

Chapter 8

Wood-based panels – supply, trade and consumption¹

Highlights

- Panel markets in the UNECE region out-performed all other forest products market sectors in 2000.
- A price collapse hit the structural panel markets in North America and Europe in 2000.
- In the EU/EFTA countries, total consumption of wood-based panels increased 6.7% to a record high of 45.2 million m³, confirming the recovery of the sector.
- In the Russian Federation, consumption of wood-based panels was up by 19.3% and reached 3.6 million m³, confirming the recovery of the sector.
- Although North American structural panel prices staged a rebound in the spring of 2001, the economic recovery of the sector is overshadowed by sluggish demand and further capacity additions.
- In 2000 and 2001, a strong dollar disadvantaged North American structural panel exporters vis-à-vis European and South American suppliers.
- High profits in oriented strand board (OSB) in the past and predictions of further gains in market share vis-à-vis plywood have induced North American and European interests to build more capacity, fostering conditions of oversupply.
- OSB market share in North American commodity sheathing (for roofs, floors, and walls in homes) passed the 75% level at the expense of softwood plywood.
- Future market growth of OSB in North America is increasingly predicated on gains in residential remodelling, do-it-yourself purchases and other non-housing applications.
- European OSB production rose about 20% from 1999 and four more plants are being built.
- Turnover in capacity is occurring in all branches as newer, high-capacity plants drive out older, smaller operations with higher unit costs.
- European particle board markets are recovering as new capacity is absorbed and several older plants are phased out.
- European production of MDF rose by 15% in 2000, but capacity growth will ease in 2001 following major expansions.

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Secretariat introduction

The secretariat would like to thank Mr. Henry Spelter for working together with us for two weeks in Geneva on this chapter, as well as helping us on other chapters too. Mr. Spelter is a specialist in forest products markets in the Timber Demand and Technology Assessment Research Work Unit at the Forest Products Laboratory of the USDA Forest Service. This is the second time that he has contributed to this chapter.

The secretariat would like to express our appreciation to the USDA Forest Service, and notably Mr. Val Mezainis, Director of International Programs, for facilitating Mr. Spelter's consultancy. Such collaboration has proved to be mutually beneficial in the past and continues to be so this year too.

While the basis for this chapter is UNECE/FAO statistics, considerable material in the chapter came from two trade associations, the Composite Panel Association (CPA) in the United States and the European Panel Federation (EPF). We rely on contributions from these important sources.

This chapter discusses recent trends in wood-based panels markets in the Commonwealth of Independent States (CIS), Europe (EU/EFTA and "other Europe") and North America (United States and Canada). The analysis focuses on particle board, medium density fibreboard (MDF) and structural panels, e.g. softwood plywood and oriented strand board (OSB).

8.1 Overview

The main factor influencing demand for panels in North America has been the slowdown in economic growth owing to interest rate increases in the United States in 2000. Overall economic growth has slowed, but sectors differ: housing and related manufacturing sectors have held up relatively well while general manufacturing has fallen into a recession. On the supply side, major capacity additions to OSB weighed on markets for structural panel while increases in particle board capacities caused an oversupply in non-structural panels. This combination of events upset the existing balance of market forces as supply increased faster than demand.

The strengthening of the dollar in comparison with the currencies of Europe and Japan affected panels as North American producers became less competitive in international markets and lost ground to competitors in Europe and South America. These shifting relationships have caused dislocations resulting in rationalizations as the North American industry is forced to align its capacity to the changing configuration of its markets. Overall consumption of wood-based panels in North America increased in 2000 to 61.7 million m³, an increase

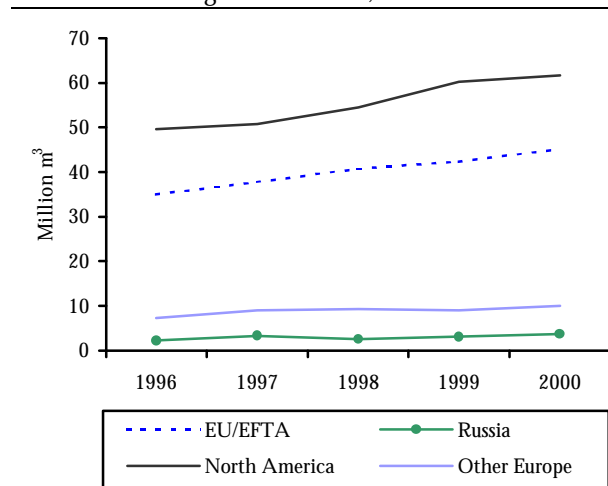
of 2.5%, compared to the 10.4% increase of 1999 (graph, 8.1.1, table 8.1.1).

In Europe economic activity of end use sectors was vigorous, even though it did not reach the levels expected. Consumption of panels increased by 2.4% to 55.3 million m³. In the EU/EFTA group of countries, which represents 82% of total consumption, the increase was 6.7%. Consumption growth was stronger in the "Other Europe" group of countries, 12.2% as a result of new capacity in central and eastern European countries.

In the Russian Federation consumption of panels was up by 19.3% and reached 3.6 million m³, the highest level since the early 1990s, confirming the recovery of the sector. Exports of panels also increased significantly in 2000 as a result of the weakened ruble, which improved competitiveness in world markets.

GRAPH 8.1.1

Apparent consumption of wood-based panels, excluding veneer sheets, 1996-2000



Source: UNECE/FAO TIMBER database, 2001.

8.2 Plywood

In 2000 consumption of plywood in EU/EFTA countries went up by 6% and amounted to 6 million m³. Production also went up, but not by as much as imports, which increased by 10% (table 8.2.1 and graph 8.2.1). In the "Other Europe" group of countries and in the Russian Federation, consumption also increased significantly by 35.5% to 0.85 million m³ and 26% to 0.52 million m³, respectively.

In North America, however, recorded plywood consumption was down from 1999 and amounted to 20.2 million m³ as a result of a drop in softwood plywood production. Real consumption may, however, be somewhat higher as the statistics received did not include Canada's hardwood plywood production.

