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**REPORT FROM THE COMMISSION**

**Main report**

**The Market for Solid Fuels in the Community in 2000  
and the Outlook for 2001**

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## **1. INTRODUCTION**

Article 46 of the ECSC Treaty states that, to provide guidance on the course of action to be followed by all concerned, and to determine its own course of action, the Commission must conduct a study of market and price trends. This includes periodic reports on and short-term forecasts of the solid fuel market.

This report analyses the situation of the solid fuel market in the European Union in 2000, corrects the previous data given for 1999 and makes preliminary forecasts for 2001. Member States have presented to the Commission their estimates of production, supply and deliveries of coal and other solid fuels during 2000 and 2001. The data used in the report is that received from Member States, Eurostat and other specified sources. Some of the more recent figures provided may, however, differ from those of Eurostat. It should be noted that the economic forecasts are those for spring 2001.

The Report is divided into four sections: Section A deals with the world economic climate and the overall state of world coal markets; Section B deals with the demand for solid fuels in all sectors of the fuel market; Section C deals with the supply of coal to the European Union; and Section D deals with the supply and demand position of lignite and peat. The report is preceded by a summary of the main conclusions.

## **2. SUMMARY**

### **2.1 World Economic Activity**

World GDP growth is expected to slow in 2001 when compared with 2000, and this will be felt principally in the USA and Japan. Most forecasters predict a mild recession, with growth slightly resuming in the latter part of 2001.

### **2.2 World Energy Markets**

Energy prices rose dramatically in 2000. Crude oil prices rose as a result of discipline amongst the oil producers and high demand in the USA. Natural gas prices, which are linked in many contractual arrangements, have risen in line with crude oil prices. Coal prices rose to a less dramatic degree under the umbrella of oil prices.

### **2.3 Solid Fuel Market Share**

In the European Union energy market, solid fuel is continuing to lose market share to gas. In 2000, it is estimated to have fallen to 14.7% of the total market, compared to 15.4% in 1999. The share in 2001 is forecast to fall to 14.5%, a less pronounced reduction due to the favourable cost differential of solid fuels compared with natural gas.

### **2.4 Coal Demand**

Total inland deliveries of coal rose slightly in 2000 to 257.2 million tonnes. In 2000, the demand for imported steam coal (which makes up the bulk of steam coal supply) was 104 million tonnes compared to 99 million tonnes in 1999.

Coal demand is forecast to fall to around 245 million tonnes in 2001. High levels of precipitation in the autumn and winter of 2000 meant that in Sweden, France, Spain and Portugal water levels were sufficient to support high levels of hydro generation. This is partially contrasted by Germany, Italy and the United Kingdom where the favourable cost of coal will encourage coal-fired generation.

### **2.5 International Coal markets**

In both the international steam and coking coal markets, rationalisation amongst the coal suppliers and a lack of investment in green field mining projects means that supply has caught up with demand. In 2001, prices have risen in both sectors by more than 25% when compared with 2000.

In 2000, prices for steam coal rose on the international market. The MCIS (McCloskey Coal Information Services) index, which records spot coal prices into North West Europe rose from \$28.08 in January to \$37.75 in December of that year. Prices are forecast to remain high as a consequence of high internal demand in the USA, which is being supported by increased levels of coal imports.

## 2.6 The Market for Coking Coal and Coke

In 2000 in the European Union, steel production was high. Product prices, however, fell dramatically from April 2000 onwards. Blast furnace iron output was 2.6% higher in 2000 than 1999. Iron output is forecast to fall in 2001.

Coal use for the manufacture of coke is forecast to fall in 2001 due to coking plant closures in Germany and the UK.

Prices of coking coal rose only marginally in 2000 when compared with 1999. Prices for 2001 have risen significantly (23%) due to the tightening of the supply/demand balance.

Whereas, traditionally, the suppliers of Australian and Canadian coking coal have been prepared to discount coal sold into the European market in 2001, they have sought and won a premium over Asian market prices. It is difficult to forecast whether this premium will continue, or is simply due to the current tightness in the market.

## 2.7 Other Markets

Solid fuel use continues to fall in the domestic and industrial markets, being replaced by natural gas. In the domestic market this is due predominantly to convenience factors. In the industrial market it has been caused by a combination of lower overall fuel cost and lower plant investment costs.

There are indications in the United Kingdom that industrial users are re-activating coal-fired boilers which have been mothballed or were on standby.

## 2.8 Indigenous Coal Supply

The amount of coal mined in the European Union continues to fall with output in 2000 estimated at 87 million tonnes compared to 100 million tonnes in 1999. Production has fallen in all the producing countries namely; Germany, the United Kingdom, Spain and France. Output is forecast to fall further in 2001 to 82 million tonnes.

Increased coal demand and the development of new mining areas in three of the UK's deep mines will result in a forecast increase of output in the United Kingdom. This will halt a long-term decline.

## 2.9 Coal Imports

Coal imports are forecast to rise in 2001. Imports in 2000 were above 1999 levels at almost 165 million tonnes. These are forecast to increase to 166 million tonnes in 2001.

Due to high mining costs and heavy internal demand in the USA, imports of US steam coal continue to decline.

In the steam coal market US imports are being replaced by coal from South America and South Africa and in the coking coal market US imports have been replaced by Australian and, to a lesser extent, Canadian coal.

## 2.10 Freight Rates

Freight rates peaked in October 2000 and have since fallen. Freight rates are predicted to be soft until the latter part of 2001. Cape rates are falling as a result of lower steel-making activity worldwide and Panamax rates because of a large number of new Panamax vessels being delivered in 2001.

## 2.11 Rationalisation amongst Coal Suppliers

2000 saw significant consolidation in the coal supply industry.

In the steam coal market four major companies are emerging with considerable influence on the market. The companies are:

Rio Tinto

Glencore

Amcoal

BHP/Billiton

Whilst none of these companies are dominant in themselves, they do in fact control more than 50% of the world's traded steam coal.

Trade in coking coal is dominated by BHP/Billiton, who control around 30% of the market.

More rigidity can be anticipated in the market place which could result in the average price of coal increasing in time.

## 2.12 Currency Impacts

Although commodity prices strengthened in 2000, the Australian dollar remained weak. This could provide a moderating influence to coal prices should the Australian dollar have adjusted permanently to a lower level.

## 2.13 Coal Price Indices

A section on the relativity between some of the more common pricing indices employed in the coal market is included.

## 2.14 Lignite and Peat – Production and Use

Lignite production is forecast to increase both in 2000 and in 2001. The low cost of lignite production makes it attractive to electricity generators, particularly in Germany.

Peat production is forecast to rise to 10.0 million tonnes in 2001 compared to an estimate of 9.9 million tonnes in 2000.

## **SECTION A**

### **GLOBAL ECONOMIC ACTIVITY AND THE WORLD COAL MARKET**

### 3. WORLD ECONOMIC CLIMATE 2000 – 2002

#### 3.1 GDP Growth

Forecasts of GDP around the world indicate that economic growth will slow in 2001. The countries forecast for the biggest slow down are the USA and Japan; a matter of some concern since they are the world's largest economies. Most forecasters suggest that it will be a mild recession with growth resuming in the last two quarters of 2001.

**Forecast Levels of GDP Growth**

	OECD			European Commission			Economist		
	2000	2001	2002	2000	2001	2002	2000	2001	2002
Belgium	3.8	3.1	2.9	3.9	3.0	3.1	3.1	2.5	2.6
Denmark	2.8	2.5	2.5	2.9	2.1	2.4	2.7	1.8	2.2
Germany	3.0	2.7	2.5	3.0	2.2	2.6	1.9	1.6	2.3
Spain	4.1	3.5	3.1	4.1	3.2	3.3	3.7	2.8	3.0
France	3.3	2.9	2.5	3.2	2.9	2.8	2.8	2.4	2.5
Greece	4.0	4.6	4.4	4.1	4.4	4.8			
Ireland	11.0	7.9	7.0	10.7	7.5	7.1			
Italy	2.8	2.7	2.6	2.9	2.5	2.7	2.7	2.1	2.3
Luxembourg	8.1	6.2	5.5	8.5	5.6	5.5			
Netherlands	4.5	3.9	3.4	3.9	3.4	3.1	3.1	2.6	2.9
Austria	3.6	2.9	2.6	3.2	2.5	2.6			
Portugal	3.2	3.0	2.9	3.3	2.6	2.6			
Finland	5.4	4.6	4.2	5.7	4.0	3.6			
Sweden	4.0	3.2	2.4	3.6	2.7	3.0	2.6	2.4	2.9
United Kingdom	3.0	2.6	2.3	3.0	2.7	3.0	2.6	2.2	2.7
Euro Area	3.5	3.1	2.8	3.4	2.8	2.9	3.0	2.2	2.5
European Union	3.4	3.0	2.7	3.4	2.8	2.9			
<b>Other Major Industrial Nations</b>									
USA	5.2	3.5	3.3	5.0	1.6	3.0	3.4	1.6	2.9
Japan	1.9	2.3	2.0	1.7	1.0	1.3	2.8	0.5	1.3
Total OECD	4.3	3.3	3.1						

*Sources; OECD / EC Spring 2001 Economic Forecast / 'Economist'*

However, 2000 was a year of extremely high economic activity with growth levels approaching those seen in the period 1988 to 1990. A degree of cooling off was probably inevitable after 10 years of continued strong growth in the US economy.

Inflation levels remain low across the developed world with overall commodity prices falling 6.6% in dollar terms (levels of March 2000 compared with March 2001).



Stock markets are extremely volatile and the comfort factor resulting from escalating stock values has been dented by this uncertainty. Careful control of interest rates by the central banks, although not directed at equity values, should restore a modicum of stability to the markets.

Low interest rates in the developed world mean that the housing market remains relatively buoyant and this should prevent consumer confidence from falling too far.

### 3.2 The State of the World Steel Industry

Some regional overcapacities in the steel industry and changes in the traditional commercial flows led to a collapse in steel prices in the latter part of 2000. There are indications of a slight strengthening in prices as inventories are brought under control.

### 3.3 Energy Prices

Energy prices remain high in historical terms (1990 to 2000). Discipline amongst the OPEC producers combined with a cold winter in the USA has kept crude prices at high levels.

Of even more significance to the steam coal market has been high natural gas prices. Coal prices, although rising under the umbrella of oil prices, have shown more modest increases and as a consequence, where generators have been able to increase the utilisation of coal-fired plant, they have done so.

