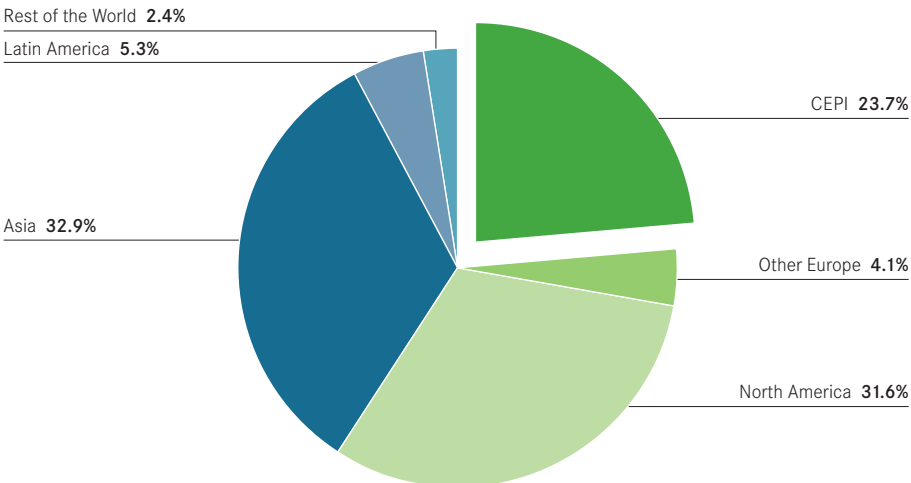
Pulp Production by Region in 2011*



TOTAL: 183.8 Million Tonnes
% change over previous year: 0.5

* Sources: CEPI, RISI – 2012 figures will be available in October 2013

Pulp Consumption by Region in 2011*



TOTAL: 183.8 Million Tonnes
% change over previous year: 0.9

* Sources: CEPI, RISI – 2012 figures will be available in October 2013

Pulp – Exports and Imports

CEPI Exports of Pulp to Other Regions

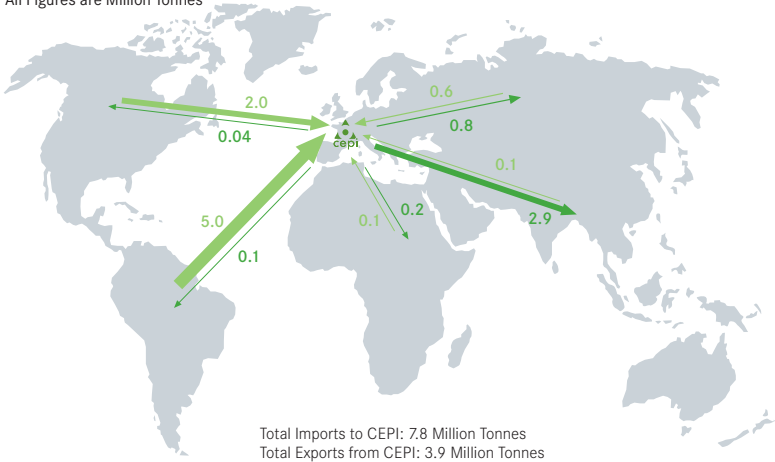
'000 Tonnes	2000	2005	2010	2011	2012	Share of Total %	% Change 2012/2011
Other Europe	724	674	719	728	769	19.6	5.6
North America	104	187	62	33	43	1.1	28.2
Latin America	6	20	49	56	64	1.6	14.3
Asia	412	1 076	1 595	2 224	2 873	73.2	29.2
Rest of the World	86	114	142	136	174	4.4	28.3
Total	1 332	2 071	2 567	3 177	3 922	100.0	23.5

CEPI Imports of Pulp from Other Regions

'000 Tonnes	2000	2005	2010	2011	2012	Share of Total %	% Change 2012/2011
Other Europe	657	615	480	573	649	8.3	13.2
North America	4 623	3 891	2 292	2 198	2 041	26.1	-7.1
Latin America	1 916	2 825	4 733	4 989	4 997	63.9	0.2
Asia	272	197	134	176	54	0.7	-69.6
Rest of the World	456	433	81	78	79	1.0	1.6
Total	7 924	7 961	7 721	8 014	7 820	100.0	-2.4

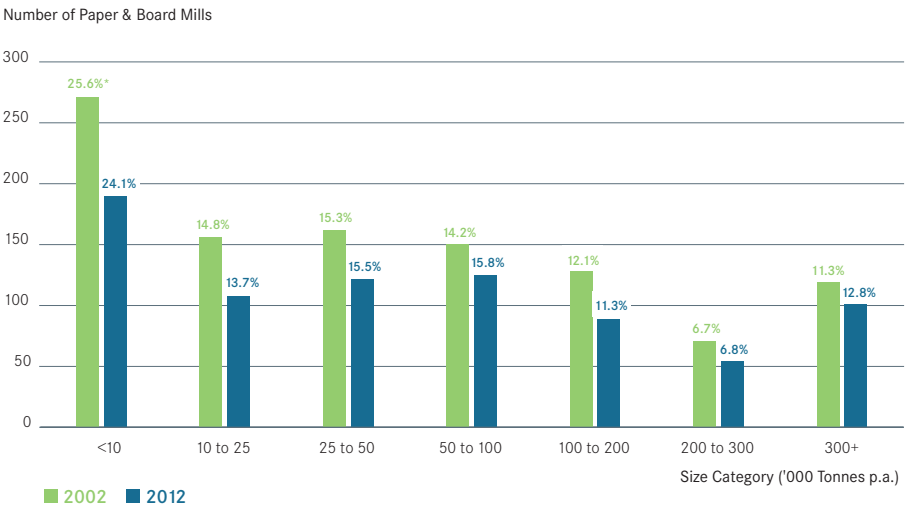
CEPI Trade Flows of Pulp in 2012

All Figures are Million Tonnes



Paper & Board – Industry Structure

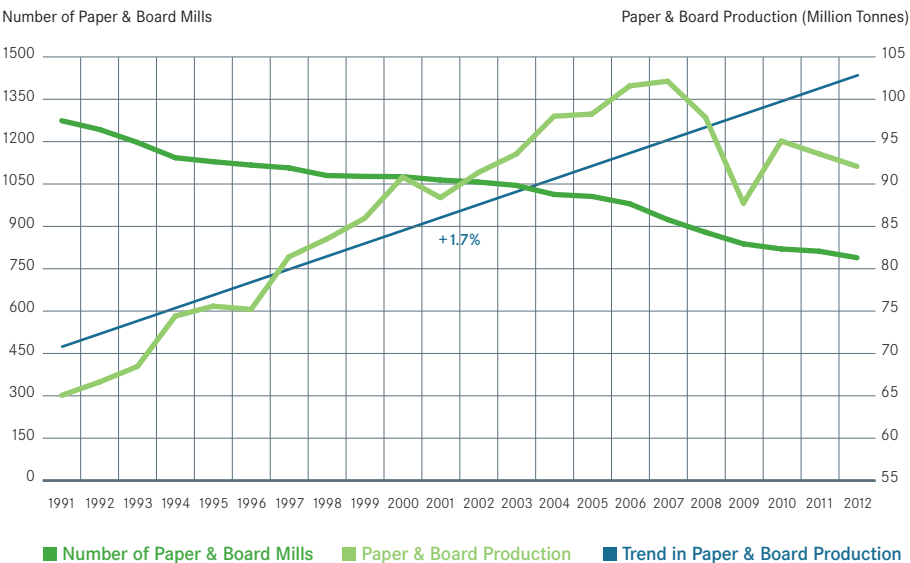
Number of CEPI Paper & Board Mills by Volume in 2002 and 2012