TABLE 8.1.1

Apparent consumption of wood-based panels, excluding veneer sheets, in the UNECE region, 1996-2000
(Million m³)

	1996	1997	1998	1999	2000	% of total	
						1996	2000
EU/EFTA							
Particle board and OSB	24.09	25.53	26.68	27.90	29.28	68.8	64.8
Plywood	5.43	5.77	5.80	5.74	6.08	15.5	13.5
Fibreboard	5.48	6.47	8.26	8.73	9.85	15.7	21.8
Total	35.00	37.77	40.74	42.37	45.21	100.0	100.0
Change on previous year							
- Volume		2.77	2.97	1.63	2.84		
- %		7.9	7.9	4.0	6.7		
OTHER EUROPE							
Particle board and OSB	5.46	6.61	6.49	6.43	7.04	75.5	69.7
Plywood	0.46	0.63	0.69	0.62	0.84	6.4	8.3
Fibreboard	1.31	1.72	2.05	1.95	2.22	18.2	22.0
Total	7.23	8.96	9.24	9.01	10.10	100.0	100.0
Change on previous year							
- Volume		1.73	0.27	-0.23	1.10		
- %		24.0	3.1	-2.5	12.2		
RUSSIAN FEDERATION							
Particle board and OSB	1.43	2.30	1.71	2.06	2.45	64.7	67.7
Plywood	0.35	0.37	0.40	0.41	0.52	15.7	14.3
Fibreboard	0.43	0.64	0.50	0.56	0.65	19.6	18.0
Total	2.21	3.31	2.60	3.03	3.62	100.0	100.0
Change on previous year							
- Volume		1.10	-0.71	0.43	0.58		
- %		49.8	-21.4	16.4	19.3		
NORTH AMERICA							
Particle board and OSB	22.04	24.01	26.50	31.24	31.89	44.4	51.7
Plywood	20.52	19.69	19.87	20.53	20.20	41.3	32.7
Fibreboard	7.09	7.05	8.16	8.44	9.62	14.3	15.6
Total	49.65	50.75	54.53	60.21	61.71	100.0	100.0
Change on previous year							
- Volume		1.10	3.78	5.68	1.50		
- %		2.2	7.4	10.4	2.5		

Source : UNECE/FAO TIMBER database, 2001.

An improvement in the UNECE/FAO collection of statistics has made it possible to analyse developments in the plywood sector separately for softwood and hardwood plywood, and consequently for structural and non-structural uses (see below, sections 8.2.1 and 8.2.2).

8.2.1 Softwood plywood

In the evolutionary cycle of products, softwood plywood, used primarily in construction, can be thought of as being past its peak. Most of the world capacity is in North America where its roots date back nearly 100 years.

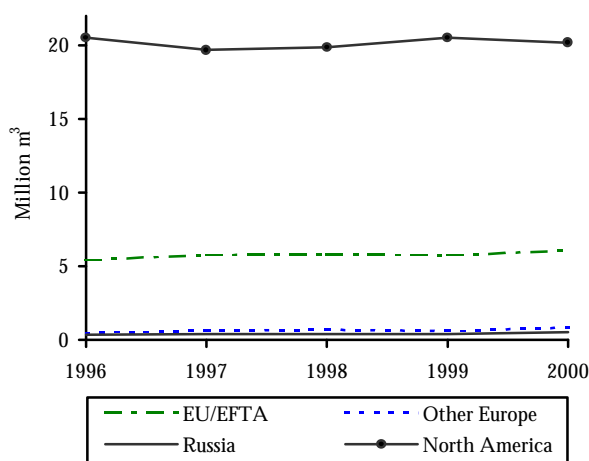
Within North America, the western branch of the industry, located primarily in the Pacific Northwest and based on Douglas fir, is in extended decline owing to reduced availability of large diameter timber and new product competition over the past three decades from OSB and plastics (i.e. styrofoam and isocyanurate foam boards that are non-structural and must be used in combination with structural panels or separate bracing at building corners to provide structural rigidity). Current capacity stands at about 5 million m³, about half of its peak in the 1970s (APA-The Engineered Wood Association). Much of this capacity is now focused on speciality products (e.g. sanded, siding, industrial grade

TABLE 8.2.1
Plywood balance in the UNECE region, 1996 -2000
(Million m³)

	1996	1997	1998	1999	2000	Timber Committee estimate for 2001*
EU/EFTA						
Production	2.94	2.96	3.19	3.25	3.27	3.35
Imports	4.17	4.66	5.11	5.03	5.53	5.51
Exports	1.68	1.86	2.50	2.54	2.71	2.80
Net trade	-2.49	-2.81	-2.61	-2.49	-2.82	-2.72
Apparent consumption	5.43	5.77	5.80	5.74	6.08	6.07
OTHER EUROPE						
Production	0.88	0.92	0.87	0.93	0.96	0.99
Imports	0.33	0.36	0.37	0.42	0.46	0.46
Exports	0.74	0.65	0.55	0.73	0.58	0.59
Net trade	0.41	0.29	0.18	0.31	0.12	0.13
Apparent consumption	0.46	0.63	0.69	0.62	0.84	0.85
RUSSIAN FEDERATION						
Production	0.67	0.88	1.10	1.32	1.48	1.55
Imports	0.06	0.04	0.03	0.00	0.01	0.01
Exports	0.38	0.56	0.74	0.91	0.97	1.02
Net trade	0.32	0.52	0.71	0.91	0.96	1.01
Apparent consumption	0.35	0.37	0.40	0.41	0.52	0.54
NORTH AMERICA						
Production	20.37	19.38	19.22	19.48	19.21	19.20
Imports	1.64	1.85	2.24	2.72	2.67	2.72
Exports	1.49	1.54	1.59	1.67	1.68	1.70
Net trade	-0.15	-0.31	-0.65	-1.05	-0.98	-1.02
Apparent consumption	20.52	19.69	19.87	20.53	20.20	20.22

* = The Timber Committee's forecast trend for 2000 to 2001, made at the October 2000 session, was applied to the 2000 figure.

GRAPH 8.2.1
Apparent consumption of plywood, 1996 -2000



Source: UNECE/FAO TIMBER database, 2001.

panels and concrete forming) instead of the traditional commodity sheathing that was the sector's mainstay in previous decades.

The southern branch of the industry, based on pine, has also begun to shrink for much the same reasons. In 2000 and 2001, a spate of rationalizations resulted in the closing or conversion (to hardwood plywood) of seven plants leaving a residual capacity of 10.5 million m³, about 85% of its former high point. Canadian softwood plywood capacity has followed similar trends. Its present 2 million m³ level is about 80% of its former high.

Production of softwood plywood declined by 1.6% to 17.4 million m³ in North America in 2000 (table 8.2.2). This was in response to slightly weaker housing construction and more pronounced weakness in manufacturing. Plywood capacity utilization was at 95%. In 2001, with continued economic sluggishness through the first half, a further decline is likely. Production is on course to be 1 million m³ lower in 2001, reflecting also

the capacity attrition described above. Production of softwood plywood will have declined by over 4 million m³ (up 1%) since 1990.