This has particularly impacted on the USA where the cold winter, low stocking policies and the extra demand for coal have put extreme pressures on the coal supply chain.

Coal prices have nearly doubled on a delivered mine basis (\$27,5 per tonnes to \$49.5 per tonnes). Imports of coal from South America have increased and there are reports that cargos of coal have been taken from South Africa and Poland.

The consequence of this for the European Union is to put pressure on steam coal prices and US metallurgical coal prices.

### 3.4 The Asian Market

In Asia demand for coal remains strong and is still growing. The market is in much closer balance than at any time during the last decade. Development of new mines has been limited because of the low price realisations achievable by coal producers over the last three years.

There is also some evidence that producer discipline is growing as a result of the major consolidation that has occurred in the coal industry over the last five years.

Growth in coal demand, even at the forecast GDP levels, and limited increases in capacity led to coal prices remaining strong on an ex-mine basis throughout 2000.

The impact of this will be reduced to some extent by the softening in freight prices, which has resulted from the slowing down of world economic activity.

## 4. OVERVIEW OF WORLD COAL MARKET

In 2000, the increased level of industrial activity resulted in record levels of coal being traded on the international market. World coking coal trade stood at 192 million tonnes and steam coal at 381 million tonnes.

### 4.1 Dynamics of the Market

#### 4.1.1 Steam Coal

The period of rationalisation in the coal industry, which has been taking place since 1998 and the relative lack of investment in new projects has resulted in a tightening of the supply/demand balance. In Europe delivered prices for steam coal on the international market started to rise from October 1999, initially as a result of increased freight rates.

In February 2000 coal suppliers started to seek higher FOB prices, which further increased delivered prices. The MCIS index, which reflects the spot price of coal delivered into NW European ports rose from \$30.15 in January 2000 to \$42.24 in March 2001.

Freight rates began to soften in October 2000 and, as a consequence, spot coal prices eased in January 2001 with the MCIS index slipping back to \$40.80 in February. Coal suppliers are, however, still seeking further FOB price increases, which are to a large extent countering the decrease in freight prices and are reflected in the strengthening of the MCIS Index to \$42.24 in March 2001.

With a forecast easing of world economic growth, particularly in the USA and Japan, FOB prices would normally be expected to fall. However, overall demand for internationally-traded steam coal is predicted to rise further due to new coal-fired power plants coming on stream in Asia and the need to supplement domestic coal production with coal imports in Germany and the United Kingdom.

The main growth in demand will come from Asia.

Whilst suffering the same pressure on sea freight costs, FOB coal prices in Asia were restrained until April 2000 by increasing exports of steam coal from China. FOB prices, however, started to rise sharply in April, as shown by the MCIS Asian marker price, which rose from \$28.99 FOB to \$38.18 FOB in February 2001.

In spite of a general economic turndown, steam coal demand in the Atlantic basin is forecast to rise from 132.51 million tonnes in 2000 to 137.26 million tonnes in 2001 ('Steam Coal Forecaster'). However, most of this growth is forecast to come from the Americas. There will be some organic growth in coal exports but no major new developments are planned to come on stream. This would point, therefore, to a period of relatively strong prices.

#### 4.1.2 Coking Coal

The low level of spot buying in the coking coal market means that major movements in price tend to become more apparent at the time new settlements are made for annual business.

For the 2000 coal year the Japanese were able to achieve a price reduction on their coking coal supplies with their Canadian and Australian suppliers. A major factor for this was that

they felt disadvantaged against their European competitors who had traditionally received lower FOB prices than the Japanese.

The basis for this discrepancy, which up until then had been accepted by the Japanese, was that it produced comparable delivered prices in both markets.

There are signs that the Japanese are no longer prepared to accept comparable delivered prices in Europe and are pressurising their suppliers to seek higher FOB prices for European customers. In the 2000 coal year the result was that European buyers had to accept static or slightly increased FOB prices.

The high price of coal in the domestic US market is forcing US suppliers to seek large price increases, which is putting further pressure on coking coal prices in the European market.

For the 2001 coal year the Japanese agreed to a 10% increase in FOB prices in their discussions with the Australian and Canadian producers. The price of a prime coking coal has risen from \$38 to \$42.50.

In Europe, by contrast, Australian producers have sought and achieved a 25% increase with prices increasing for prime coking coal from \$36 FOB equivalent to \$45 FOB equivalent.

US producers, faced with a surge in the price of domestic steam coal prices are seeking even greater increases before agreeing to put coal into the export coking coal market. Settlements in the region of \$60 FOB are reported in the European market. This would represent a 30% increase on 2000 prices.

#### 4.2 Rationalisation of the Coal Industry

The internationally traded coal market in the Atlantic is dominated, on the supply side, by three major players; namely; Glencore, Amcoal and BHP/Billiton. All of these companies own assets in South America and South Africa. Indeed they are equal partners in the Cerrejon Central properties in Colombia and also jointly purchased the 50% stake of the Cerrejon Norte mine owned by the Colombian government.

Glencore, Amcoal and Billiton sourced over 50% of the coal traded in the Atlantic basin from mines in their ownership either on a joint or stand alone basis.

If one examines the Asian steam coal market, a similar state of affairs exists if one incorporates the assets belonging to Rio Tinto in Australia and Indonesia. It is estimated that 62 % of the steam coal traded in the Asian region comes from mines controlled by four companies, namely:

Rio Tinto

Glencore

Amcoal

BHP/Billiton

The consolidation of ownership in the coal industry should result in more discipline in the coal market, which could more closely mirror the iron ore market where the number of sellers is limited.

In the past, high coal prices have encouraged the development of small scale coal mining operations, particularly in Australia. Should this occur again it would provide a counterbalance to the growing power on the supplier side of the steam coal market.

It is more likely, however, that a more rigid coal market with better price realisations over the long period will encourage new export mine development in China and Russia. This in turn will counter the growing strength which results from a reduced number of suppliers.

## **SECTION B**

### **THE DEMAND FOR SOLID FUEL IN THE EUROPEAN UNION**

## 5. THE DEMAND FOR SOLID FUEL IN THE EUROPEAN UNION

### 5.1 Position of Solid Fuel in European Union Energy Consumption

In 2000, overall use of solid fuel has fallen in both tonnage and percentage terms compared with 1999. Gas and Nuclear energy have, however increased their share of the market. Solid Fuel is forecast to stabilise in tonnage terms in 2001 but will continue to lose in percentage terms as a result of overall market growth.

#### Gross Internal Energy Consumption in the European Union

*Million Tonnes oil equivalent ( Mtoe )*

	1999		2000 provisional		2001 forecast	
		%		%		%
<b>Solid Fuels</b>	219.0	15.4	211.6	14.7	211.6	14.5
Out of which:						
- Indigenous hard coal	62.77	4.41	54.1	3.75	50.69	3.47
- Indigenous Lignite and Peat	47.36	3.33	47.9	3.33	48.69	3.34
<b>Oil</b>	562.8	39.5	565.1	39.2	567.4	38.9
<b>Natural Gas</b>	333.3	23.4	349.4	24.2	365.5	25.0
<b>Nuclear</b>	218.4	15.3	223.1	15.5	223.3	15.3
<b>Other</b>	89.7	6.3	92.0	6.4	92.1	6.3
<b>Total</b>	1423.3		1441.2		1459.8	
<b>% increase</b>			1.26		1.29	

### 5.2 Total Inland Hard Coal Deliveries

Overall inland deliveries of hard coal is expected to decrease from 257.2 million tonnes in 2000 to 244.9 million tonnes in 2001 (-4.8%). The reduction will take place both in the steam sector, which will fall below the level of 1999, and in the coking coal sector.

**EU total inland deliveries of hard coal (million tonnes)**

	<b>1999</b>	<b>2000</b>	<b>2001</b>	<b>1999/2000 % Difference</b>	<b>2000/2001 % Difference</b>
<b>Belgium</b>	9.8	9.6	9.6	-2.0	0.0
<b>Denmark</b>	8.0	6.7	5.5	-16.5	-17.6
<b>Germany</b>	69.2	67.4	65.1	-2.6	-3.4
<b>Spain</b>	35.2	37.1	35.5	5.6	-4.4
<b>France</b>	24.3	22.2	21.0	-8.4	-5.5
<b>Greece</b>	1.2	1.0	1.1	-15.6	3.9
<b>Ireland</b>	2.2	2.8	2.7	26.0	-4.1
<b>Italy</b>	17.4	18.0	19.9	3.2	10.6
<b>Luxembourg</b>	0.1	0.2	0.2	62.9	-9.4
<b>The Netherlands</b>	11.7	15.5	15.5	32.8	0.0
<b>Austria</b>	3.8	3.7	3.4	-2.3	-7.8
<b>Portugal</b>	6.1	6.4	5.7	4.7	-10.2
<b>Finland</b>	3.6	4.6	4.3	27.6	-6.4
<b>Sweden</b>	2.9	3.1	3.0	5.3	-1.5
<b>The United Kingdom</b>	57.7	58.9	52.5	2.1	-10.8
<b>EUR-15</b>	253.2	257.2	245.0	1.6	-4.7

Total demand in the main sectors of consumption is as follows:

**EU inland deliveries of hard coal /million tonnes**

	<b>1999</b>	<b>2000</b>	<b>2001</b>
Total inland deliveries	<b>253.2</b>	<b>257.2</b>	<b>245</b>
Out of which			
Power plants	174,1	181.6	174.2
Coke ovens	47.3	51,0	47,8
Iron & steel	11,0	8,7	8,7
Other industry	14,8	11,6	10.7
Domestic heating	6.0	4.2	3.6

The following table represents overall steam coal imports in the European Union.