* Share of Total Number of Mills

Note: Figures for some countries have been estimated by CEPI

Number of CEPI Paper & Board Mills and Paper & Board Production in 1991 – 2012

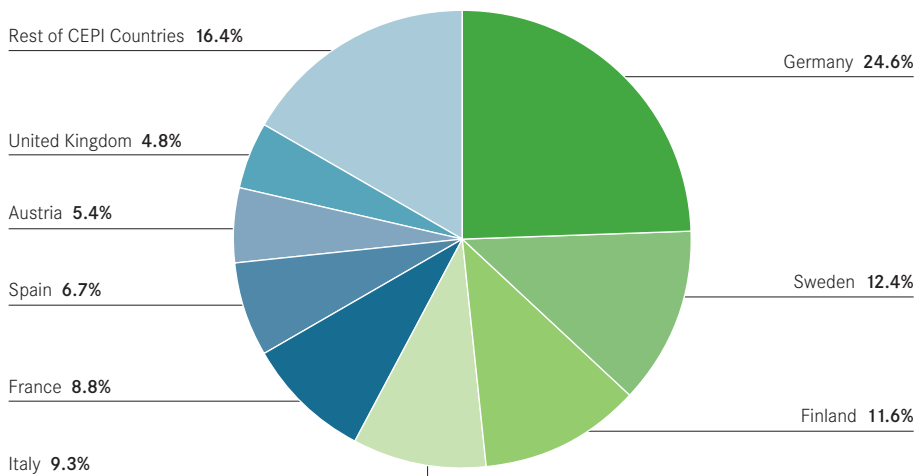


Paper & Board – Production and Consumption

CEPI Paper & Board Production and Consumption 2011 – 2012

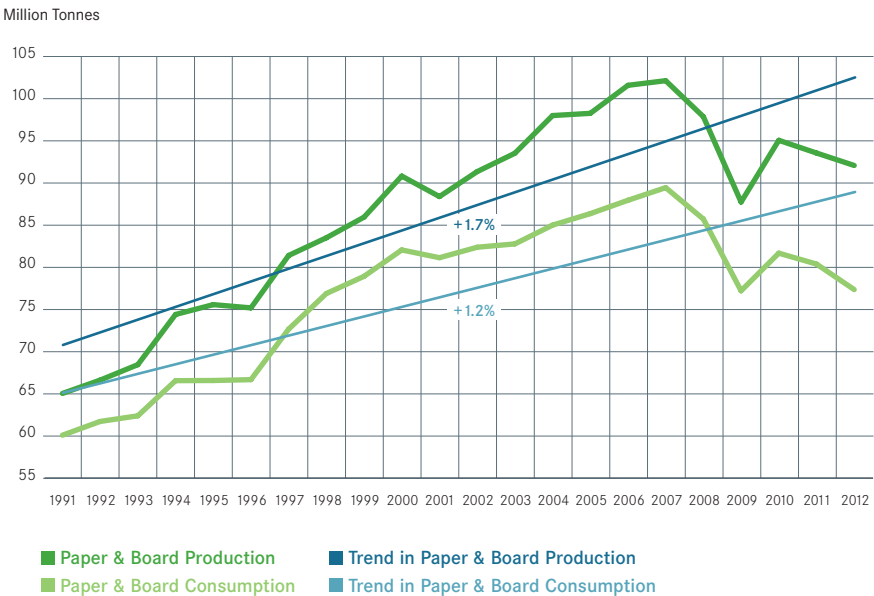
'000 Tonnes	PRODUCTION			CONSUMPTION		
	2011	2012	% Change 2012/2011	2011	2012	% Change 2012/2011
Newsprint	8 998	8 590	-4.5	8 269	7 588	-8.2
Uncoated Mechanical	6 634	6 177	-6.9	5 430	5 018	-7.6
Coated Mechanical	8 732	8 125	-7.0	6 479	5 710	-11.9
Uncoated Woodfree	9 401	9 185	-2.3	7 867	7 461	-5.2
Coated Woodfree	8 186	8 120	-0.8	5 816	5 563	-4.4
Other Graphic Papers	32 953	31 607	-4.1	25 592	23 752	-7.2
TOTAL GRAPHIC PAPERS	41 952	40 198	-4.2	33 861	31 340	-7.4
HOUSEHOLD & SANITARY	6 824	6 918	1.4	6 685	6 746	0.9
Case Materials	24 589	24 759	0.7	23 705	23 513	-0.8
Carton Board	8 334	8 458	1.5	5 942	5 786	-2.6
Wrappings	3 843	3 911	1.8	2 741	2 667	-2.7
Other Paper & Board for Packaging	3 783	3 658	-3.3	3 492	3 386	-3.1
TOTAL PACKAGING PAPERS	40 548	40 787	0.6	35 880	35 352	-1.5
OTHER PAPERS	4 233	4 178	-1.3	3 967	3 927	-1.0
TOTAL PAPER & BOARD	93 557	92 081	-1.6	80 393	77 364	-3.8