Production by EU/EFTA countries in Europe was estimated at 2.3 million m³ while in eastern Europe the estimated output was close to 0.4 million m³ but up 12%. In the Russian Federation, 124,000 m³ were produced,

TABLE 8.2.2
Production and trade of softwood plywood in the UNECE region, 1997 -2000
(1,000 m³)

	1997		1998		1999		2000		Change 1999 to 2000	
									Volume	%
PRODUCTION										
EU/EFTA	1,859		2,134		2,233		2,253		21	0.9
of which:										
Finland	330	P	454		578		578		0	0.0
Germany	448	E	428	E	364	E	355		-9	-2.5
Other Europe	376		361		383		429		47	12.2
of which:										
Czech Republic	41	P	38		35		56		21	60.0
Bulgaria	23	E	23	E	44	E	52		8	18.2
Russian Federation	120	P	102		86		124		38	44.2
North America	17,725		17,481		17,695		17,409		-287	-1.6
Canada	1,828	E	1,749	E	1,928		1,944		15	0.8
United States	15,897	E	15,732		15,767		15,465		-302	-1.9
EXPORTS										
EU/EFTA	1,052		1,330		1,273		1,461		188	14.7
of which:										
Finland	257	P	383		510		546		36	7.1
Germany	152	E	166	E	160	E	235	E	75	46.9
Other Europe	138		150		344		185		-160	-46.3
of which:										
Czech Republic	42	P	43		44		64		20	45.5
Romania	21	P	22		23		36		13	57.4
North America	1,154		1,173		1,207		1,149		-58	-4.8
Canada	294	P	466		642		582		-60	-9.3
United States	860	P	707		565		567		2	0.4
IMPORTS										
EU/EFTA	3,012		3,198		2,689		2,975		286	10.6
of which:										
Germany	1,095	E	1,105	E	1,021	E	1,105	E	84	8.2
United Kingdom	396	P	400		403		451		48	11.9
Other Europe	142		117		104		122		18	17.5
of which:										
Slovakia	20	P	18		17		20		3	17.6
North America	84		294		672		615		-57	-8.5
Canada	84	P	108		142		128		-14	-9.9
United States	0	P	186		530		487		-43	-8.1

Source : UNECE/FAO TIMBER database, 2001.

which represents an increase of 44% from 1999 and returns production to the 1997 level.

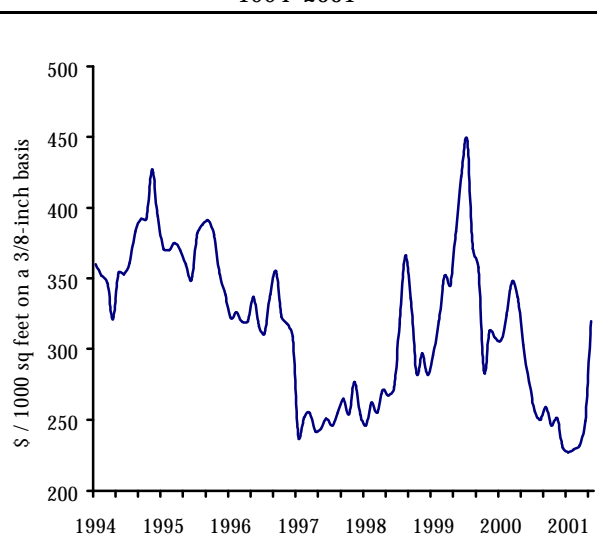
Customary product trade flows have changed in recent years. North America traditionally supplied large amounts of plywood to Europe and Japan but since 1997 the volume of this trade has shrunk considerably. The United States softwood plywood exports fell by 59% between 1997 and 2000, while Canadian exports to countries other than the United States were down 55%. Total Canadian exports slowed by a more moderate 13% thanks to a six-fold sales increase to the United States.

Several factors have caused this reshuffling. Chief among them was the appreciation of the dollar. The value of the euro against the dollar has fallen by 30% since its arrival in 1999. This has severely hurt United States and Canadian exporters (since the Canadian dollar has largely kept pace with its United States counterpart). Competitive plywood made in Finland, Germany, France, Sweden and the Czech Republic benefited (EUWID). At the same time, the rapid expansion of the plywood industry in Brazil, based on plantation elliotis pine (*Pinus elliotii*) (overall exports reached 1.4 million m³ in 2000), allowed producers there to take a large share of the European plywood trade. Plywood based on elliotis pine is now well established in Europe as an alternative to United States southern pine plywood. Weak Japanese demand and growing European production of OSB have further hurt North American plywood exporters' chances.

North American structural panel prices fell hard in the second half of 2000 and early 2001 (graph 8.2.2).

GRAPH 8.2.2

North American structural panel composite prices,
1994-2001



Source: Random Lengths Yardstick, 2001.

This reflected lower demand caused by a slight weakening of United States home construction and a sharper fall in United States manufacturing. Increasing production of OSB from new capacity coming on stream did not help to correct the supply demand imbalance. These trends caused many mills to close or at least to temporarily curtail production. As supply was being reduced in this manner, demand made a seasonal recovery with the ending of the colder than normal North American winter. Consequently, prices rebounded in the spring of 2001. However, the likelihood of a sustained price rise in 2001 is modest because of more OSB capacity. Indeed, further closure of plywood capacity is likely in the next five years as considerable investment in OSB is scheduled, both in Europe and North America.

8.2.2 Hardwood plywood

Production of hardwood plywood in the United States was up 1.2% from 1999 to 1.8 million m³. Some 10% of this amount is exported, mainly to Canada (table 8.2.3). United States imports showed little change from 1999 to 1.9 million m³. Imports originated mainly in Indonesia, Canada, Malaysia, the Russian Federation and Brazil. In Europe production dropped 1.2% from 1999 to 1.5 million m³. Exports of Finnish and Latvian birch plywood as well as from the Russian Federation to the United Kingdom and Germany showed some increases. Production of hardwood plywood in the Russian Federation has increased significantly since 1995, and in 2000 it represented 91.6% of total plywood production.

Tropical plywood exports from ITTO member countries in 2000 remained at 1999 levels, just under 12 million m³, 1.3 million m³ less than the peak amount exported in 1997. Indonesia was still the major exporter with 7.8 million m³, followed by Malaysia, 3.2 million m³ and Brazil, 574,000 m³. In 2000, European imports of tropical plywood were just under 1.7 million m³. The main European importers are the United Kingdom, Germany and the Netherlands. Most of Europe's imports came from Indonesia, Malaysia, and Brazil. Indonesian and Malaysian plywood prices have, in general, declined steadily since 1996, and real price levels were still 35 to 50% below the highs of 1996. Tropical plywood imports are facing increased competition from softwood plywood and other panel products (ITTO).