**Imported Steam Coal Demand Europe 2000 and 2001/million tonnes**

<b>Country</b>	<b>2000</b>	<b>Diff. %</b>	<b>2001</b>
Belgium	5.2	0.0	5.2
Denmark	6.2	- 0.5	5.7
Finland	3.4	- 0.7	2.7
France	10.3	- 1.2	9.8
Germany	18.9	1.0	19.9
Greece	0.9	0.0	0.9
Ireland	2.9	0.0	2.9
Italy	9.9	0.5	10.4
Netherlands	9.0	1.0	10.0
Portugal	5.4	-0.4	5.0
Spain	17.5	-2.0	15.5
Sweden	1.0	0.1	1.1
United Kingdom	13.4	1.0	14.4
<b>Total EU</b>	<b>104.0</b>	<b>- 0.5</b>	<b>103.5</b>

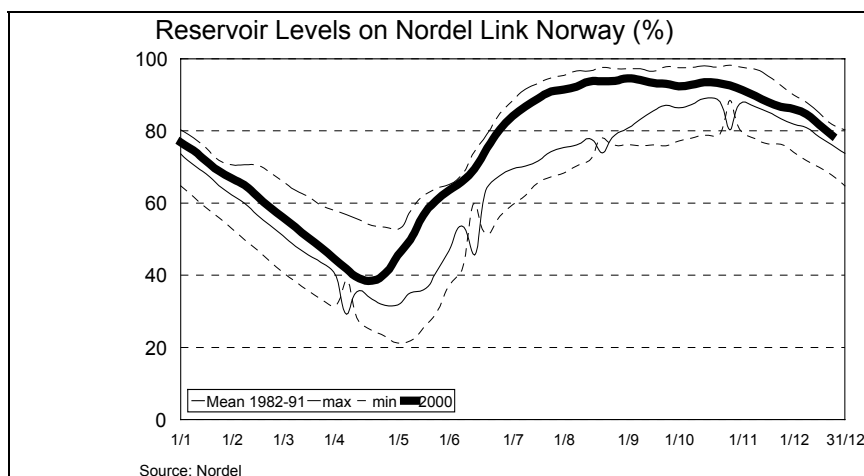
*Source Steam Coal Forecaster*



In the following section of the report, steam coal imports is analysed on the basis of each geographical area sub-divided into its constituent Member States.

### 5.3 Scandinavia

The last quarter of 2000 finished with a lower level of coal-burn, with Scandinavian reservoirs unusually full right to the end of 2000. This means that Denmark's burn has been lower than had been anticipated, whilst the smaller Scandinavian coal buyers have also seen less need to import. Only Finland saw a significant increase in generation, which led to a 1million tonnes increase in coal needs.



Historical and Predicted Scandinavian Demand: million tonnes

Country	1998	1999	2000	2001	2002
Denmark	8.1	7.7	6.2	5.7	5.2
Finland	3.3	2.4	3.4	2.7	2.7
Norway*	0.8	0.7	0.7	0.7	0.7
Sweden	1.4	1.1	1.0	1.1	1.1
<b>Total</b>	<b>13.6</b>	<b>11.9</b>	<b>11.3</b>	<b>10.1</b>	<b>9.7</b>

\* Non EU Source 'Steam Coal Forecaster'

#### 5.3.1 Denmark

The abundance of cheap power being produced in Northern Scandinavia reduced the quantity of coal-fired generation in Denmark, particularly in the second half of the year.

Prices for power stayed low through the winter, with the system average in December as low as DKr138/MWh, the lowest price for December since records began in 1996. As well as

being unusually wet, the winter in Denmark was very mild. This affected domestic demand for both power and domestic heat, which further reduced the coal-burn.

Imports by the end of October 2000 were 1million tonnes down on the levels of the previous year, with little apparent chance of recovering in the final two months. Imports are estimated to have fallen by 1.5million tonnes in 2000, from 7.7million tonnes to 6.2million tonnes.

The pattern of imports also changed in 2000. Australian spot sales made late in 1999 tailed off in 2000. Colombian shipments fell by 39%. The biggest cut in shipments came in supplies from Poland, which were down 840,000t, 30%, in January-October.

South Africa's shipments remained unchanged at 1.5million tonnes with Russian shipments growing from 675,000t to 1million tonnes.

#### Denmark's imports: '000kt

January-October	1999	2000	% Change
<b>Australia</b>	323.5	142.1	-56
<b>China</b>	123.6	--	-100
<b>Colombia</b>	1,111.5	675.1	-39
<b>Norway</b>	--	60.6	--
<b>Poland</b>	2,824.1	1,984.4	-30
<b>Russia</b>	675.2	1,018.9	+51
<b>South Africa</b>	1,515.7	1,526.4	+1
<b>US</b>	--	69.8	--
<b>Venezuela</b>	--	102.0	--
<b>Total</b>	<b>6,602.4</b>	<b>5,571.3</b>	<b>-16</b>

Source: Statistics Denmark

The outlook for demand in 2001 foresees no change from 2000.

Coal burn will be reduced in part by replacement with biomass and gas and by the closure of plants which are not fitted with FGD. Availability of hydro power will also have further impact on coal burn.

#### Danish Imports: million tonnes

1998	1999	2000	2001
8.1	7.7	6.2	5.7

Source Steam Coal Forecaster / European Commission

### 5.3.2 Sweden

Apart from small increases in PCI demand, there is little prospect of major growth in coal demand in Sweden. Although a unit of the Barsebaek nuclear power station has closed, the feeling amongst Swedish analysts is that the closure would benefit hydro and imported power before it did coal. Coal-fired power remains at the margin of the Swedish system and is consequently open to substantial fluctuation around a very low level.

**Swedish Imports: million tonnes**

1998	1999	2000	2001
1.4	1.1	1.0	1.1

*Source Steam Coal Forecaster / European Commission*

### 5.3.3 Finland

By the end of September, volumes were over 1million tonnes ahead of the levels of the previous year, at 2.6million tonnes. However, there were signs that the rapid increase moderated towards the end of the year.



The levels of domestic generation in the final quarter of 2000 fell, as imports from Russia and the rest of Scandinavia accelerated. As a result, production from condensing boilers, which account for much of Finland's burn, which had been 20% ahead of year-ago levels in mid-year, are now estimated to be more than 5% down for the year.

### Finland's power supply: 2000 vs 1999 (TWh)

	Jan – Nov 1999	Jan-Nov 2000	% change
Gr.consumption	70.5	72.0	+2.2
Hydro/Wind output	11.5	13.2	+14.0
Nuclear	20.1	19.6	-2.5
CHP/Cogen	22.3	22.4	+0.3
Condensing	6.1	5.7	-6.1
Total production	60.0	60.8	+1.4
Imports	10.5	11.2	+7.1

Source: Finnish Electricity Association

Availability of hydropower means that, as with Denmark, levels of coal-fired generation will be lower in 2001 than 2000.

### Finland Imports: million tonnes

1998	1999	2000	2001
3.3	2.4	3.4	2.7

Source 'Steam Coal Forecaster' / European Commission

#### 5.4 North West European Markets

With uncertainty surrounding gas prices, prospects for coal demand are extremely difficult to forecast. Having increased substantially in 2000, pressure for increased coal-burn in Belgium have eased, but German, Dutch and UK demand for coal remains firm.

Predicted North West European Steam Coal Demand million tonnes					
Country	1998	1999	2000	2001	2002
Belgium	7.0	5.7	5.2	5.2	5.0
France	9.6	11.3	10.3	9.8	7.8
Germany	17.2	18.1	18.9	19.9	21.9
Ireland	2.9	2.9	2.9	2.9	2.9
Netherlands	10.6	8.0	9.0	10.0	10.0
UK	10.3	12.1	13.4	14.4	16.0
<b>Total</b>	<b>57.6</b>	<b>58.5</b>	<b>60</b>	<b>61.0</b>	<b>63.6</b>

Source 'Steam Coal Forecaster'

##### 5.4.1 Belgium

With substantial diversity of fuel dependence, Belgium is well placed to take advantage of any change in the relative competitiveness of different fuels. Coal gained market share at the

expense of other fuels in 2000 and by mid-year, imports were slightly ahead of the levels of the previous year.

The strength of coal's competitive position against gas could result in coal imports for 2001 remaining at 2000 levels.

Electrabel assumes purchasing responsibility for its Dutch subsidiary in the middle of 2001, which has implications for Belgium's requirements in 2002. The older coal-fired stations in Belgium may find themselves competing for market share with their Dutch sister, as well as with imported power from elsewhere.

#### Belgian Steam Coal Imports: million tonnes

1998	1999	2000	2001
7.0	5.7	5.2	5.2

Source Steam Coal Forecaster

#### 5.4.2 France

The pace of coal-burn in France in the latter half of 2000 slowed down, thanks to continued improvement in nuclear power generation and a late-year surge in hydro production. In addition, the pace of coal imports has begun to moderate as a consequence of this. Stocks are now building and therefore coal imports into France in 2001 are expected to fall by 1.5 million tonnes when compared with 2000.

Current French Power and Coal Industry Trends			
Net Production TWh	1999	2000	% change
Hydro	76.7	72.0	- 6.1
Nuclear	374.9	395.0	5.4
Thermal	48.7	50.0	2.7
<i>Of which coal</i>	26.9	25.6	- 4,8%
<b>TOTAL</b>	<b>500.3</b>	<b>517.0</b>	<b>3.3</b>
Net Exports	63.1	69.4	10.0
<b>Hard Coal production (million</b>	<b>4.5</b>	<b>3.2</b>	<b>- 30.2</b>
<b>Hard Coal Consumption</b>	<b>23.9</b>	<b>23.0</b>	<b>- 3.8</b>
<b>(million tonnes)</b>			
<i>Of which power</i>	11.1	10.4	- 6.3
<i>Of which EDF</i>	7.3	6.3	-13.7
Imports (All Coal)	<b>19.1</b>	<b>20.6</b>	<b>7.9</b>

Source: Ministry of Economics, Finance and Industry; Charbonnages de France.

Rising stocks in winter inevitably means that there will be stock-draw in 2001.

Accepting the uncertainty of making any long-term projection of French growth, the main factor to watch is probably French electricity consumption. Previously growing at 3.7% a

year, the pace of change has been slowing since the beginning of 2000 and with economic growth also predicted to slow, can be expected to continue decelerating.

Overall it is predicted that coal use and - by implication - coal imports, will fall.

**French Steam Coal Imports: million tonnes**

1998	1999	2000	2001
9.6	11.3	10.3	9.8

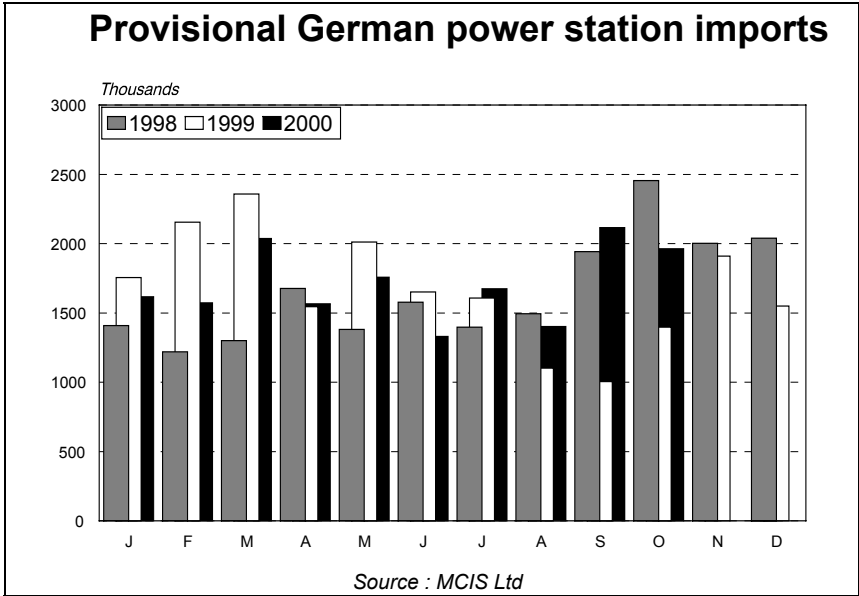
Source 'Steam Coal Forecaster'

5.4.3 Germany

In 2000, after a slow start, import levels built up in September/October with the result that imports increased in 2000 over 1999.