CEPI Paper & Board Production by Country in 2012

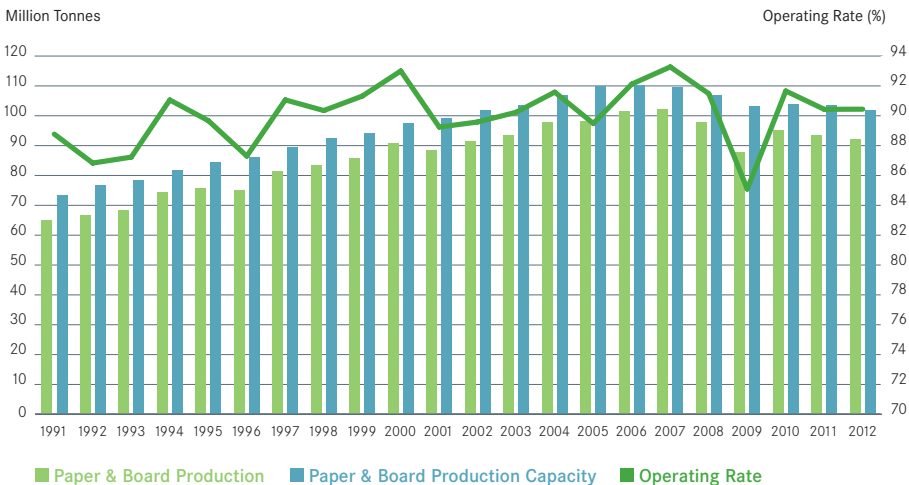


Paper & Board – Production and Production Capacity

CEPI Paper & Board Production and Consumption 1991 – 2012

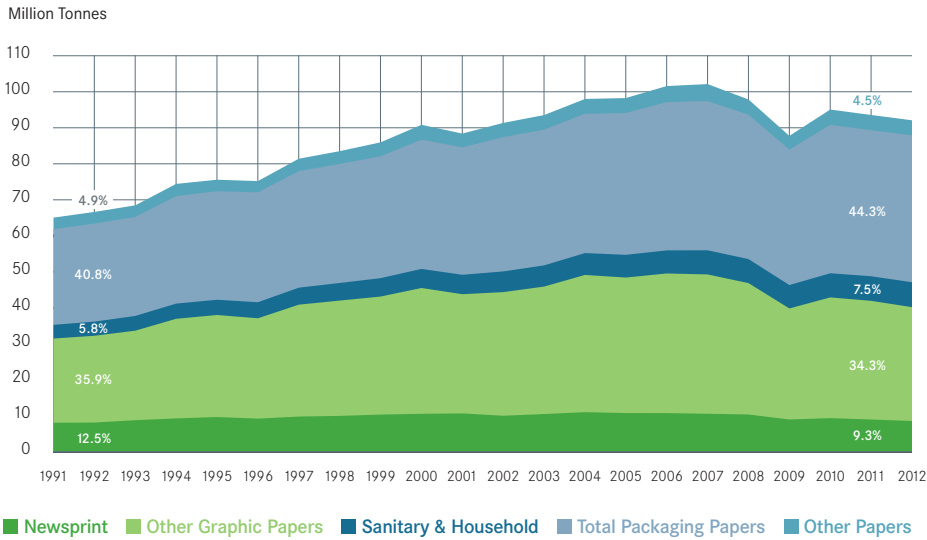


CEPI Paper & Board Production and Capacity 1991 – 2012

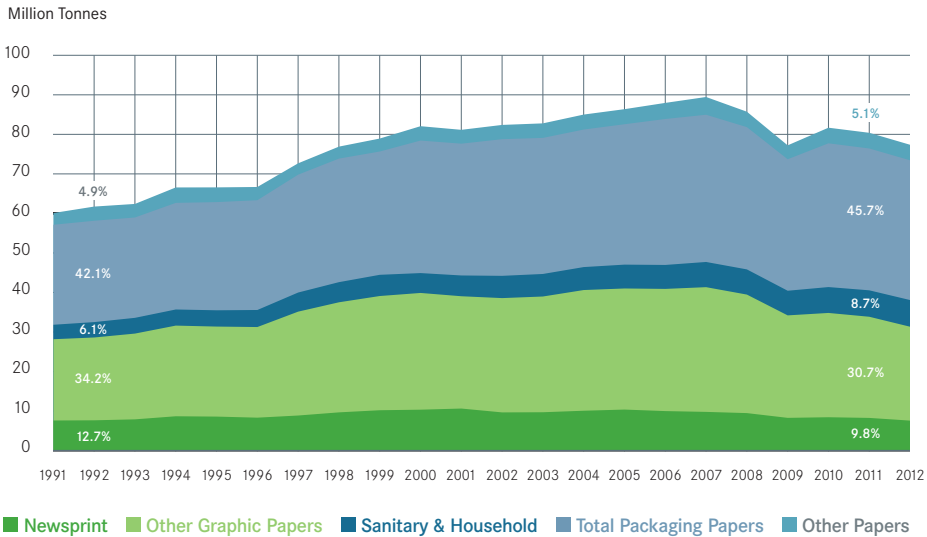


Paper & Board – Production and Consumption by Grade

CEPI Paper & Board Production by Grade 1991 – 2012

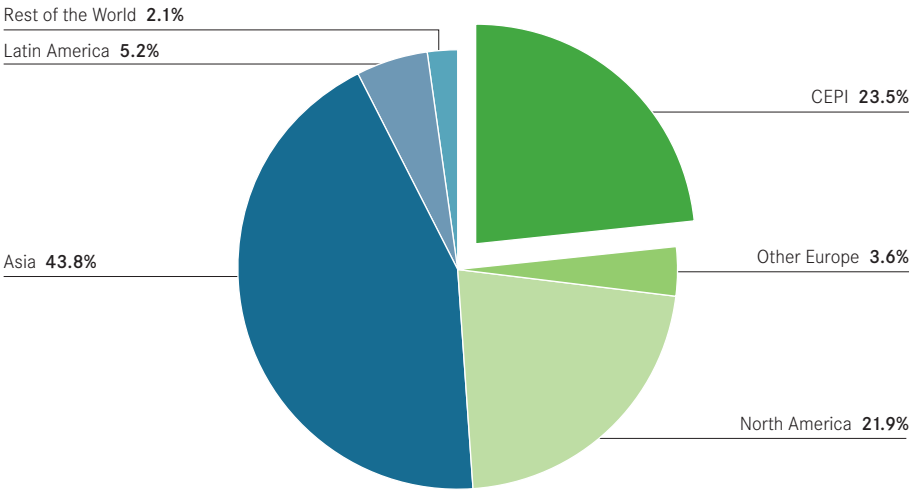


CEPI Paper & Board Consumption by Grade 1991 – 2012



Paper & Board – Production and Consumption Global View

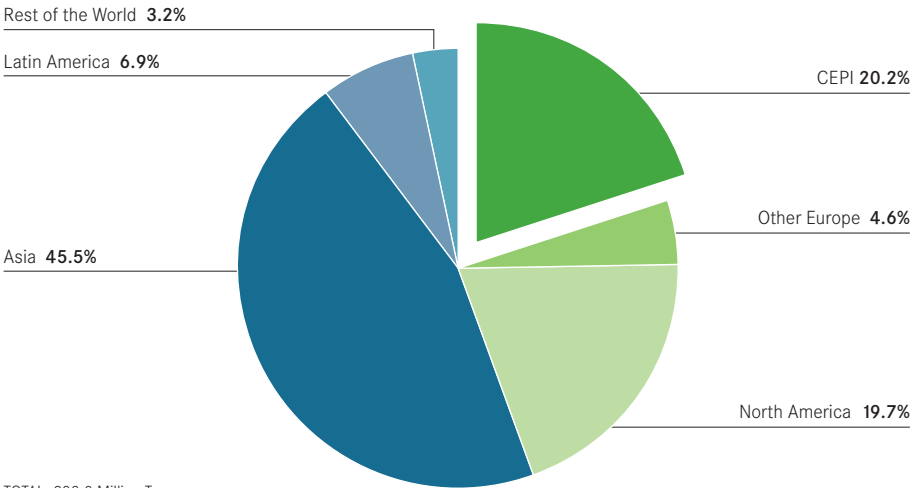
Paper & Board Production by Region in 2011*



TOTAL: 398.9 Million Tonnes
% change over previous year: 1.2

* Sources: CEPI, RISI – 2012 figures will be available in October 2013

Paper & Board Consumption by Region in 2011*



TOTAL: 399.0 Million Tonnes
% change over previous year: 1.2

* Sources: CEPI, RISI – 2012 figures will be available in October 2013

Paper & Board – Exports and Imports

CEPI Exports of Paper & Board to Other Regions

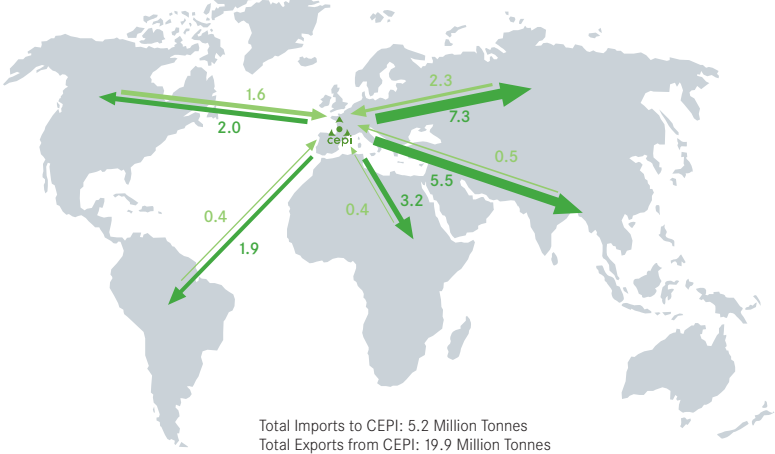
'000 Tonnes	2000	2005	2010	2011	2012	Share of Total %	% Change 2012/2011
Other Europe	6 090	6 825	7 349	7 027	7 288	36.6	3.7
North America	2 283	2 802	2 055	1 932	1 994	10.0	3.2
Latin America	874	1 194	1 879	1 782	1 909	9.6	7.2
Asia	2 933	4 742	5 099	5 431	5 483	27.6	0.9
Rest of the World	1 707	2 229	2 783	2 722	3 214	16.2	18.1
Total	13 887	17 793	19 164	18 894	19 888	100.0	5.3