The Indonesian plywood industry is running at about 50% of its production capacity and is facing increased production costs and higher domestic taxes. Its main export markets in Asia are depressed and its products are facing increased competition in world markets. This outlook is expected to continue in 2001. However, prospects are good for exports of furniture quality plywood which depends mostly on imported logs, but also veneer, mainly oak and cherry from the United States and other

TABLE 8.2.3

Production and trade of hardwood plywood, including tropical, in the UNECE region, 1997 -2000
(1,000 m³)

	1997	1998	1999	2000	Change 1999 to 2000		
					Volume	%	
PRODUCTION							
EU/EFTA	1,100	1,058	1,018	1,013	-5	-0.5	
of which:							
Finland	578 P	538	498	498	0	0.0	
France	405 P	403	401	397	-4	-0.9	
Other Europe	546	509	548	534	-14	-2.5	
of which:							
Poland	167	133	167	169	2	1.2	
Latvia	145 P	150	155	156	1	0.9	
Czech Republic	65 P	70	75	59	-16	-21.3	
Lithuania	40 P	36	32	38	6	19.4	
Russian Federation	764 P	1,000	1,238	1,356	118	9.5	
North America	1,657	1,736	1,784	1,806	22	1.2	
United States	1,657 E	1,736 E	1,784	1,806	22	1.2	
EXPORTS							
EU/EFTA	804	1,168	1,271	1,248	-23	-1.8	
of which:							
Finland	468 P	449	429	460	31	7.2	
Belgium	...	...	314 E	271 E	-43	-13.7
Other Europe	511	401	385	393	9	2.3	
of which:							
Latvia	266 P	138	126	125	-1	-1.0	
Poland	68	67	66	79	13	20.0	
Russian Federation	401 P	627	913	973	60	6.6	
North America	387	415	461	532	71	15.4	
Canada	263 P	289	314	384	70	22.3	
United States	124 P	126	147	148	1	0.7	
IMPORTS							
EU/EFTA	1,650	1,909	2,346	2,551	205	8.7	
of which:							
United Kingdom	571 P	570	569	590	21	3.7	
Belgium	...	...	366	327	-39	-10.7
Other Europe	219	258	313	333	20	6.6	
of which:							
Slovakia	66 P	69	73	63	-10	-13.7	
Poland	62	58	60	62	2	3.3	
Russian Federation	44 P	25	3	11	8	307.4	
North America	1,764	1,943	2,044	2,050	6	0.3	
Canada	172 P	165	80	102	22	27.5	
United States	1,592 P	1,778	1,964	1,948	-16	-0.8	

Source : UNECE/FAO TIMBER database, 2001.

species from Africa. Indonesian imports of temperate hardwood logs from the United States in 2000 amounted to 29 million dollars and represented 85% of total veneer log imports.

8.3 Oriented strand board (OSB)

Capacity of OSB in North America continues to grow with the recent or imminent arrival of several large-scale plants. Three came on stream in 2000, followed by two more in 2001 (table 8.3.1). At least five more are planned for 2002 and 2003. Additionally, several upgrades at existing plants boosted or will boost capacity. Realization that the market is being oversupplied has resulted in the cancellation (e.g. Boise Cascade in Chile) or postponement (Louisiana Pacific in Quebec) of several large-scale projects, but others have come along to take their place leaving intact the prospects for significant capacity expansion.

In Europe, two more plants began operations in 2000. That, along with upgrades to two existing plants in Scotland and France, sharply boosted European capacity to around 2 million m³, up about 67% for the year (table 8.3.2). Four additional projects in 2001 will add about

another million m³. Further plans beyond 2001 are rumoured, but their status is uncertain. Some sense that potential investors are beginning to grasp the magnitude of the capacity build-up and are adjusting their plans accordingly is found in a number of projects that were discussed but have now been shelved, including plants in Wales (Kronospan) and Germany (Kunz and Pfeleiderer). Hornitex, the large particle board and MDF producer, which entertained notions of building an OSB plant at Beeskow, Germany, filed for bankruptcy protection in mid-2001.

Along with the new capacity, production also jumped on both continents setting new record levels. In North America, OSB production surpassed 18 million m³, up 2.3% from 1999 (graph 8.3.1 and table 8.3.3). The increase was less than the growth in capacity, reflecting difficult market conditions in the second half of 2000 that necessitated temporary or extended curtailments at over

TABLE 8.3.2

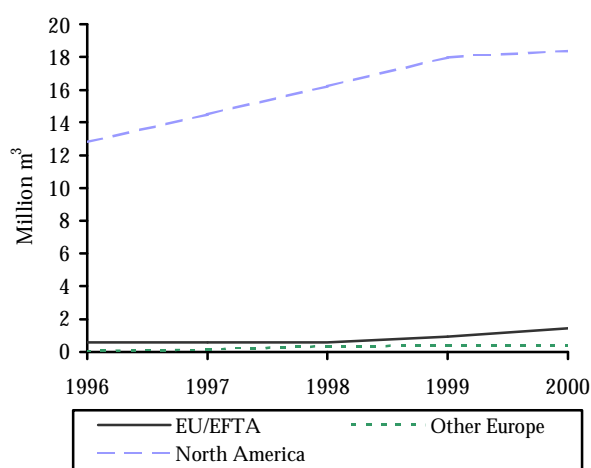
Recent and planned European OSB capacity additions, 2000 -2001
(1,000 m³)

Company	Location	2000	2001
Kronofrance	France	350	
Egger	Germany	360	
Kronospan	Bulgaria		100
Koronotex	Germany		385
Interlin	Belgium		250
Sonae/Glunz	Germany		350

Source: United States Forest Products Laboratory, 2001.

GRAPH 8.3.1

Production of oriented strand board, 1996 -2000



Source: UNECE/FAO TIMBER database, 2001.

TABLE 8.3.1

Recent and planned North American OSB capacity additions, 2001 -2003
(1,000 m³)

Company	Location	2000	2001	2002	2003
Weyerhaeuser	Saskatchewan	500			
Footner	Alberta	800			
Nexfor	South Carolina	450			
Georgia Pacific	Arkansas		360		
Nexfor	Alabama		450		
Chatham	New York			440	
Louisiana Pacific	Quebec			550	
Ced'Or	Quebec			320	
Tolko	Saskatchewan				550
Louisiana Pacific/Slocan	Saskatchewan				625

Source: United States Forest Products Laboratory, 2001.