Fear of over-exposure to the increasingly violent fluctuations in the power market has pushed German buyers into relying on forward power prices as their gauge as to whether or not they should enter the international coal market. German coal is giving buyers their core volumes, with spot coal coming in when the power market points to an opportunity to burn. This approach to business is being facilitated in particular by the use of forward coal price agreements.

Power prices in Germany fell with the liberalisation of the European market, with the sector becoming the focus of cheap offers of excess hydro electricity from Scandinavia and the Alpine countries. The generators have consequently become deeply sensitive to shifts across the European power spectrum, along with weather-associated changes in local demand for power.



The German coal industry closure programme will result in reductions in output in 2001 of some 10 million tonnes when compared with 1999. This will provide an opportunity for increased coal imports.

### German Steam Coal Imports: million tonnes

1998	1999	2000	2001
17.2	18.1	18.9	19.9

Source ' Steam Coal Forecaster

#### 5.4.4 The Netherlands

At the end of the first half of 2000, thermal power generation had increased on levels of the previous year. The key reason for higher generation was a substantial increase in local demand for power.

Further demand growth in 2001 is expected, with a beneficial impact on coal consumption. Although there will be competition from the high availability of cheap power elsewhere in Europe and small-scale CHP construction, coal-fired generation is set for further growth in 2001.

Dutch Power Market Trends TWh			
	H1 1999	H1 2000	% Change
Thermal generation	24.4	25.1	2.9
Nuclear generation	2.0	1.9	-0.9
Auto production	15.0	16.0	6.9
Total generation	41.3	43.1	4.2
Imports	10.7	10.9	1.7
Exports	2.2	2.2	-2.2
Demand	49.8	51.8	4.0

Source: Statistics Netherlands

The Dutch regulator has introduced auctions of import power capacity, to be run by the grid company Tennet, and these are expected to at least moderate import growth trends. In addition, there remains the clear advantage that Dutch plant is modern, relative to its rivals in Belgium and Germany. The new owners of Dutch stations look certain to seek to recover their investments by running their plant as hard as they can.

As a consequence, coal imports are expected to grow in 2001. In 2002, coal requirements will be close to their limit implying stability in demand in 2002.

### Netherlands Steam Coal Imports: million tonnes

1998	1999	2000	2001
10.6	8.0	9.0	10.0

Source 'Steam Coal Forecaster'

#### 5.4.5 United Kingdom

In 2000, the UK market showed greater change than any other market. The New Electricity Trading Arrangements were introduced in the UK on 27 March 2001. There is substantial uncertainty surrounding developments in the UK electricity and gas markets, as the impact of the NETAs becomes apparent.

The steam coal market is actually growing for the first time in decades, with power station consumption 15% ahead by the end of November 2000 at 41.2 million tonnes. Meanwhile, UK indigenous suppliers are struggling to keep up with demand. By the end of November, according to Coal Authority figures, UK production was 17% down on the levels of the previous year at 27.6 million tonnes. This indicates that UK supply is now short of demand, although there is room for expansion in local supply during 2001 and 2002.

Two collieries - Clipstone and Ellington - spent most of the year 2000 either awaiting closure or being developed for a return to full production. Their return in February 2001 will add 0.5-1 million tonnes to supply over the year.

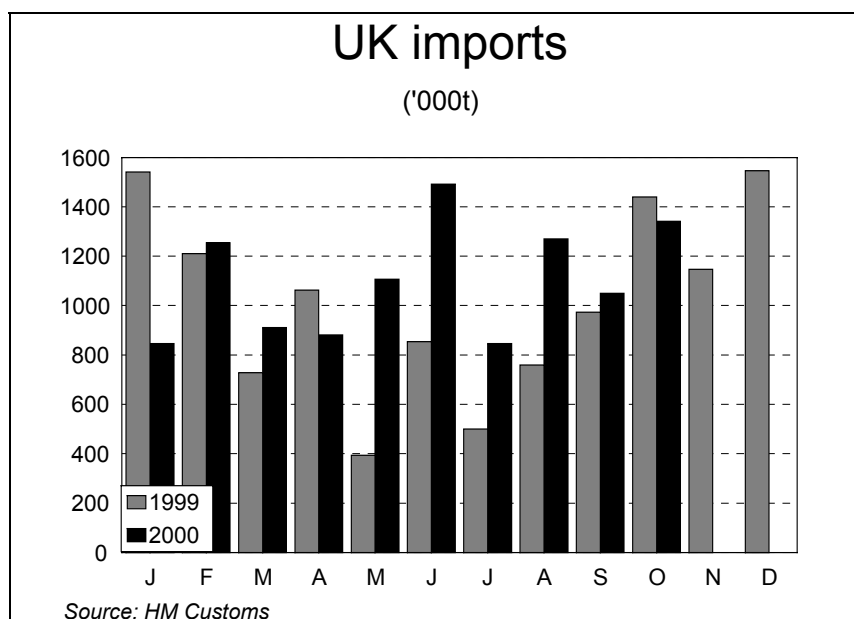
In 2002, Scottish Coal's Longannet deep mine is expected to recover after a prolonged period of redevelopment. This should increase deep-mined Scottish production from the current 0.75 million tonnes to 1.5-2 million tonnes.

A surge in buying, from the second quarter of 2000 onwards, saw UK import growth accelerate.

It is anticipated that, based upon current generator buying patterns, there will be further growth in imports in 2001. There are some uncertainties, however, about the way the electricity market will function and this could work against coal fired generation.

On the downside, British Energy has pledged to increase its nuclear output by 10% in 2001. This implies that an additional 6TWh of base load power, equivalent to about 2.5 million tonnes of coal-burn, will be coming into the power market. In addition, there are gas-fired stations coming on-line. In 2001, it is calculated that 5.4GW of gas-fired plant will be commissioned. Even operating at as low a load as its fuel supply arrangements are likely to allow, this plant could still displace 10 million tonnes/yr of coal-burn. This is likely to be counterbalanced, however, by existing gas-fired plants being operated at lower levels within the constraints of their gas supply contracts.





On the positive side, the UK power market is still growing. In 2001, growth in the market of 1-2% is anticipated, driving generation requirements up by another 1.5-3 million tonnes of coal equivalent.

Inside that market, NETA is expected to help coal-fired generation. The manner in which companies are rewarded for generating will be changed. The cheapest generator is paid at whatever price it bids into the market, instead of being paid the same price as was bid by the marginal operator. There is no doubt that coal-fired power is the cheapest on the grid at the moment. Gas station operators will probably minimise their exposures to fuel and power price risk by generating as little as their supply agreements will allow. The forward curve of gas prices indicates that these stations will struggle to beat coal even in the UK summer, which is when demand and prices for the fuel are lowest.

Taking all these factors into account a growth in coal demand is likely. The level of this increase should be in the order of 2 million tonnes.

When analysing the level of imports for 2001, there are several factors to be considered.

Growth in UK output of coal is likely to be modest and imports will be required to meet the increased demand for coal.

Furthermore, there is clearly further incentive to import lower sulphur coal (less than 1%) to satisfy the SO<sub>x</sub> requirements of the Environment Agency, a drive that will remain for as long as there is no new FGD construction.

In addition the means to import are improving, with new port facilities already in place at Immingham. Greater competition in the railway sector is likely to prevent serious rises in infrastructure costs.

Import levels in the first two months of 2001 are well ahead of the figures for 2000; 4.6 million tonnes compared with 2.1 million tonnes. This points to a significant increase in imports for 2001 overall.

### UK Steam Coal Imports: million tonnes

1998	1999	2000	2001
10.3	12.1	13.4	14.4

Source 'Steam Coal Forecaster'

#### 5.4.6 Ireland

Ireland's coal-burn remains focused upon the Moneypoint power station, which operates at base load and consequently has little room for expansion. The outlook is for a small decline because the industrial and house coal markets in Ireland are shrinking in response to smokeless zone impositions in Ireland's main cities.

### Irish Steam Coal Imports: million tonnes

1998	1999	2000	2001
2.9	2.9	2.9	2.9

Source 'Steam Coal Forecaster'

#### 5.5 Iberian Markets

Throughout Iberia the outlook for demand has been completely changed by the weather. Up until October/November, coal-fired generation was needed to counter the lack of hydro generation and imports were expected to stay at the high levels of 1999 and 2000. Since that time, however, the rains fell at well above average levels through the winter, raising hydro output and removing some coal-fired generation from the systems of both Portugal and Spain.

There is considerable uncertainty regarding the level of coal-fired generation in Portugal and Spain, which will have an impact on the level of imports. The level in 2001 is forecast to fall to the level seen in 1999.

### Predicted Iberian Steam Coal Imports: million tonnes

Country	1998	1999	2000	2001	2002
Portugal	4.6	5.8	5.4	5.0	5.0
Spain	10.5	15.0	17.5	15.5	16.5
<b>Total</b>	<b>15.1</b>	<b>20.8</b>	<b>22.9</b>	<b>20.5</b>	<b>21.5</b>

Source 'Steam Coal Forecaster'

#### 5.5.1 Portugal

Extensive rain during the final quarter of 2000 has meant that assumptions of stability in Portuguese coal-burn must be revised. In 2000, Portugal experienced its wettest December in 50 years and, as a result, hydro levels are up to peak.

Because hydropower comes into the generating merit order ahead of coal, coal-burn has consequently been reduced.