CEPI Imports of Paper & Board from Other Regions

'000 Tonnes	2000	2005	2010	2011	2012	Share of Total %	% Change 2012/2011
Other Europe	3 318	2 727	2 525	2 429	2 313	44.7	-4.8
North America	2 191	1 915	1 829	1 752	1 598	30.9	-8.8
Latin America	198	498	498	477	421	8.1	-11.7
Asia	332	394	625	527	453	8.8	-14.0
Rest of the World	344	369	307	544	385	7.4	-29.3
Total	6 383	5 903	5 783	5 729	5 171	100.0	-9.7

CEPI Trade Flows of Paper & Board in 2012

All Figures are Million Tonnes

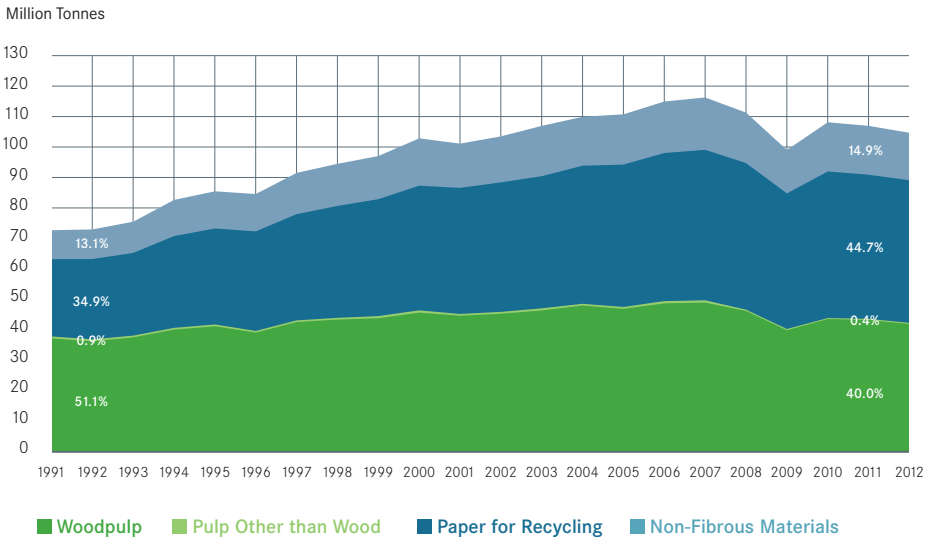


Raw Materials Summary

CEPI Raw Materials Consumption in Papermaking 1991 – 2012

'000 Tonnes	1991	2000	2005	2010	2011	2012	Share of Total %	% Change 2012/2011
Woodpulp	37 162	45 619	46 861	43 533	43 188	41 887	40.0	-3.0
Pulp Other than Wood	653	758	631	316	398	377	0.4	-5.3
Paper for Recycling	25 360	40 922	46 745	48 122	47 316	46 808	44.7	-1.1
Non-Fibrous Materials	9 504	15 545	16 496	16 163	16 042	15 598	14.9	-2.8
Total Raw Materials	72 679	102 844	110 733	108 134	106 945	104 670	100.0	-2.1

CEPI Raw Materials Consumption 1991 – 2012



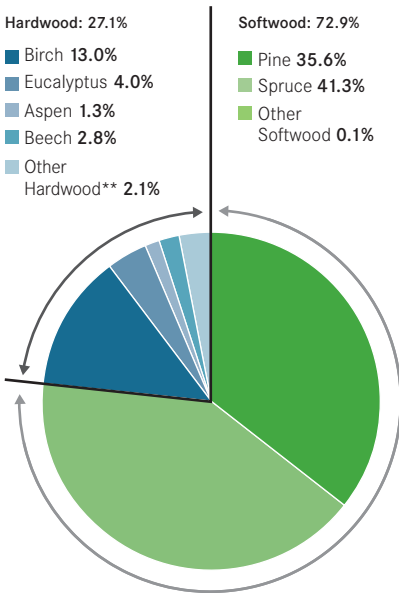
Wood – Consumption by Species

CEPI Wood Consumption 1991 – 2012

'000 m³	1991	2000	2005	2010	2011	2012	% Change 2012/2011	% Share of Total
Softwood Roundwood	65 240	72 399	72 651	74 625	74 458	71 818	-3.5	50.3
Softwood Chips	24 623	35 795	36 503	33 367	33 310	32 276	-3.1	22.6
Total Softwood	89 863	108 194	109 154	107 992	107 768	104 094	-3.4	72.9
Hardwood Roundwood	28 963	39 244	40 305	37 375	38 453	36 422	-5.3	25.5
Hardwood Chips	1 447	1 583	1 337	1 681	2 242	2 361	5.3	1.7
Total Hardwood	30 410	40 827	41 642	39 056	40 695	38 784	-4.7	27.1
Total Roundwood	94 204	111 643	112 956	112 000	112 911	108 241	-4.1	75.8
Total Chips	26 070	37 378	37 840	35 048	35 552	34 637	-2.6	24.2
Total Wood	120 274	149 021	150 796	147 048	148 463	142 878	-3.8	100.0

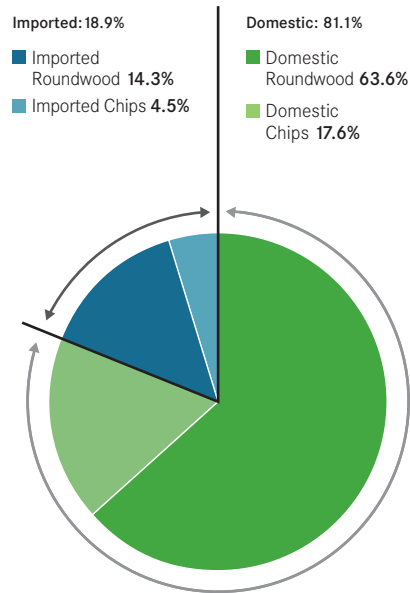
Share in CEPI Wood Consumption in 2012

By Species*



Total Wood Consumption: 142.9 Million m³

By Origin



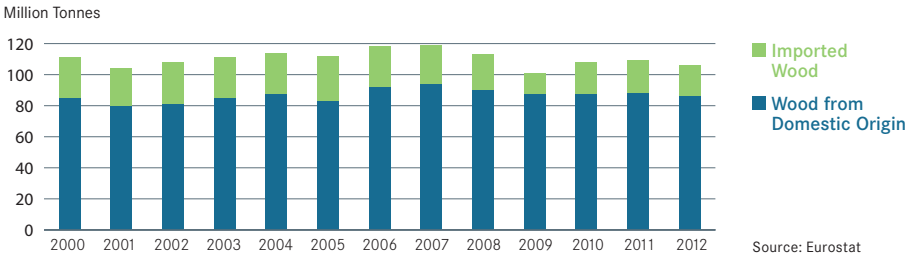
Total Wood Consumption: 142.9 Million m³