TABLE 8.3.3
Production and trade of OSB in the UNECE region, 1997 -2000
(1,000 m³)

	1997		1998		1999		2000		Change 1999 to 2000	
									Volume	%
PRODUCTION										
EU/EFTA	573		583		923		1,425		502	54.4
of which:										
Germany	0	E	0	E	0	E	325	E	325	...
United Kingdom	223	P	223		223		280	E	57	25.6
France	100	E	100	E	100	E	270	E	170	170.0
Other Europe	151		360		365		365		0	0.0
of which:										
Poland	146		350		350		350		0	0.0
Romania	5	P	10		15		15		0	0.0
North America	14,503		16,210		17,971		18,384		414	2.3
Canada	4,908	P	6,274		7,694		7,847		153	2.0
United States	9,595	P	9,936		10,277		10,537		260	2.5
EXPORTS										
EU/EFTA	476		530		423		409		-14	-3.3
of which:										
Ireland	150	E	186	E	186		191		5	2.9
United Kingdom	124	P	129		135		115		-20	-14.8
Other Europe	208		298		382		450		69	18.0
of which:										
Poland	39		170		290		328		38	13.1
Slovakia	86	P	57		28		86		58	207.1
North America	5,196		6,041		6,887		7,091		204	3.0
Canada	5,177	P	5,952		6,727		6,932		205	3.0
United States	19	P	89		160		159		-1	-0.6
IMPORTS										
EU/EFTA	698		905		1,063		1,343		279	26.3
of which:										
Spain	100	E	262		275		501		227	82.7
Germany	108	P	200		292		293		1	0.3
Netherlands	82	P	98		111		111	R	0	0.0
United Kingdom	153	P	110		67		72		5	7.5
Other Europe	119		133		155		292		137	88.7
of which:										
Turkey	1	P	2		3		113		110	3666.7
Slovakia	17	P	43		69		64		-5	-7.2
North America	4,991		5,811		6,636		6,864		228	3.4
Canada	0	P	59		123		110		-13	-10.6
United States	4,991	P	5,752		6,513		6,754		241	3.7

Source: UNECE/FAO TIMBER database, 2001.

25 existing plants. In Europe, production is estimated at 1.79 million m³, up 39% from 1999. Again, the production increase lagged behind the jump in capacity owing to normal start-up problems associated with new plants.

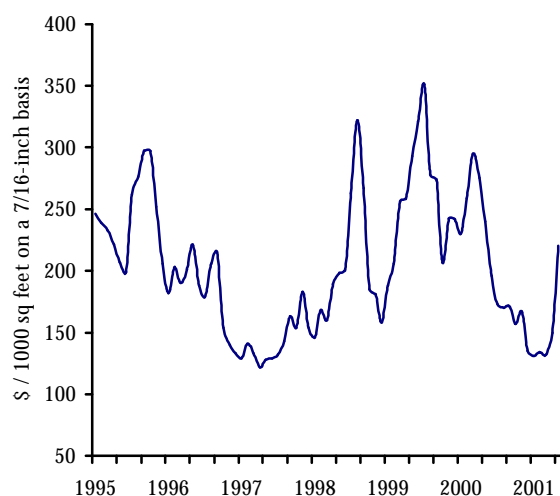
North American production is largely contained within the continent. The small amounts that were exported to Europe have been all but erased by the strong dollar and growing domestic European production. Japan, which is an important market for some western Canadian mills, reduced its imports of Canadian OSB by 14% in 2000. The high exchange rate of the dollar also helped European exporters.

Exports from Germany and France to the United States, on the other hand, showed an increase as the two new producers targeted a part of their output to that market. As European capacity grows, this flow, which is relatively small at present, can be expected to increase because the European market for structural panels is not as well developed as North America's. The latter provides a ready and reliable outlet, though not necessarily a lucrative one as prices weaken when the market is oversupplied.

Prices for OSB in North America exhibited extreme swings during 2000 and early 2001 (graph 8.3.2). From around \$300 per 1,000 ft² in March, they fell to around \$130 per 1,000 ft² by year end. In the spring of 2001, a rally pushed prices back above 200 dollars before renewed weakness pulled them back to an intermediate level. Stagnant North American demand in 2001 and higher capacity will keep prices under pressure.

GRAPH 8.3.2

United States OSB prices, 1995 -2001



Source: Random Lengths Yardstick, 2001.

Over the last three decades, demand for structural panels (softwood plywood and OSB) in North America has grown by 3% per year, but even that modest rate of growth will not be achieved in 2001. OSB has grown faster by taking an ever-increasing share, but in sub-markets, such as the large residential sheathing market at 75%, the OSB share is approaching saturation. With the planned capacity for the coming two years exceeding prospective demand growth, pressure on prices is likely to continue until closures of redundant facilities, either plywood or OSB, close the demand-supply gap.

OSB is undeniably the wood product success story of the past two decades, but the product is now increasingly well advanced in its life cycle. North American OSB producers also hope to emulate their success in sheathing in other areas, such as concrete forming, do-it-yourself markets, siding, and industrial uses. But past attempts at market broadening have had mixed success. Some have resulted in outright disaster involving hundreds of millions of dollars in liabilities owing to product failure. To avoid that fate, the mechanical properties (durability, dimensional stability, strength, stiffness) and appearance of speciality products have to be upgraded. But that entails higher costs, which erases much if not all of the cost advantage that propelled OSB over plywood in the first place. Thus, prospective producers should carefully plan their marketing strategy so as not to be caught in commodity markets that are seriously over-supplied and subject to endemic price weakness.

In Europe also, prices weakened following the start-up of the two new facilities in France and Germany. The 2000 and 2001 construction downturn in Germany made absorption of the new supply difficult. As in North America, the prospective start-up of substantial new capacity and the gearing up to full potential of the recent additions becloud prospects for an imminent upturn. Even a strong economic surge may not be sufficient to reverse the OSB slump as the amount of capacity overhang greatly exceeds prospective requirements.

8.4 Particle board

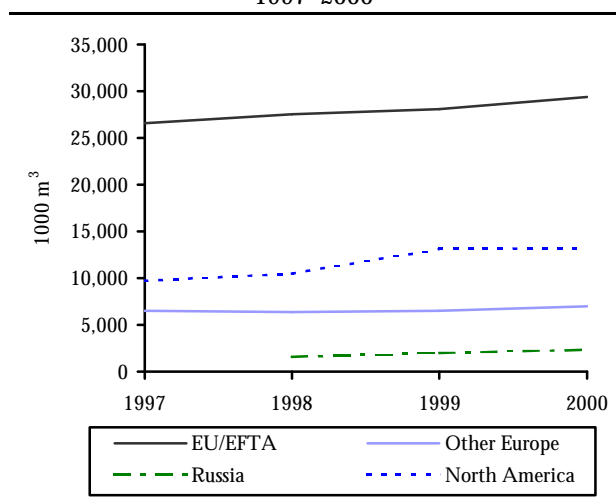
Production capacity for particle board in North America stood at 13.8 million m³ at the end of 2000 and is expected to increase by 4% to 14.4 million m³ by the end of 2001 (Composite Panel Association (CPA)). Production capacity of particle board in Europe, on the other hand, is expected to stabilize in 2001 at 36.6 million m³ as incremental capacity changes in a few mills offset closures of at least four smaller plants in Germany, Denmark and Cyprus (European Panel Federation (EPF)).