**Portugal Steam Coal Imports: million tonnes**

1998	1999	2000	2001
4.6	5.8	5.4	5.0

*Source 'Steam Coal Forecaster'*

**5.5.2 Spain**

High rainfall has replenished what had been unusually low reservoirs and rivers in Spain, meaning that hydro generation in December was running 65% ahead of the levels of the previous year. With the exception of nuclear energy, all other forms of electricity production were reduced as a consequence.

In December, all coal-fired generation was down by 24% on the levels of the previous year, with generation from imported coal down by 15%. Over the year as a whole, however, coal-fired generation, both overall and imports only, was up by 6%.

### Spanish Generation Mix TWh

Generation	12/99	12/00	% (+/-)	1999	2000	% (+/-)
Hydro	2.8	4.6	65	24.2	27.7	15
Nuclear	5.6	5.8	3	58.9	62.1	5
Local Coal	3.0	2.2	-26	38.2	39.4	3
Imported Coal	1.0	0.8	-15	12.9	13.6	6
Lignite	2.0	1.5	-26	21.3	23.3	10
Natural Gas	0.3	0.3	-10	3.1	4.5	47
HFO	0.4	0.2	-41	6.8	5.7	-16
Own Consumption	-0.6	-0.6	-10	-7.2	-7.8	8
Auto Producers	2.4	2.6	12	24.2	27.5	14
<b>Total Net Generation</b>	<b>16.9</b>	<b>17.5</b>	<b>4</b>	<b>184.3</b>	<b>195.7</b>	<b>6</b>
Exports	0.4	0.3	-41	5.7	4.4	-23

Source: REE

In 2001 and, without a relaxation in the rains, it is estimated that Spain's import requirement could fall by nearly **2.0 million tonnes**.

### Spanish Steam Coal Imports: million tonnes

1998	1999	2000	2001
10.5	15.0	17.5	15.5

Source 'Steam Coal Forecaster'

#### 5.6. Mediterranean Markets

Modest growth in coal demand is anticipated in Italy as a consequence of growth in electricity demand and coal gaining marginally at the expense of oil-fired generating capacity.

A stable picture is foreseen in Greece.

**Predicted Mediterranean demand: million tonnes**

<b>Country</b>	<b>1998</b>	<b>1999</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>
Greece	1.6	0.9	0.9	0.9	0.9
Italy	9.6	9.4	9.9	10.4	10.9

*Source 'Steam Coal Forecaster'*

**5.6.1 Italy**

Italian imports were marginally ahead of the levels of the previous year in the first three quarters of 2000.

Thermal power production was 7.5% ahead by the end of October, at 185 TWh. Although HFO sales to the power sector were down substantially, by 9% in the same period, coal did little more than hold its own. Gas sales to the power sector increased by 21% and compensated for the fall in oil-fired generation.

It is anticipated that, with continuing high oil prices, oil-fired generation will be reduced to an absolute minimum to the advantage of coal imports in 2001. However, the increase is likely to be modest - in the region of 0.5 million tonnes.

**Italian Steam Coal Imports: million tonnes**

<b>1998</b>	<b>1999</b>	<b>2000</b>	<b>2001</b>
9.6	9.4	9.9	10.4

*Source 'Steam Coal Forecaster'*

**5.6.2 Greece**

With the large bulk of Greek coal imports going into cement making, the scale of demand to serve this market rarely changes. Unless there is a substantial increase in petroleum coke prices, which is not expected, this is expected to remain the case.

**Greek Imports: million tonnes**

<b>1998</b>	<b>1999</b>	<b>2000</b>	<b>2001</b>
1.6	0.9	0.9	0.9

## 5.7 Steam Coal Price Settlements 2000 and 2001

### 5.7.1 Europe

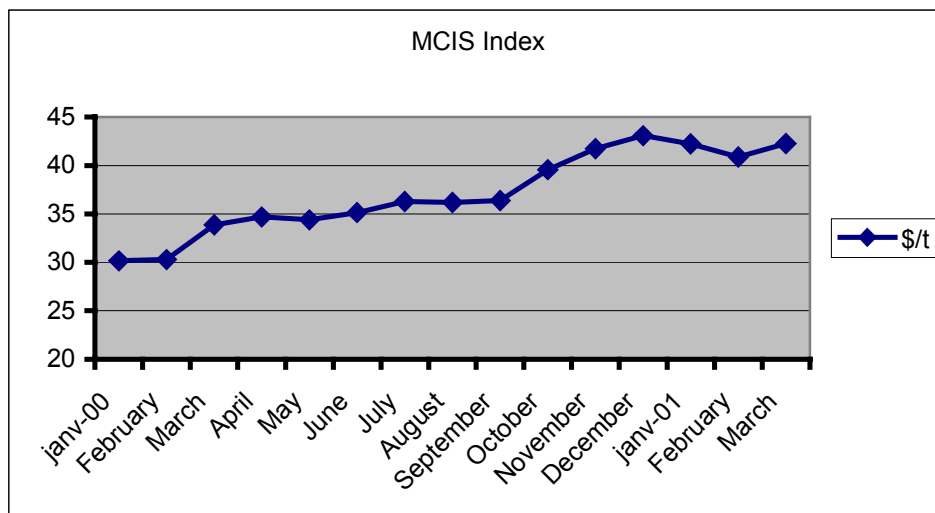
In Europe, steam coal prices began to increase on a delivered basis in the latter part of 1999, as a consequence of the strengthening shipping market.

Coal sellers' lack of confidence in the strength of the market meant that coal price aspirations were muted until February/March 2000, when the increased demand for coal started to make an impact. Increased exports from Russia also restrained price growth.

From February onwards, FOB prices from all the major suppliers have increased and delivered prices rose until the end of 2000, when falling freight rates caused delivered prices to fall.

The MCIS index illustrates the manner in which delivered steam coal prices fluctuated during 2000 and the early months of 2001.

**The MCIS Index Jan 2000 – March 2001**



*Basis Delivery NW Europe 6000 kcal/kg nar*

The softening in freight rates, seen in February, was counter-balanced by increasing FOB prices, which have restored delivered prices to similar levels to those in January.

Factors leading to this are the continuing strength of the Asian market and the insatiable demand for steam coal in the USA.

A factor that has exacerbated the rise in prices in the Atlantic market has been the shortage of domestic supplies of coal within the USA. This, combined with low stock levels at US utilities, has forced generators to seek supplies of imported coal from South America, South Africa, Poland and Russia.

A degree of panic buying in the market by the US utilities saw FOB prices of South American coal into the USA reaching \$44 before easing.

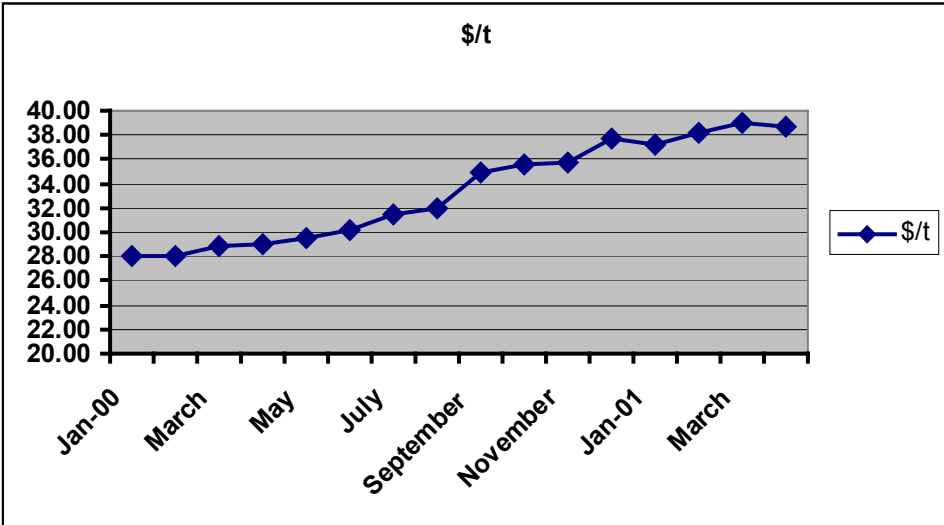
High gas prices have worked in favour of coal. The easing in the pace of growth of the US economy, with GDP growth predicted to be 1.8% in 2001, should reduce the pressure on energy prices in the US which will then impact on the traded coal market in the Atlantic region. The need, however, to build up stock levels combined with an inability to expand coal production quickly will result in a strong US market throughout 2001.

5.7.2 Asia

In the first half of 2000, increased quantities of Chinese coal restrained FOB prices from the competing supply regions of Australia and Indonesia. Whilst unable to escape the impact of increasing freight FOB, prices remained subdued. Increasing demand and an easing of Chinese export efforts resulted in a rapid rise in FOB prices in the second half of 2000, as witnessed by the MCIS Asian Index.

The settlement of a price for long-term contracts into Japan for the 2001 coal year has seen the guide price rise from \$28.75 to \$34.50. Whilst significant tonnage is discounted from this guide price (c. \$1.25), it represents a 20% increase.

**MCIS Asian Marker January 2000 to February 2001**



Basis FOB Load Port 6000 kcal/kg nar

### 5.7.3 The USA

Since 1997, the USA has exported decreasing quantities of steam coal into the European market and its impact on traded coal prices has been slight.

Within the USA, burgeoning gas prices and increasing electricity demand as a result of strong economic growth has increased demand for coal for generation. A cold winter and a policy of operating with low stock levels fuelled this surge in the demand for coal.

Coal producers faced with poorer returns over the 90's have operated with minimum surplus capacity and small coal operations have been forced out of business.

Faced with an increase in coal demand, producers have been unable to satisfy demand and prices have risen dramatically. Appallacian compliance coal has risen from a price of \$25 per short ton (2000lbs) at the mine to \$45. Powder River Basin coal has risen from \$4 per short ton to \$12 per short ton for recent sales.

Buyers with access to import facilities have turned to imported coal in order to meet their requirements. Prices as high as \$44 FOB have been paid for Venezuelan coal, which would equate to a delivered price into Europe of \$46 for a coal with a calorific value of 6000 kcal/kg nar.

It is anticipated that this shortage of coal will continue for most of 2001, whilst the utilities endeavour to build up stocks and producers attempt to bring on extra production.

Attempts to increase production are being hampered by restrictions to open cast mountain top mining schemes and a lack of trained underground workers.

The USA is therefore giving South American and other coal producers a home for coal that would normally be destined for the European market. Prices can be expected to remain high as long as US coal demand is strong.

With domestic prices high, there is no incentive for US coal producers to export, although they may do so just to retain a toehold in the market. The impact of US pricing on coking coal is covered in the section on coking coal.