* Based on a sample representing 92% of total CEPI consumption

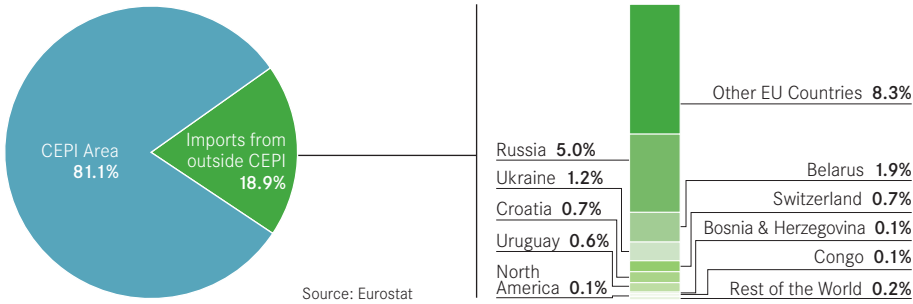
** Other Hardwood = hornbeam, ash, maple, accacia, quercus-cerris, oak, alder, poplar, willow, chestnut

Wood – Trade Flows and Wood Origin

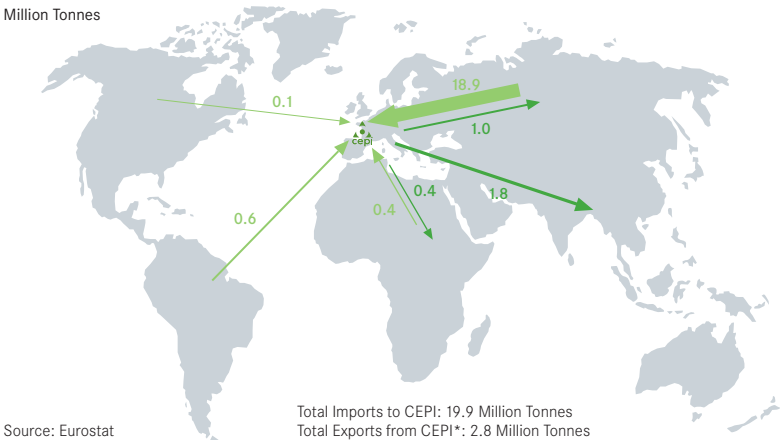
CEPI Wood Consumption by Origin 2000 – 2012



CEPI Wood Consumption Origin in 2012



CEPI Trade Flows of Wood in 2012



Paper for Recycling – Utilisation by Sector

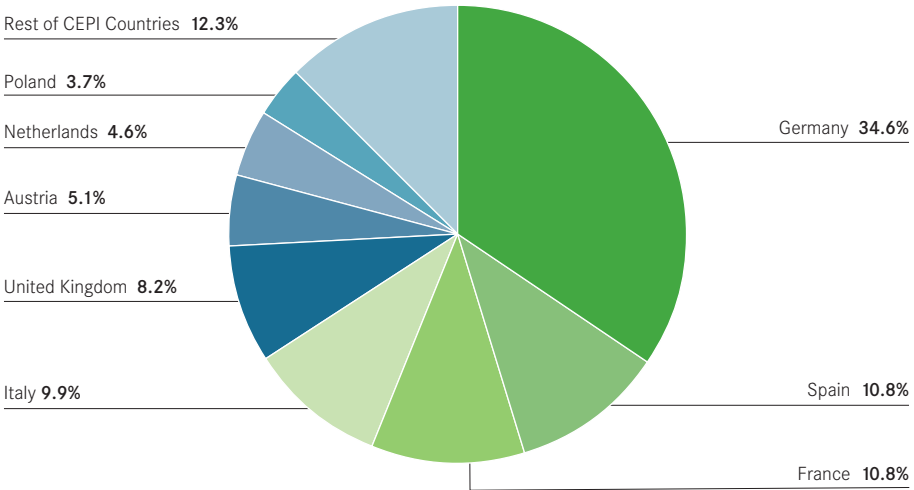
CEPI Utilisation of Paper for Recycling by Sector in 2012

Paper Sector '000 Tonnes	GRADES OF PAPER FOR RECYCLING							
	A Mixed Grades	B Corrugated and Kraft	C Newspapers & Magazines	D High Grades	E Total Utilisation of Paper for Recycling	F Utilisation by Sector* %	G Total Paper & Board Production	E:G Utilisation Rate** %
Newsprint	463	70	7 252	8	7 793	16.6	8 590	90.7
Other Graphic Papers	128	12	2 696	633	3 469	7.4	31 607	11.0
Total Newsprint + O.G.P.	591	81	9 948	642	11 262	24.1	40 198	28.0
Case Materials	4 527	17 643	383	781	23 335	49.9	24 759	94.2
Carton Board	1 888	501	358	812	3 559	7.6	8 458	42.1
Wrappings, Other Packaging Papers	1 689	1 702	99	454	3 944	8.4	7 569	52.1
Total Packaging Papers	8 105	19 845	840	2 048	30 838	65.9	40 787	75.6
Household & Sanitary	330	72	725	2 059	3 186	6.8	6 918	46.1
Other Papers	184	1 114	78	147	1 522	3.3	4 178	36.4
Total Paper & Board	9 210	21 112	11 591	4 895	46 808	100.0	92 081	50.8
Share of Total	19.7%	45.1%	24.8%	10.5%	100.0%			

* Utilisation by sector: total utilisation of paper for recycling in a sector as % of the total paper for recycling used by the industry.

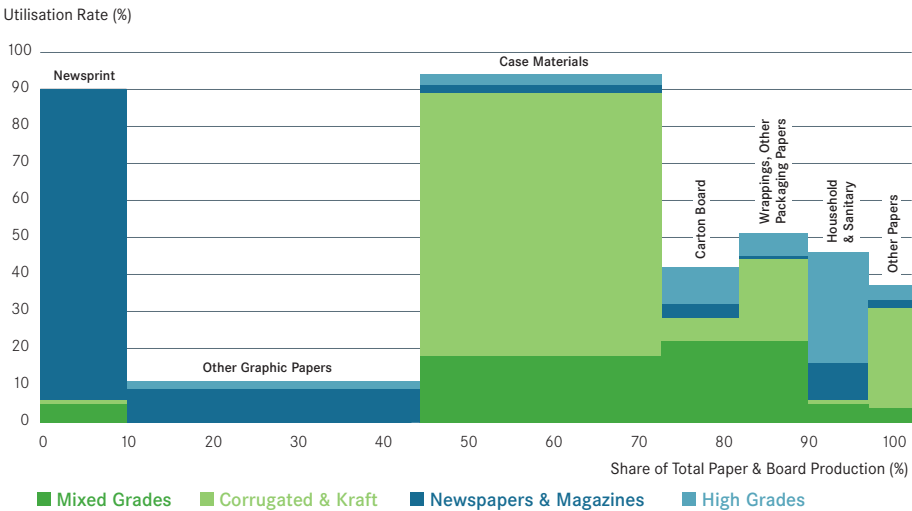
** Utilisation rate: utilisation of paper for recycling in a sector as % of total paper & board production in that sector.