Production trends followed an upward path on both continents, and as in the case of OSB, set new record

levels. In North America, production rose marginally despite the economic sluggishness and reached 13.1 million m³. In Europe, a 4.8% increase was registered with production at 36.3 million m³ (graph 8.4.1 and table 8.4.1). Production rose more rapidly (6.6%) in the "other Europe" countries, where output in Poland was up 14.4% to 2.6 million m³ as new capacity came on stream.

GRAPH 8.4.1

Production of particle board, excluding OSB, 1997-2000



Source: UNECE/FAO TIMBER database, 2001.

In the Russian Federation production also increased significantly, by 16.9% from 1999 to 2000 to reach 2.3 million m³.

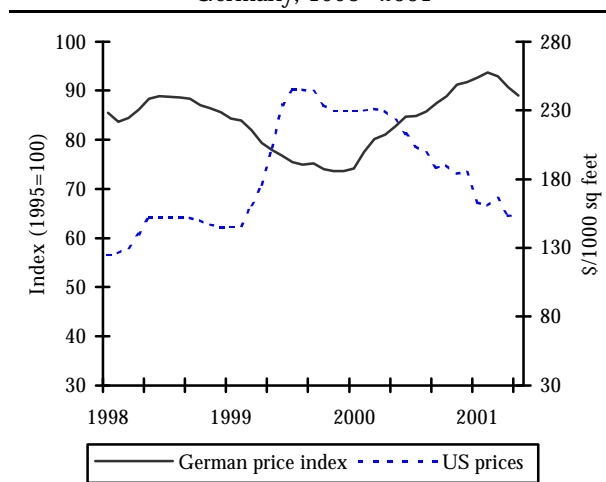
As in the case for OSB, most of the particle board trade on each continent stays within the confines of the region. United States imports and exports to countries other than Canada are small and roughly offset each other. Canadian trade with countries other than the U.S is negligible.

Within Europe, the major net importing countries are the United Kingdom (1.7 million m³), the Netherlands (0.9 million m³), and Denmark (0.4 million m³). Major exporting countries are Belgium (1.2 million m³), Austria (1.1 million m³), and Germany (0.9 million m³). Germany is particularly notable because it went from being a net importer in 1996 and 1997 to a major exporter now, a change attributed to sluggish German construction activity (EPF). Additionally, some European producers export significant volumes to southeast Asia.

Prices for particle board in North America have cycled down since early 2000 and are nearing their lows in both 1996 and 1998 (graph 8.4.2). Expanded capacity from two new lines in Canada and a Willamette plant in South Carolina will need a year or more to be absorbed. The bankruptcy filing by Hornitex places its 700 million

GRAPH 8.4.2

Particle board prices in the United States and Germany, 1998-2001



Sources: Random Lengths Yardstick and Holz Journal, 2001.

m³ capacity expansion in South Carolina in question and the abandonment of such a large project would considerably ease the burden on other suppliers. If the expected general economic recovery in 2002 and 2003 occurs, a gradual strengthening in prices can be expected. The extent of the rebound will also depend on how many of the older particle board lines will be closed. Upcoming clean air regulations in the United States may force closure of some older plants as the considerable expense involved in emissions upgrades may not be justified in an environment where large, new plants are most efficient.

European prospects depend on an economic rebound that has been slow to materialize. Expected forthcoming interest rate cuts by the European Central Bank and signs of improved German industrial activity bode well for demand in 2002, while the absence of major new capacity plans is a plus for price prospects. Indeed the benchmark German price index for particle board has been trending up in the past two years. However, rising costs for adhesives and energy, as much if not more than market fundamentals, may be responsible for this, which, in any event, leaves prices below their levels of the mid-1990s.

8.5 Fibreboard

Apparent consumption of fibreboard set record levels in the EU/EFTA countries in 2000. Reflecting developments in the MDF industry, it went up by 12.8% to 9.8 million m³ (table 8.5.1 and graph 8.5.1). In the "Other Europe" countries and in the Russian Federation the trend was the same, consumption increased by 13.8% to 2.2 million m³ and 16% to 0.65 million m³, respectively.

TABLE 8.4.1
Production and trade of particle board, excluding OSB, in the UN ECE region, 1997 -2000
(1,000 m³)

	1997	1998	1999	2000	Change 1999 to 2000	
					Volume	%
PRODUCTION						
EU/EFTA	26,577	27,500	28,107	29,356	1,249	4.4
of which:						
Germany	9,152	9,375	9,491	9,904	413	4.4
France	3,275	3,482	3,587	3,544	-43	-1.2
Italy	2,750	2,950	3,070	3,200	130	4.2
Spain	1,815	1,880	2,203	2,783	580	26.3
Belgium	...	...	2,437	2,456	19	0.8
United Kingdom	1,952	2,063	2,216	2,281	65	2.9
Other Europe	6,540	6,348	6,540	6,971	431	6.6
of which:						
Poland	1,972	2,124	2,266	2,593	327	14.4
Turkey	1,728	1,525	1,643	1,650	7	0.4
Czech Republic	737	640	700	720	20	2.9
Hungary	...	440	457	484	26	5.8
Russian Federation	...	1,568	1,987	2,323	336	16.9
North America	9,721	10,475	13,132	13,142	10	0.1
Canada	3,053	2,347	2,436	2,517	81	3.3
United States	6,668	8,128	10,696	10,625	-71	-0.7
EXPORTS						
EU/EFTA	7,944	8,472	8,190	9,048	857	10.5
of which:						
Germany	1,532	1,658	1,586	2,090	504	31.8
Belgium	...	...	1,823	1,826	3	0.1
Austria	1,204	1,233	1,182	1,393	211	17.9
France	1,221	1,278	1,332	1,332	0	0.0
Other Europe	1,019	1,234	1,426	1,627	201	14.1
of which:						
Czech Republic	...	...	421	398	-23	-5.5
Poland	90	145	290	324	34	11.6
Russian Federation	...	97	95	142	47	49.5
North America	1,229	1,597	1,496	2,176	680	45.5
Canada	895	1,073	1,054	1,691	637	60.5
United States	334	524	442	485	43	9.7
IMPORTS						
EU/EFTA	6,104	6,699	6,420	6,612	193	3.0
of which:						
Germany	1,522	1,594	1,230	1,199	-31	-2.5
United Kingdom	966	1,043	996	1,092	96	9.6
Other Europe	1,024	1,182	1,182	1,489	307	26.0
of which:						
Poland	392	406	184	304	121	65.6
Romania	80	98	143	177	34	23.5
North America	1,219	1,647	1,885	2,764	879	46.6
Canada	262	219	469	620	151	32.2
United States	957	1,428	1,416	2,144	728	51.4

Source : UNECE/FAO TIMBER database, 2001.