## **6. THE MARKET FOR COAL AND COKE FOR THE STEEL INDUSTRY**

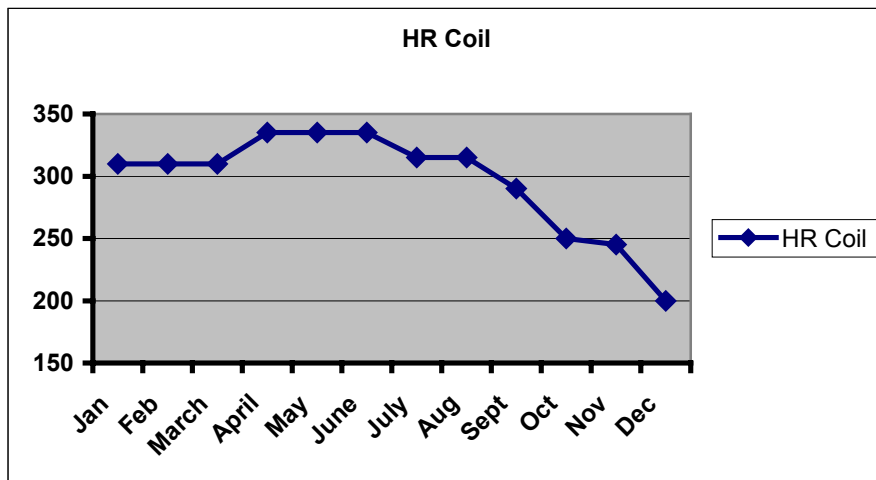
### 6.1 Overview

The year 2000 was a year of high activity for the European steel industry. Steel product prices, however, fell in the latter half of the year as the impact of large tonnages of imported steel fed into the market.

The key hot rolled coil price fell from a peak of \$335 in June to \$200 in December 2000.



## Hot Rolled Coil World Market Spot Prices ECSC Mills 2000 \$/t



Source: Data derived from 'Metal Bulletin'

There are signs of a modest improvement in early 2001, but prices are well below their peak in 2000.

Steel output was high throughout 2000 and, as a consequence, blast furnace iron output was high. Coke oven output is relatively inelastic and extra carbon units have, in the main, come from increased PCI levels and coke importation.

The downturn in the world's economy will result in lower steel demand in 2001, as consumers attempt to control their inventories.

Within the European Union, rationalisation in the steel industry is forging ahead. The merger of Arbed's and Usinor's steel interests will see production concentrated in fewer major centres. Whilst initially the impact on coal usage is likely to be slight, the long-term prospect must be for reduced iron output and lower coal and coke requirements.

The use of coal for the manufacture of coke is predicted to stay relatively static in 2001 when compared with 2000 with the exception of Germany and the United Kingdom where major changes are occurring in the steel sector and for Germany, also in the domestic coal industry.

### 6.2 The United Kingdom

Corus has announced the closure of the Llanwern works in South Wales and rolling capacity reductions at its Redcar works. Surplus steel from the Redcar works will feed other UK steel plants within the group.

The loss of the Llanwern works will mean the closure of coke oven batteries. Coking coal requirements will fall by 1.2 million tonnes per annum post closure.

Corus refurbished the Redcar blast furnace in 2000 and iron output for that year in the United Kingdom fell as a consequence. The coking plant at Redcar remained operational and Corus exported coke in order to control inventories.

### 6.3 Germany

Steel production in 2000 was well ahead of 1999. The extra carbon requirements of the blast furnaces were met by the importation of coke, predominantly from Poland.

The closure of the Kaiserstuhl coking plant went ahead in December 2000, reducing coking coal requirements for 2001. Coke requirements are forecast to rise in 2001 and as a consequence coke imports will also rise.

Imports of coking coal increased marginally in 2000, when compared with 1999. Further increases can be expected in 2001 as a result of the continuing programme of production reduction.

### 6.4 Blast Furnace Iron Output

The following table shows the European Union's iron output in 1999 and 2000.

**Blast Furnace Iron Output ECSC 1999/2000 in thousand tonnes**

	<b>1999</b>	<b>2000</b>	<b>% 00/99</b>
Austria	3913	4318	10.3
Belgium	8430	8471	0.5
Finland	2954	2983	1.0
France	13852	13920	0.5
F.R.Germany	27934	30845	10.4
Italy	10621	11223	5.7
Luxembourg			
Netherlands	5307	4970	-6.3
Portugal	389	380	-2.3
Spain	4058	4059	0.0
Sweden	3212	3145	-2.1
United Kingdom	12139	10890	-10.3
<b>Total</b>	<b>92810</b>	<b>95205</b>	<b>2.6</b>

Source IISI

**Blast Furnace Iron Output ECSC Jan/Feb 2001 in thousand tonnes**

	<b>Jan</b>	<b>Feb</b>	<b>% 01/00</b>
Austria	385	345	+9.6
Belgium	767	680	0
Finland	249	224	-8.2
France	1157	1050e	-3.0
F.R.Germany	2655	2400e	+0.2
Italy	939	871	-3.5
Netherlands	329	418	-18.5
Portugal	30e	30e	0
Spain	363	311	-6.3
Sweden	311	299	+8.9
United Kingdom	942	828	-24.0
<b>Total</b>	<b>8125</b>	<b>7456</b>	<b>-3.2</b>

Source IISI

## 6.5 Coke Production and Imports

The following table represents the total coke production and imports within the European Union.

**Coke Production and Imports 1999 to 2001 in thousand tonnes**

	1999		2000		2001	
	Prodn	Imports	Prodn	Imports	Prodn	Imports
Belgium	3042	914	3100	841	3100	841
Denmark	0	48	0	20	0	35
Germany	8569	3945	9000	4100	7200	5900
Greece	0	40	0	3	0	0
Spain	2334	123	2470	128	2300	80
France	5120	1157	5226	1344	5200	1300
Ireland	0	87	0	25	0	20
Italy	5150	249	4955	506	4971	727
Netherlands	2424	577	2100	426	2100	426
Austria	1614	590	1550	590	1480	670
Portugal	363		371			92
Finland	900	136	795	479	790	474
Sweden	1122	345	1148	331		
U.K.	6062	440	6095	486	6071	494
<b>Total</b>	<b>36700</b>	<b>8651</b>	<b>36810</b>	<b>9279</b>	<b>33212</b>	<b>11059</b>

\* use of stocks

The forecasts for 2001 show a considerable increase in imports, with most of this increase coming from Germany and Italy.

#### Coke Use by the Steel Industry in thousand tonnes

	1999	2000	2001
Belgium	3701	3600	3600
Germany	11400	11700	12500
Spain	2087	2037	1960
France	5312	5387	5300
Italy	4820	5226	5220
Netherlands	1896	*1900	*1900
Austria	501	1986	1986
Portugal	234	246	62
Finland	1016	1249	1239
Sweden	1399	1392	1320
U.K.	6311	5936	5709
<b>Total</b>	<b>38677</b>	<b>40690</b>	<b>40796</b>

\*estimate

#### 6.6 Coal Use by the Steel Industry

##### Coking Coal and PCI Coal in the European in thousand tonnes

	1999		2000		2001	
	Coking coal	PCI	Coking coal	PCI	Coking coal	PCI
Belgium	3850	1250	3800	1250	3800	1250
Germany	10785	2300	11422	2500	9000	2500
Spain	3374	-	4130	-	4050	-
France	6500	1900	6971	2000	6800	2250
Italy	6960	900	7822	900	8732	1500
Netherlands	2208	975	2500	975	2500	1000
Austria	2156	-	2072	-	1920	-
Portugal	496	-	487	-	490	-
Finland	1238		1288		1280	
Sweden	1681	340	1813	450	1800	500
U.K.	8054	490	8697	550	7500	750
<b>Total</b>	<b>47302</b>	<b>8155</b>	<b>51002</b>	<b>8625</b>	<b>47872</b>	<b>9750</b>

Source McCloskey Group/ European Commission

Total coal used by the steel industry for the manufacture of coke is predicted to fall in 2001, as a result of coking plant closures in Germany and the United Kingdom.

Total coal injected into blast furnaces shows a slight increase as a result of steadily improving technical performance in this area.

#### 6.7 Coking Coal Supply

Supplies of coking coal have been increasing from Australia and Canada at the expense of supplies from the USA and Poland.

The move away from US coal has occurred because higher ex-mine costs have disadvantaged this coal, when compared with cheaper mining costs in Australia and Canada. A further factor has been that higher productivity levels in large blast furnaces require coke with characteristics obtained from the use of Australian and Canadian coals. Internal rationalisation of the Polish coal industry has resulted in less coking coal being available for export. Coking coal has moved into Poland's own coking plant, from where it has been exported as coke to near neighbours.

The move away from US coal is expected to continue as demand within the USA for coal for electricity generation takes coal from the export to the domestic market.

#### 6.8 Coking Coal Price Settlements 2001

Following the pattern set in previous years, the first pricing settlements for the 2001 coal year were concluded in Japan with Australian and Canadian producers.

The average price for prime coking coal sold into Japan for the 2000 coal year was c. \$38.50 per tonnes FOB Australia. Strong demand for coking coal resulted in the Japanese concluding settlements with the Australians at a price of c. \$42.50 per tonnes for 2001. This was in spite of the Japanese indicating that iron output would be much reduced in 2001. The Canadians quickly settled at similar levels.

The Australians, having set the price for the Asian market, moved to Europe and a series of settlements were concluded in March and April.

In 2000, a typical price in Europe for a prime coking coal was equivalent to \$36.00 per tonnes FOB Australia. This followed previous practice where the Australians discounted prices to Europe to account for higher freight costs. For 2001, the Australians sought and won prices of c. \$45 per tonnes FOB, which is in excess of the Asian settlement level. The Canadian producers have settled at similar levels.

The pricing settlements in both regions reflect a tightening in the supply/demand balance of coking coal and a concentration in the number of sellers. Of more significance is the move towards a premium for the sales of coking coal into the European market.

The USA is still a significant supplier of coking coal into Europe, particularly high volatile, high fluidity coal. This coal, produced in the Appalachian coalfields, is also currently much in demand as a steam coal for the domestic electricity industry.

For 2001, US producers have been seeking and winning price increases of 25% for this type of coal when exported to the European steel industry. FOB prices for 2001 are in the region of \$55.00 to \$60.00, depending on the quality and time of price settlement.

## 7. OTHER MARKETS

Solid fuels are employed in two other major sectors; the domestic and the industrial sectors.