CEPI Utilisation of Paper for Recycling by Country in 2012



Paper for Recycling – Utilisation of Paper for Recycling by Sector and by Grade

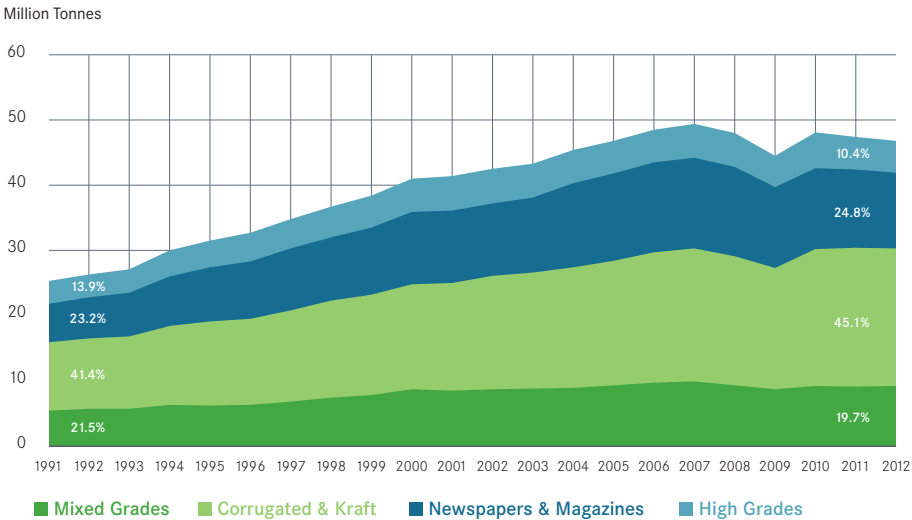
CEPI Utilisation of Paper for Recycling by Sector in 2012



For instance: case materials represent 27% of total paper and board production, have an utilisation rate of 94% and use 49.9% of total paper for recycling volumes used by the industry.

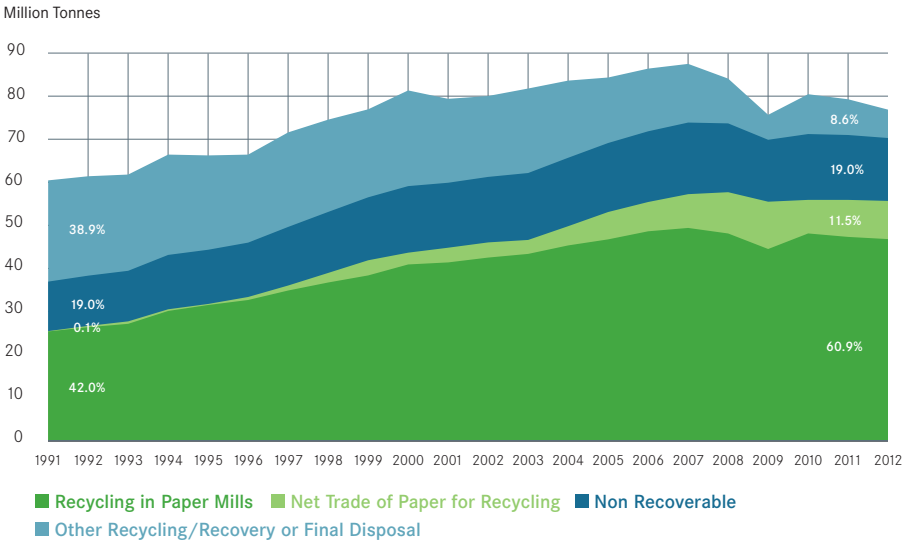
Important Note: Paper for recycling is composed of fibres but also unusable materials - non-paper components as well as paper and board detrimental to production. The share of unusable materials depends on the actual sorting and collection of used paper. It varies according to grades of paper for recycling 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 1991 – 2012

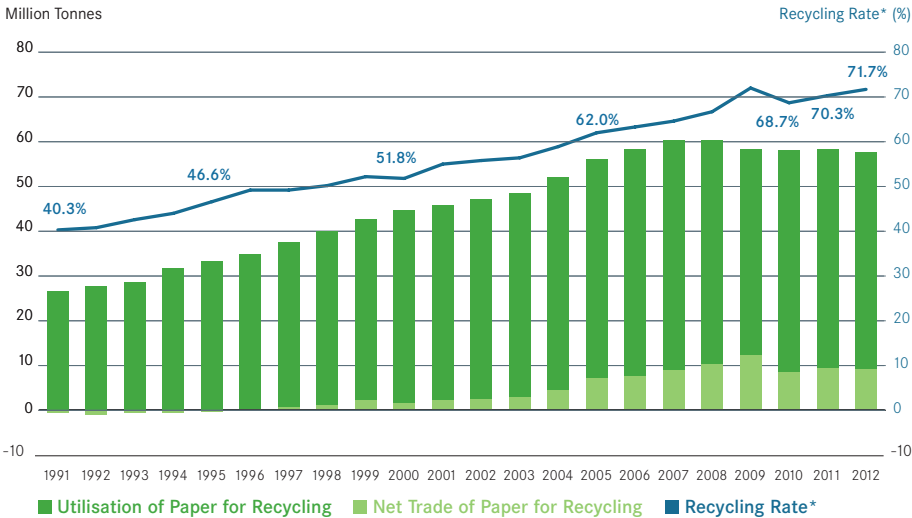


Paper for Recycling – Utilisation and Recycling Rate

CEPI Paper & Board Consumption and Recovery 1991 – 2012



Utilisation, Net Trade and Recycling Rate of Paper for Recycling in Europe** 1991 – 2012



*Recycling Rate = "Utilisation of Paper for Recycling + Net Trade of Paper for Recycling", compared to Paper & Board Consumption

**Europe means EU-27 countries plus Norway and Switzerland

Paper for Recycling – Exports and Imports

CEPI Exports of Paper for Recycling to Other Regions

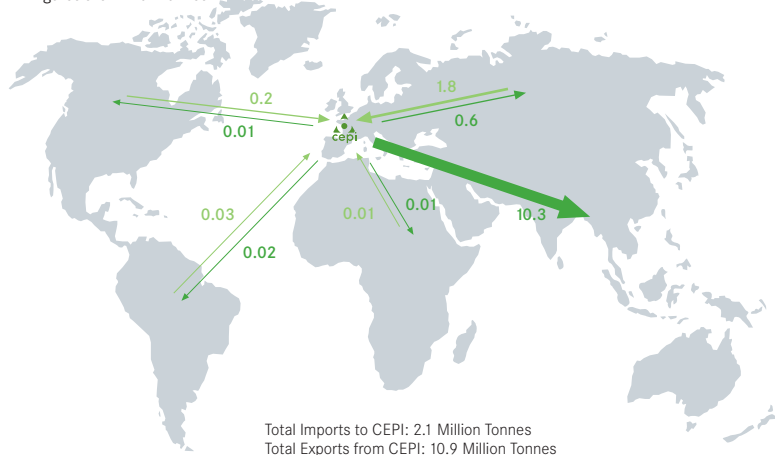
'000 Tonnes	2000	2005	2010	2011	2012	Share of Total %	% Change 2012/2011
Other Europe	676	444	373	488	618	5.7	26.6
North America	47	22	27	14	13	0.1	-6.5
Latin America	7	5	21	23	21	0.2	-10.1
Asia	2 894	7 087	9 157	10 037	10 252	93.9	2.1
Rest of the World	127	140	14	13	15	0.1	10.0
Total	3 751	7 698	9 592	10 576	10 919	100.0	3.2