TABLE 8.5.1
Fibreboard balance in the UNECE region, 1996 -2000
(Million m³)

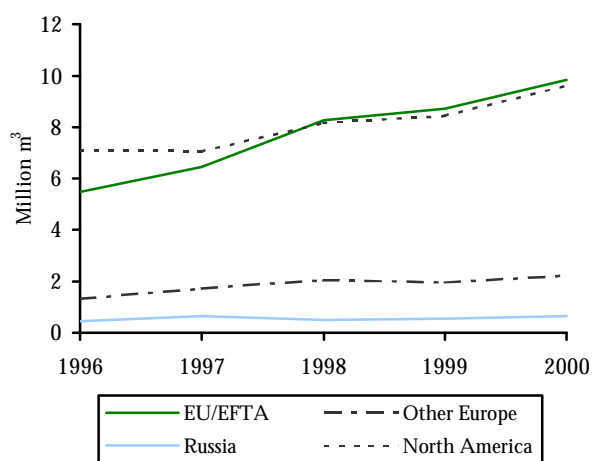
	1996	1997	1998	1999	2000	Timber Committee estimate for 2001*
EU/EFTA						
Production	5.36	6.40	8.09	8.60	9.58	10.06
Imports	2.99	3.93	4.53	4.69	4.99	4.94
Exports	2.87	3.86	4.36	4.56	4.71	4.77
Net trade	-0.12	-0.07	-0.17	-0.13	-0.27	-0.18
Apparent consumption	5.48	6.47	8.26	8.73	9.85	10.24
OTHER EUROPE						
Production	1.65	2.01	2.29	2.27	2.45	2.67
Imports	0.40	0.57	0.76	0.67	1.09	1.10
Exports	0.74	0.86	1.00	0.99	1.31	1.60
Net trade	0.34	0.29	0.24	0.31	0.22	0.50
Apparent consumption	1.31	1.72	2.05	1.95	2.22	2.17
RUSSIAN FEDERATION						
Production	0.59	0.75	0.62	0.78	0.89	0.91
Imports	0.02	0.06	0.05	0.04	0.04	0.04
Exports	0.17	0.17	0.17	0.26	0.28	0.28
Net trade	0.16	0.11	0.12	0.22	0.24	0.24
Apparent consumption	0.43	0.64	0.50	0.56	0.65	0.66
NORTH AMERICA						
Production	7.31	7.32	8.24	8.43	8.41	8.50
Imports	0.89	1.08	1.24	1.64	2.88	2.89
Exports	1.12	1.34	1.33	1.63	1.68	1.72
Net trade	0.22	0.27	0.09	-0.01	-1.21	-1.17
Apparent consumption	7.09	7.05	8.16	8.44	9.62	9.67

* = The Timber Committee's forecast trend for 2000 to 2001, made at the October 2000 session, was applied to the 2000 figure.

Source: UNECE/FAO TIMBER database, 2001.

GRAPH 8.5.1

Apparent consumption of fibreboard, 1996 -2000



Source: UNECE/FAO TIMBER database, 2001.

8.5.1 Hardboard

Hardboard panels have reached maturity in their life cycle. The industry has been facing competition from thin MDF in furniture components and other industrial and commercial applications. Prospects for further developments in laminations are good. A mill closed in Latvia in 2000, owing to high production costs and depressed prices. Production in Europe and North America showed little change and remained around 1999 levels (table 8.5.2). Imports in Europe increased by over 9% owing to an active market in the United Kingdom. The Russian Federation increased production by 13.5% to almost 700,000 m³.

TABLE 8.5.2
Production and trade of hardboard in the UNECE region, 1997 -2000
(1,000 m³)

	1997	1998	1999	2000	Change 1999 to 2000	
					Volume	%
PRODUCTION						
EU/EFTA	1,047	1,809	1,687	1,661	-27	-1.6
of which:						
Italy	100	800	610	550	-60	-9.8
Germany	295	309	336	336	0	0.0
France	124	115	115	115	0	0.0
Other Europe	751	864	743	726	-17	-2.3
of which:						
Poland	310	289	249	258	9	3.6
Estonia	13	177	170	177	7	4.4
Russian Federation	601	525	615	698	83	13.5
North America	1,670	1,377	1,361	1,379	18	1.3
Canada	342	108	136	141	5	3.7
United States	1,328	1,269	1,225	1,238	13	1.1
EXPORTS						
EU/EFTA	892	1,100	1,171	1,145	-26	-2.2
of which:						
Germany	283	453	557	557	0	0.0
Austria	89	107	131	131	0	0.0
Other Europe	443	475	516	462	-54	-10.5
of which:						
Poland	96	105	152	172	20	13.0
Estonia	129	170	153	65	-88	-57.7
Russian Federation	174	173	257	277	20	7.8
North America	666	376	403	436	33	8.2
Canada	276	221	244	283	39	16.0
United States	390	155	159	153	-6	-3.8
IMPORTS						
EU/EFTA	1,211	1,374	1,324	1,390	66	5.0
of which:						
United Kingdom	198	192	141	250	109	77.3
Germany	215	279	221	221	0	0.0
Denmark	141	52	137	150	13	9.5
Austria	60	99	131	131	0	0.0
Other Europe	188	394	338	426	88	26.0
of which:						
Czech Republic	33	39	71	116	45	63.4
Poland	48	81	62	65	3	5.3
North America	459	341	407	367	-39	-9.7
Canada	74	78	68	71	4	5.5
United States	385	263	339	296	-43	-12.7

Source : UNECE/FAO TIMBER database, 2001.

8.5.2 Medium density fibreboard

Capacity of MDF in North America was 4.7 million m³ at the end of 2000 and is expected to increase by 9% to 5.1 million m³ by 2001 (CPA). This is in spite of the closure of several mills in the western and southern United States as prices and profits shrank in the face of considerable expansion in the late 1990s. Production capacity of MDF in Europe also increased sharply in 2000, rising by 9% to 10.4 million m³, but will settle down, following a decade of rapid expansion, to just a 1% increase in 2001 to 10.6 million m³ (EPF).

Production increased by 1.8% in North America where it rose to 3.5 million m³ in 2000 (table 8.5.3). In Europe, production almost reached 9 million m³, up 15% from 1999, as new plants achieved targeted output efficiencies. Moreover, as the recent new capacity geared up to full utilization, production in Europe can be expected to experience another substantial surge in 2001. In the "other Europe" group of countries, production grew by 12.3% to 1.4 million m³. Major increases were in Poland and Turkey by 9.4% and 21.3% respectively.