In both of these areas, solid fuel has been losing market share to gas. In the domestic sector, a major factor is the convenience associated with gas, whereas in the industrial market it has been driven by the lower costs that have been associated with modern gas-fired plant.

There is evidence to suggest that in the coming year the speed of decline in the industrial sector will be reduced because of the increased price of natural gas. In the UK, redundant coal-fired plant is being re-activated to take advantage of the lower relative cost of coal.

Use of coal in cement manufacture will increase in 2001, replacing petroleum coke because of its current high prices.

### Use of hard coal in the Domestic and Industrial Sectors – million tonnes

	1999	2000	2001
Domestic	6.0	4.1	3.6
Patent Fuel	1.0	0.8	0.6
Industrial	13.3	10.4	9.7

The largest users of solid fuel for domestic applications are the UK, France, Germany and Ireland. Decline in these two countries is expected to continue since this part of the market is less price sensitive than the industrial sector.

### Use of hard coal in the Domestic sector in thousand tonnes

	1999	2000	2001
UK	2870	1892	1800
France	1200	629	-
Germany	700	700	600
Ireland	342	310	300

**SECTION C**

**COAL SUPPLY**



## 8. COAL SUPPLY

### 8.1 Coal Production within the European Union

The following table details actual and forecast hard coal production in the European Union for the period 1999 to 2001.

**Coal Production in the European Union 1999 to 2001 in thousand tonnes**

	1999	2000	2001
Germany	43848	37338	32680
Spain	15418	15026	14020
France	4534	3166	2334
United Kingdom			
<i>Opencast</i>	15283	13564	14000
<i>Deepmined</i>	20897	17611	19000
<b>Total</b>	<b>99980</b>	<b>86705</b>	<b>82034</b>

These figures indicate that the steady decline in production will continue over the period as all the countries in the Union move towards viable coal industries

#### 8.1.1 Germany

Coal production fell in 2000 compared with 1999 as a result of closure of Ewald/Hugo at the end of April, Westfalen at the end of June and Goettelborn / Reden at the end of September. The pace of closure will ease in 2001 with only partial closing of the Blumenthal mine following its merger with the August Victoria mine.

Production in 2000 totalled 37.34 million tonnes compared with 43.85 million tonnes in 1999. Output in 2001 is anticipated to be 32.68 million tonnes.

#### 8.1.2 United Kingdom

##### 8.1.2.1 Deep Mine Sector

Only Calverton mine was closed during the year. The threat of closure at Clipsone and Ellington was averted as a consequence of the introduction of the new UK Coal Operating Aid Scheme. Most of the year was spent in developing new sections at these mines and production levels are only now returning to the levels that were planned. The Longannet mine in Scotland suffered problems in bringing its new mine area up to planned production levels. There are indications that these problems have been solved and that improved production levels can be expected.

Output from the deep mined sector was 17.61 million tonnes in 2000 compared with 20.90 million tonnes in 1999. Prospects for 2001 look better with several mines building up production levels after problems in 2000. UK Coal Plc (ex-RJB Mining) is seeking a 10% increase in production in order to meet increased levels of demand from the generators.

### 8.1.2.2 Open Cast Sector

The slow decline in open cast production continues. The major reason for this is the increasing environmental pressures, which are making planning permits more difficult to obtain.

Even in Scotland, where the planning authorities were more kindly disposed to open cast mining, the proportion of failed planning applications has increased.

Total production in the open cast sector fell from 15.28 million tonnes in 1999 to 13.56 million tonnes in 2000. A slight increase to 14 million tonnes is forecast for 2001.

### 8.1.3 France

Total output in 2000 fell to 3.166 million tonnes compared with 4.53 million tonnes in 1999. Production for the year 2001 is forecast to fall to 2.33 million tonnes. This is very much in line with the planned closure programme in the industry.

### 8.1.4 Spain

Output from domestic mines fell from 15.42 million tonnes in 1999 to 15.03 million tonnes in 2000. A further slight fall to 14.02 million tonnes is forecast for 2001.

## 9. COAL IMPORTS

### 9.1 Overall Level of Coal Imports into the European Union

Imports into the European Union are estimated to have grown from 152.2 million tonnes in 1999 to 164.9 million tonnes in 2000.

A further slight increase is forecast for 2001 with the major areas of growth being in Germany and Italy.

Review of the figures shows that import from South Africa, South America and Australia are growing.

### Coal Imports into the European Union in million tonnes

Country of Origin	1998 actual	1999 actual	2000 estimate	2001 forecast
USA	40.7	19.5	19.1	22.1
Canada	4.0	3.9	6.1	6.0
Australia	19.1	24.2	28.0	28.2
South Africa	29.0	32.1	35.2	38.4
Poland	18.4	15.0	20.3	18.4
CIS	5.5	6.1	9.3	9.0
China	2.7	1.6	1.8	1.6
Colombia	10.6	15.1	20.7	18.6
Others	10.4	34.8	24.5	23.9
<b>EUR-15</b>	<b>140.3</b>	<b>152.2</b>	<b>164.9</b>	<b>166.3</b>

South American and South African growth is from increased exports of steam coal, whereas Australian growth is from increased exports of coking coal.

These trends can be expected to continue, at least in the short-term, because high domestic demand in the USA is diverting coal from export markets. The USA is itself increasing imports of coal, predominantly from South America, in order to rebuild stocks.

#### 9.1.1 Steam Coal

Steam coal imports from the USA have been declining in response to competition from lower cost producers in South Africa and South America.

At the low pricing levels seen for the last three years, this trend was forecast to continue. The recent strengthening of prices would have, in normal circumstances, provided improved returns for US exporters and some increase in exports could have been expected. Shortages of coal within the USA have, however, pushed domestic prices to a level where even the increased levels in the international market are unattractive. Imports from South America into the USA have tightened the supply/demand balance in the Atlantic basin and as such are keeping prices buoyant.

With demand for coal within Asia high and FOB prices above equivalent European levels, it is unlikely that there will be any significant change in the levels of Australian steam coal exported to the European Union.

Imports from the CIS increased with year 2000 and are forecast to remain at current levels in 2001. The CIS countries have the potential to increase exports above predicted levels and could ease the tightness in supply that is currently being experienced.

### 9.1.2 Coking Coal

The low prices experienced in the market have produced a major restructuring of the coking coal industry.

The country experiencing the most change has been Canada, where two mines have closed and a further two mines are due for closure before 2002.

High demand from the steel industry in 2000 has put coking coal supply under pressure. There have been no new prime coking coalmines opened in the last two years and, even if new developments were initiated this year, little coal would be brought on stream in less than two years.

The tightness in supply within the USA is forecast to continue throughout 2001 and prices can be expected to remain high.

Whilst Australian and Canadian coking coal prices have also risen, it has been to a lesser extent than with US coal. The European steel industry will probably further reduce its use of US coal and increase the use of Australian and to a lesser extent Canadian coal, where it is technically possible.

Polish coking coal exports are falling. The high demand for coke means that it makes more sense to employ coking coal in making coke for export. Polish exports can be expected to continue to fall in line with the restructuring of the industry.

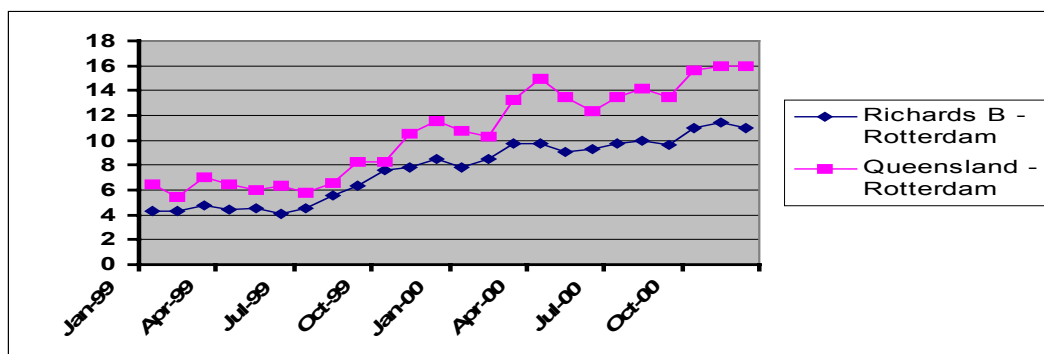
## 10. FREIGHT

### 10.1 Introduction

During 2000, the freight rates on all the major coal routes peaked in line with world industrial activity. Rates had started to rise in July 1999, however, they have softened since October 2000 and most forecasters expect rates to remain so until at least the third quarter of 2001.

This is illustrated in the following graph, which shows two of the most important freight rates, namely; Richards Bay to Rotterdam, which covers shipments of steam coal out of South Africa, and Queensland to Rotterdam, which covers shipments of coking coal out of Queensland into Europe.

**Freight Rates on Major Coal Routes 1999-2000 - \$/t**



Source Clarksons Research / McCloskey Group

## 10.2 The Prospects for 2001

The reasons behind the softening in rates is lower activity by the world's steel industry, which is particularly crucial in respect of the Cape sized vessels employed in the iron ore trade. This, in turn, has an impact on coal rates since a large proportion of the world's coal trade can also employ Cape sized vessels.

Another factor, which is particularly important in respect of the coal trade, is the large number of deliveries of new Panamax sized vessels which, it is estimated by Clarkson's 'Shipping Intelligence Weekly', will increase the size of the Panamax fleet by 7% in 2001.

The other trade that can have an impact on coal freight rates is grain shipment, which is carried out predominantly in Panamax vessels. Strong internal demand within China will reduce its ability to export grain. The vacuum will have to be filled with increasing volumes from the USA into Asia. This, to some extent, will help to take up some but not all of the increased Panamax capacity.

The Cape sized fleet by comparison is anticipated to grow by only 3% in 2001 and the level of new build activity is low.

The forecast is, therefore, that freight rates will be soft throughout most of 2001, with the possibility of a strengthening as of the latter part of 2001. To a large extent this depends on an improvement in the level of world industrial activity in the same time frame.

## 11. RATIONALISATION AMONGST COAL SUPPLIERS

### 11.1 Changes in Ownership

2000 saw some significant changes in the ownership of coal producing companies around the world.

During the year, the consortium of Glencore, Amcoal and Billiton purchased the 50% Carbocol stake in the Cerrejon Norte property in Colombia.

In Australia, Rio Tinto, through their Coal and Allied subsidiary, purchased the assets of Peabody.

In addition, Rio Tinto purchased the Lemington property and Glencore purchased the Ulan property, both from Exxon.