CEPI Imports of Paper for Recycling from Other Regions

'000 Tonnes	2000	2005	2010	2011	2012	Share of Total %	% Change 2012/2011
Other Europe	735	1 131	1 596	1 711	1 823	88.8	6.5
North America	264	199	184	237	191	9.3	-19.3
Latin America	0	4	3	14	26	1.3	-
Asia	9	0	6	3	8	0.4	169.9
Rest of the World	7	9	8	13	5	0.2	-63.0
Total	1 015	1 343	1 796	1 978	2 053	100.0	3.8

CEPI Trade Flows of Paper for Recycling in 2012

All Figures are Million Tonnes

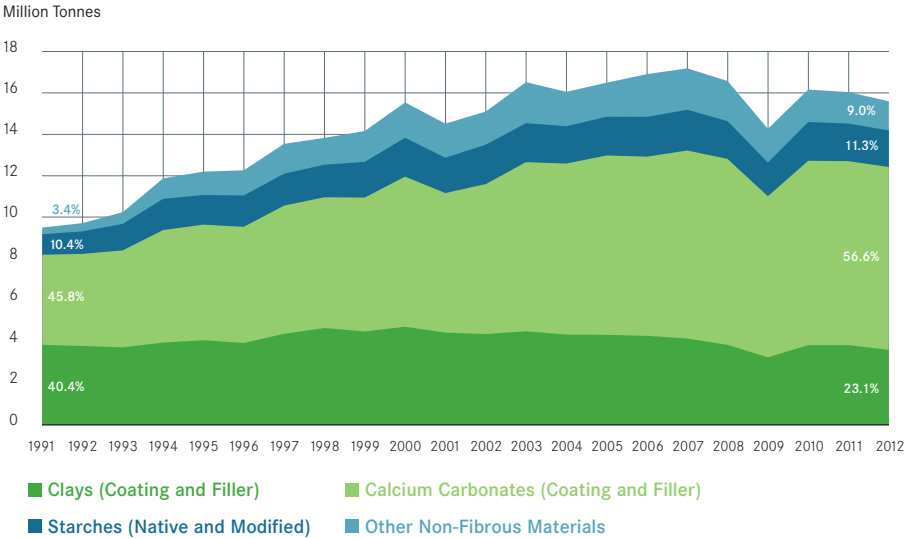


Non-Fibrous Materials

CEPI Non-Fibrous Materials Consumption 1991 – 2012

'000 Tonnes	1991	2000	2005	2010	2011	2012	Share of Total %	% Change 2012/2011
Clays (coating and filler)	3 842	4 716	4 323	3 825	3 828	3 601	23.1	-5.9
Calcium Carbonates (coating and filler)	4 349	7 247	8 662	8 903	8 881	8 825	56.6	-0.6
Starches (native and modified)	989	1 874	1 869	1 871	1 814	1 763	11.3	-2.8
Other Non-Fibrous Materials	324	1 708	1 642	1 564	1 519	1 409	9.0	-7.2
Non Fibrous Materials	9 504	15 545	16 496	16 163	16 042	15 598	100.0	-2.8

CEPI Non-Fibrous Materials Consumption 1991 – 2012



Energy – Energy and Electricity Consumption

CEPI Primary Energy and Electricity Consumption* 1991 – 2011**

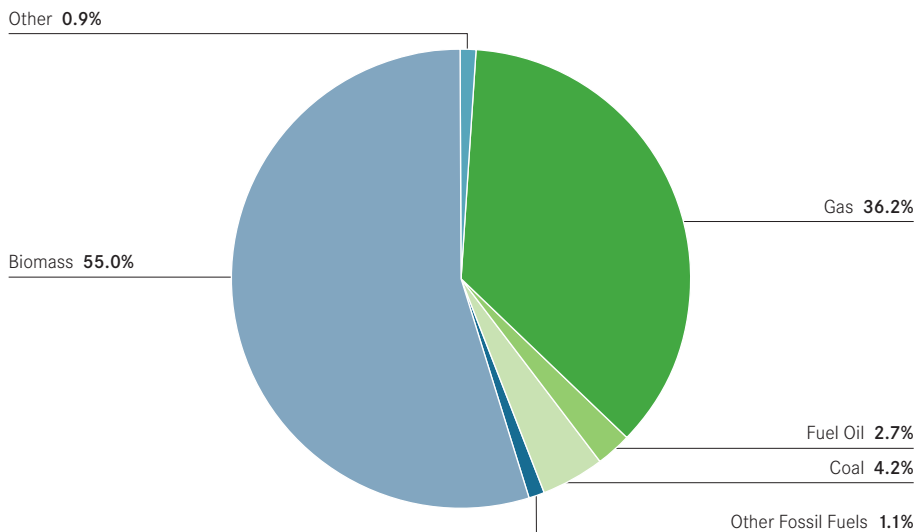
	1991	2000	2005	2010	2011	Share of Total %	% Change 2011/2010
Fuels Consumption (TJ)	929 863	1 141 232	1 268 995	1 281 746	1 222 039	100.0	-4.7
of which:							
Gas (TJ)	259 593	404 946	489 425	489 565	442 813	36.2	-9.5
Fuel Oil (TJ)	129 461	90 914	67 454	37 856	32 652	2.7	-13.7
Coal (TJ)	113 867	59 304	48 314	53 280	51 171	4.2	-4.0
Other Fossil Fuels (TJ)	10 134	19 052	19 714	14 529	13 106	1.1	-9.8
Biomass (TJ)	413 248	562 865	635 511	677 569	671 729	55.0	-0.9
Other (TJ)	3 560	4 151	8 602	8 948	10 569	0.9	18.1
Net Bought Electricity (TJ)	205 852	246 864	228 050	200 732	190 859		-4.9
Total Primary Energy Consumption (TJ)	1 135 715	1 388 096	1 497 045	1 482 479	1 412 898		-4.7
Fraction of Biomass in Total Fuels Consumption***	47.9%	49.3%	50.1%	52.9%	55.0%		2.1
Total Electricity Produced at Site (GWh)	29 416	41 930	50 462	56 780	55 059	51.0	-3.0
Purchased Electricity (GWh)	59 045	72 255	72 815	66 698	63 569	58.8	-4.7
Sold Electricity (GWh)	-1 864	-3 681	-9 468	-10 939	-10 553	9.8	-3.5
Total Electricity Consumption (GWh)	86 527	110 424	113 874	112 522	108 058	100.0	-4.0

* Excluding Hungary, Romania & Slovenia – excluding Poland before 2003.

** Figures for 2012 will be available in October 2013.

*** Including 15 CEPI member countries, contrary to past years where CEPI reports included only 11 CEPI member countries as part of the 'Declaration of Intent on Renewable Energy Sources'.