As in particle board, exports outside of North America account for an insignificant share of sales in Canada and the United States. Likewise, there is little imported from outside the region except during times of market tightness and high prices when generally imports respond quickly to fill any vacuum.

Europe is a net exporter of MDF, chiefly to Asia, but exports account for only about 7% of overall sales. Such exports nevertheless increased strongly in 2000 aided by economic recovery in Asia following the 1998 economic slump.

North American MDF prices increased slightly in 2000 as demand grew sufficiently, and enough older capacity was withdrawn, to absorb much of the supply overhang from previous expansions. New lines in Montana and Quebec in 2001 and another in North Carolina in 2002 assure additional supplies in the near future and a weakening of suppliers' positions.

Demand for MDF in Europe is growing and is expected to result in 2001 production exceeding 10 million m³. Growth is supported by expansion of the laminate flooring market, a relatively new application for MDF. Thin MDF is also making inroads into traditional hardboard markets, which is a product hampered by high energy and effluent treatment costs. In all, supply and demand are expected to be in better balance in Europe in 2001 and 2002 than in North America.

8.5.3 Insulating board

Production of insulating board in Europe and North America remained at around 1999 levels. Among the major European producers, Poland was the only country

to report major increases, which amounted to 20.7% (table 8.5.4)

8.6 Summary

In the overall scheme of structural panel markets, softwood plywood is declining and OSB is rising. In that sense the UNECE Timber Committee's initial estimates for stable United States plywood production appear now to have been optimistic as indications point to a 1 million m³ decline for 2001. OSB production was correctly anticipated to increase, both in North America and Europe.

Particle board is generally a mature product in both North America and Europe while MDF is still gaining market share as new applications are developed and exploited and older products displaced by substitution. In that light, European production of MDF is now expected to pass the 10 million m³ mark in 2001, exceeding the Timber Committee's more modest 9 million m³ estimate. Particle board is likely to show modest gains, as expected.

The continued strength of the dollar is the major feature of international trade. This has resulted in the virtual elimination of United States softwood plywood from the European market by Brazilian elliotis pine and the potential for European OSB producers to export more of that product to America.

The outlook for North American panels consumption beyond 2001 is supported by interest rate reductions and tax cuts that should bolster North American economies. Pricing on the other hand may not reflect the strength, as substantial capacity expansions in the pipeline will keep supply abundant.

TABLE 8.5.3
Production and trade of medium density fibreboard in the UNECE region, 1997 -2000
(1,000 m³)

	1997	1998	1999	2000	Change 1999-2000	
					Volume	%
PRODUCTION						
EU/EFTA	4,801	5,734	6,409	7,412	1,004	15.7
of which:						
Germany	1,495	1,566 P	2,032 P	2,500 E	468	23.0
Spain	490	969	970 E	975 E	5	0.5
France	416	636	691	971	280	40.5
Italy	600	650	650	715	65	10.0
United Kingdom	412	390	515	700	185	35.9
Other Europe	996	1,160	1,252	1,406	154	12.3
of which:						
Poland	294	637	702	768	66	9.4
Turkey	530	357	348	422	74	21.3
Czech Republic	66	69	70	75	5	7.1
Romania	4	1	16	38	22	137.5
Russian Federation	84	80	140	170	30	21.4
North America	2,691	3,192	3,394	3,360	-34	-1.0
Canada	289	712	893	859	-34	-3.8
United States	2,402	2,480	2,501	2,501	0	0.0
EXPORTS						
EU/EFTA	2,367	2,679	2,905	3,069	164	5.6
of which:						
Germany	434	513	533	533 R	0	0.0
France	354	328	509	509 R	0	0.0
Italy	435	342 P	331	463	132	39.9
Other Europe	203	281	195	310	115	58.9
of which:						
Poland	134	212	126	181	55	43.3
Czech Republic	49	50	49	58	9	18.4
Romania	4	1	1	31	30	3000.0
North America	466	723	978	994	16	1.6
Canada	338	552	774	747	-27	-3.5
United States	128	171	204	247	43	21.1
IMPORTS						
EU/EFTA	2,091	2,444	2,560	2,638	79	3.1
of which:						
United Kingdom	462	572	496	421	-75	-15.1
Other Europe	186	254	230	416	186	80.6
of which:						
Poland	49	60	68	124	56	83.4
Turkey	30	63	21	104	83	395.2
Russian Federation	64	54	40	40 R	0	0.0
North America	468	704	973	2,213	1,240	127.4
Canada	95	92	113 E	164 E	51	44.8
United States	373	612	860	2,049	1,189	138.3

Source : UNECE/FAO TIMBER database, 2001.

TABLE 8.5.4
Production and trade of insulating board in the UNECE region, 1997 -2000
(1,000 m³)

	1997	1998	1999	2000	Change 1999-2000	
					Volume	%
PRODUCTION						
EU/EFTA	556	544	508	505	-3	-0.6
of which:						
Germany	105	110 P	138 P	138 R	0	0.0
Switzerland	115	110	120	120 R	0	0.0
France	37 R	50	60	60 R	0	0.0
Other Europe	260	269	272	314	42	15.3
of which:						
Poland	177	186	198	239	41	20.7
Lithuania	15	19	21	25	4	16.7
North America	2,957	3,676	3,676	3,676	0	0.0
Canada	425	425 P	425 P	425 R	0	0.0
United States	2,532	3,251	3,251	3,251	0	0.0
EXPORTS						
EU/EFTA	598	579	484	497	13	2.7
of which:						
Italy	109	92 P	90	112	22	24.4
France	76	76	87	87 R	0	0.0
Other Europe	213	241	277	542	265	95.5
of which:						
Poland	132	138	154	211	57	36.8
Estonia	26	25	27	129	103	387.7
North America	212	232	252	247	-5	-2.0
Canada	130	110	129	141	12	9.3
United States	82	122	123	106	-17	-13.8
IMPORTS						
EU/EFTA	623	714	806	957	151	18.7
of which:						
United Kingdom	95	128	135	197	62	45.9
Italy	71	77 P	129	189	60	46.5
Germany	126	126	163	163 R	0	0.0
Netherlands	151	142	140	140 R	0	0.0
Other Europe	199	109	106	251	145	137.0
of which:						
Turkey	1	3	5	110	105	2100.0
Poland	111	31	25	55	30	119.9
North America	151	199	261	304	43	16.4
Canada	42	42	65 E	66 E	1	1.2
United States	109	157	196	238	42	21.4

Source: UNECE/FAO TIMBER database, 2001.

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