CQT sold their coal mining interests to CQCA. CQCA as a consequence had only two shareholders - Mitsubishi and BHP. Subsequently, BHP have sold a proportion of their stake in CQCA to Mitsubishi and incorporated the Gregory mine into the CQCA consortium. The result is that BHP and Mitsubishi hold 50/50 stakes in the enlarged CQCA. Mitsubishi will be given an enlarged role in marketing coal from what is the core of coking coal production in Australia.

This marks the final round in a series of coalmine sales in Australia,

Further rationalisation, such as the merger of BHP and Billiton, will have further impact on the structure of the industry, bringing together Billiton, the largest exporter of steam coal, and BHP, the largest exporter of coking coal, into one group.

The current strength of the coal market in the USA should result in companies such as Peabody finding new owners.

There is evidence of increased market rigidity, with a large proportion of steam coal and coking coal controlled by a few large minerals and trading companies.

## 11.2 Market Dominance

### 11.2.1 Steam Coal

In steam coal, four companies are emerging as dominant in the market namely

Rio Tinto

Amcoal

Glencore

BHP/ Billiton

These four companies control nearly 50% of the world's traded steam coal. The triumvirate of Amcoal, Glencore and BHP Billiton control in excess of 54% of the coal traded in the Atlantic basin through their ownership either singly or in consortia of major coal properties in South America and South Africa.

### 11.2.2 Coking Coal

In coking coal there is one major force, with BHP/Billiton controlling around 30% of the traded market. Of the remaining 70%, the next largest producer is Fording with only 6% of the market.

The major impact of this is likely to be more rigiditz in the market. The majority of the ownership of the world's coal export industry is in the hands of experienced and powerful mineral companies. Increasingly, it is probable that groupings will become stronger and the number of players smaller.

It will be difficult to avoid the impact of the world trading cycle on pricing, but prices are unlikely to fall to the same level as experienced in the past. The overall average price for both coking and steam coal is therefore likely to be higher in the longer term.

## 12. CURRENCY IMPACTS

The continuing weakness of the Euro against the US dollar means that imported coal prices have been inflated in Euro terms.

Sterling has also softened against the US dollar and as a consequence import prices have shown increases in sterling terms over and above the dollar related market escalation.

Australia is the world's largest exporter of steam and coking coal. With the Australian economy heavily reliant on commodity sales, the Australian dollar usually strengthens in line with the commodity cycle. The Australian dollar, however, has stayed weak throughout the latest upturn in commodity prices at c.\$A 0.5 = \$US1.00. The result of this has been that

Australian coal producers have not had to seek compensatory additional increases to coal prices in order to ensure increased margins in local currency terms.

In the longer term, a continuing weak Australian dollar reduces the pricing aspirations of the Australian producers because of improved prices in local currency terms.

It does, however, mean that the competitive position of the US producers is weakened since they cannot gain relief from a weakening currency.

South African and Canadian currencies are also weak compared with the US dollar giving producers from these countries similar benefits to the Australians.

### **13. COAL PRICE INDICES**

#### **13.1 General**

Coal price indices have a long history in the coal industry. Up until recently they have been used as a historical record and had limited commercial application.

The introduction of long-term contracts backing IPP (Independent Power Projects) coal contracts provided one of the first applications of pricing indices into the commercial arena.

In European IPPs, the most popular index employed to escalate coal prices within a coal contract has been the European Commission Index, whereas in Asia the most common form of indexation linked coal prices to the Japanese benchmark or guide price.

The emergence of financial instruments, such as options and coal contracts such as SECA, has placed a new importance on coal price indices.

Options have to be settled against a reliable indication of pricing at the time it matures. Similarly, in settling out a contract and not allowing it to go physical, there has to be a measure of the coal price at the time of settlement.

The best-known indices in the European market are the EU Index, the MCIS Index, the SACR Rotterdam Barge Index and the BAW Index.

#### **13.2 The European Union Index**

The EU Index is collated by the European Commission from returns submitted by all Member States. It covers only the delivered price of imported coal and records separately short term (less than one year) contracts and contracts which are longer than one year in duration.

All coal is corrected to a common calorific value of 7000 kcal/kg nar.

The index is auditable, but covers a wide range of destinations. It also is produced on a quarterly basis, but six months after submission of information from the generators.

### 13.3 The MCIS Index

The MCIS (McCloskey Coal Information Services) index is produced on a weekly basis, although until 2000 it was produced on a bi-weekly basis. The index relates to coal delivered into NW European ports in the maximum size vessel suited to those ports. It is collated from market information obtained by MCIS from buyers and sellers operating in the coal market. Information is obtained from all the major coal supply countries and weighted to account for the differing levels of trade applicable to them. It incorporates only the latest prices in its calculation.

All prices are adjusted to a common CV base of 6000 Kcal/kg nar.

### 13.4 The SACR South African Barge Price

The SACR barge price is produced by the ‘South African Coal Report’ and relates only to South African coal delivered into Rotterdam and then transferred to barge for inland European destinations. As with the MCIS index it records new business only.

It is produced on a monthly basis and relates to two coal grades with calorific values of 5900 and 6200 kcal/kg nar.

### 13.5 The BAW Index

All the utilities in Germany are obliged to make returns to the Bundesamt für Wirtschaft (BAW) of the border price of imported coal on a monthly basis. There are significant penalties for non-compliance. Coal is adjusted to a calorific value of 7000 kcal/kg nar.

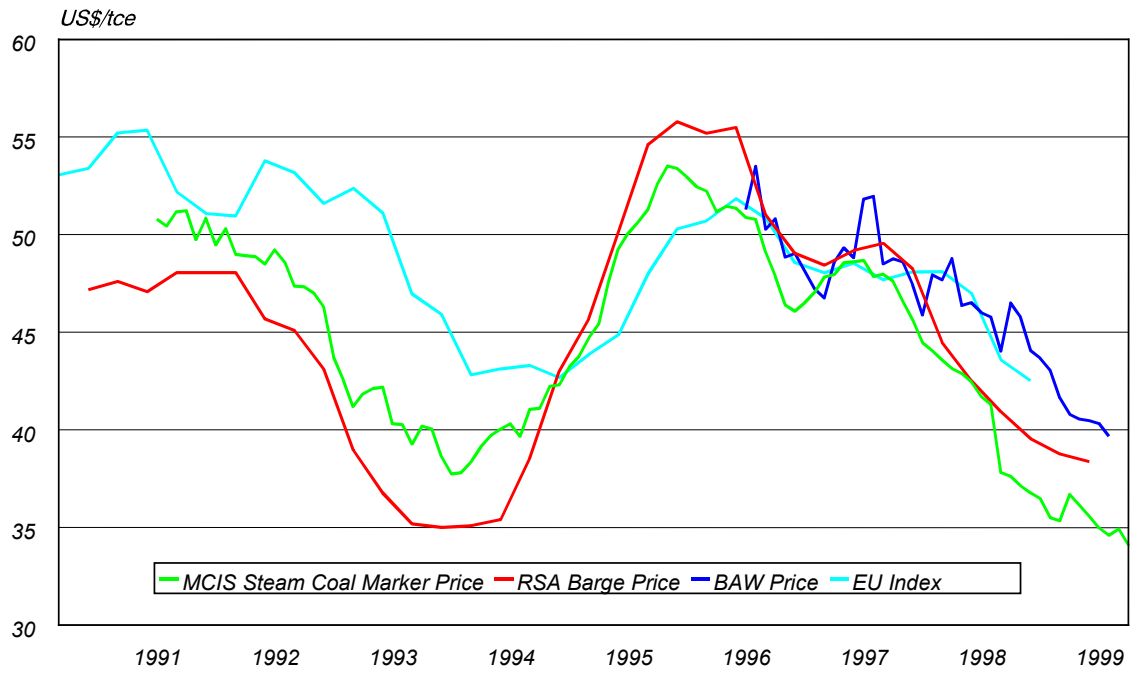
Prices relate to both long-term contractual and spot coal. This is not a major problem in comparing spot indices, since long-term prices are unlikely to have more than 12 months’ duration and the build up of imports into Germany means that a high proportion of spot coal is incorporated in the index.

### 13.6 Comparison of Indices

Examination of all the indices shows that there is close agreement on the relative movement of these indices, all of which track each other closely. They also show the impact of the collection and publication frequency with the EU index showing a time lag against the more immediate MCIS and SACR indices.

The differential between the MCIS index and the BAW index can be explained by the costs associated with the barging of a high proportion of coal to the German border. Similarly, the differential between the SACR and MCIS index results from the cost of transferring coal onto barges.





**SECTION D**

**'LIGNITE AND PEAT'**

## 14. LIGNITE AND PEAT - PRODUCTION AND USE

### 14.1 Lignite

The major producers of lignite in the EU are Germany, Greece, Spain and Austria with the predominant market being electricity generation. The following table represents current and forecast levels of production.

**Lignite Production 1999 –2001 in thousand tonnes**

	<b>1999</b>	<b>2000 (estimate)</b>	<b>2001 (forecast)</b>
Germany	164030	167690	174000
Greece	64300	63812	63456
Spain	8832	8505	8500
Austria	1190	1000	1100
France	560	296	260
<b>EU 15</b>	<b>238932</b>	<b>241317</b>	<b>247316</b>

The low cost of lignite production and rising world energy prices gives lignite a competitive advantage. This can be seen particularly in Germany where the replacement of existing power plant with more efficient units will also provide a boost to lignite utilisation. Elsewhere in the Union lignite use is forecast to be stable.

**Use of Lignite in the Power Sector in thousand tonnes**

	<b>1999</b>	<b>2000 (estimate)</b>	<b>2001(forecast)</b>
France	450	322	260
Germany	149802	152000	161000
Greece	63690	63000	63500
Spain	8832	8452	8500
Austria	1100	938	985
Italy	32	18	0
<b>EU 15</b>	<b>223906</b>	<b>224730</b>	<b>234245</b>

## 14.2 Peat – Production and Use

Within the European Union, production of peat is concentrated in three countries, Finland, Ireland and Sweden. The major application of peat is in electricity generation. Peat, however, is also used extensively in the domestic heating market. Whilst the production of peat has remained steady in Ireland and Sweden, production in Finland has declined.

Peat Production 1999 – 2001/million tonnes

	<b>1999</b>	<b>2000(estimate)</b>	<b>2001(forecast)</b>
Finland	6848	3840	4160
Ireland	5607	5170	5050
Sweden	814	851	800
<b>EU 15</b>	<b>13269</b>	<b>9861</b>	<b>10010</b>