CEPI Fuels Consumption in 2011



Environment – Key Figures

CEPI Key Figures on Environment* 1991 – 2011**

	1991	2000	2005	2010	2011	% Change 2011/2010	% Change 2011/1991
Energy Consumption and CHP***							
Production of Market Pulp and Paper & Board ('000 Tonnes)	71 971	98 691	109 644	106 084	104 885	-1.1	45.7
Total Specific Primary Energy Consumption (Tj/kt)	15.78	14.07	13.65	13.97	13.47	-3.6	-14.6
of which:							
Specific Fuels Consumption	12.92	11.56	11.57	12.08	11.65	-3.6	-9.8
Specific Net Bought Electricity	2.86	2.50	2.08	1.89	1.82	-3.8	-36.4
Specific Electricity consumption (MWh/kt)	1.20	1.12	1.04	1.06	1.06	0.4	-11.8
% of Electricity Produced through CHP*** compared to total on-site electricity generation	88.0%	90.4%	94.4%	95.4%	95.2%		-0.2
Direct CO₂ Emissions****							
Absolute (Mega Tonnes)	39.05	41.94	42.85	37.45	35.98	-3.9	-7.8
Specific (kt CO ₂ / kt of product)	0.54	0.42	0.38	0.35	0.34	-2.8	-37.8
Indirect CO₂ Emissions							
Absolute (Mega Tonnes)	14.36	14.91	11.98	10.61	9.74	-0.1	-32.2
Specific (kt CO ₂ / kt of product)	0.20	0.15	0.11	0.10	0.09	-0.1	-53.5
Water Specific Emissions							
BOD (kg / t of product)	4.65	1.69	1.03	0.88	0.91	2.5	-80.5
COD (kg / t of product)	23.36	9.08	6.60	6.38	6.22	-2.4	-73.4
AOX (kg / t of product)	0.433	0.049	0.031	0.032	0.032	-0.6	-92.6
Air Specific Emissions							
SO ₂ (kg SO ₂ / t of product)	1.37	0.42	0.33	0.24	0.21	-13.5	-84.6
NOx (kg NOx / t of product)	1.31	0.90	0.83	0.85	0.85	0.1	-35.0

* Excluding Hungary, Romania & Slovenia – excluding Poland before 2003.

** Figures for 2012 will be available in October 2013.

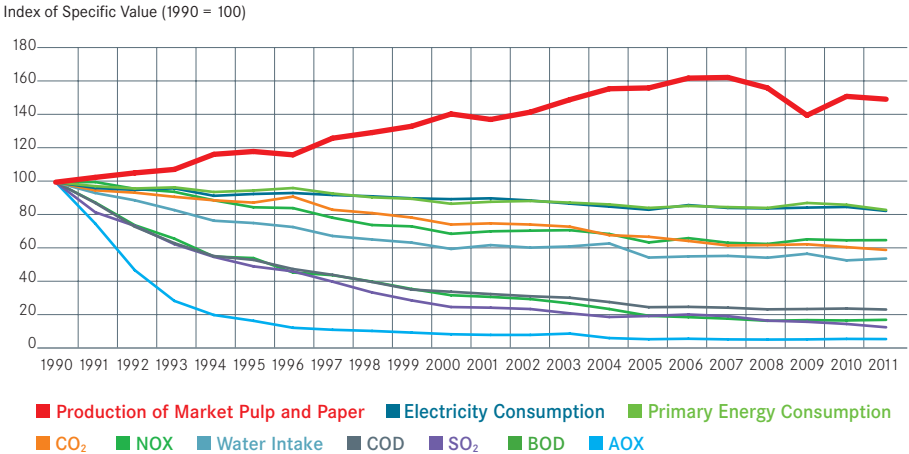
*** CHP = Combined Heat and Power

**** Including all CEPI countries from 2005.

Note: Direct CO₂ Emissions are the fossil emissions produced by the pulp and paper mills and connected energy plants.

Environment – Environmental Impact and Water

Evolution of Environmental Impacts of the CEPI Pulp and Paper Industry* 1990 – 2011 **



Water Emissions: COD (Chemical Oxygen Demand) – BOD (Biological Oxygen Demand) – AOX

Air Emissions: CO₂ – NOX (Azote Oxydes) – SO₂

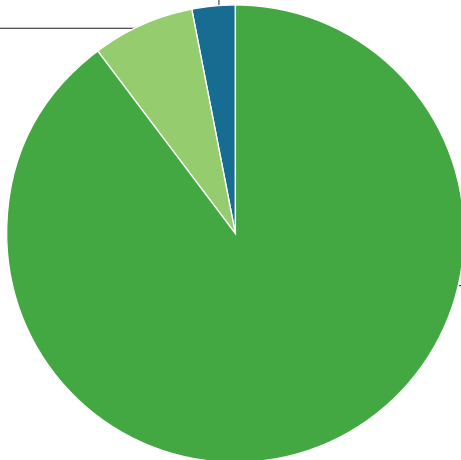
* Excluding Hungary, Romania & Slovenia – excluding Poland before 2003.

** Figures for 2012 will be available in October 2013.

Sources of Water in 2011 *

Municipal Network 3.0%

Ground 7.1%



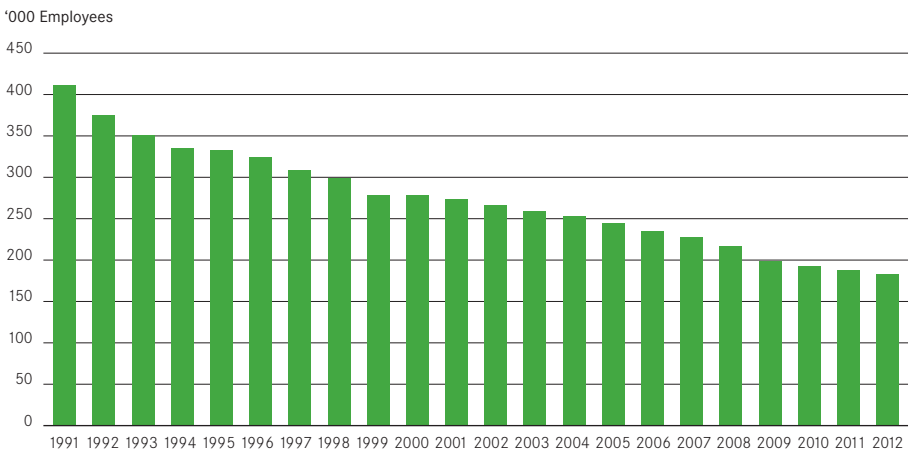
Surface 89.9%

* Excluding Hungary, Romania & Slovenia – excluding Poland before 2003.

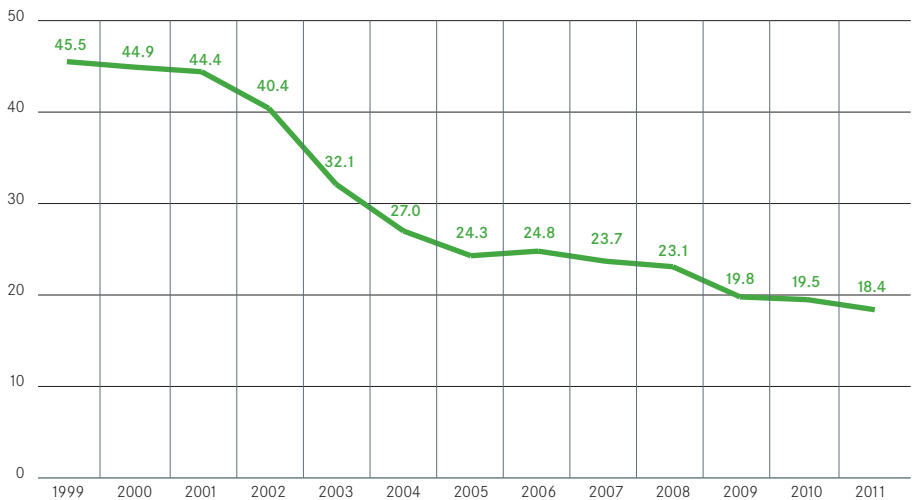
Figures for 2012 will be available in October 2013.

Social Affairs – Employment and Accidents

CEPI Total Employment 1991 – 2012



CEPI Accident Rate* 1999 – 2011 **



* Accident Rate: Number of accidents (fatal and non-fatal) x 1000/number of employees (absence of more than 3 days)

** Figures for 2012 will be available in October 2013

Includes 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/m²): 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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