

European Coal and Steel Community

COMMISSION

# **Investment in the Community Coalmining and Iron and Steel Industries**

REPORT ON THE 1978 SURVEY  
Position as at 1 January 1978

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## EUROPEAN UNIT OF ACCOUNT

The unit of account used in this report is the European unit of account.<sup>1</sup>

The average values of the European unit of account (EUA) used for conversion of figures for the years 1975 to 1978 are given in the table below. Figures for 1978 and after are converted at the value of the European unit of account in national currency as at 2 January 1978, also shown in the table below.

Country	Currency	1975	1976	1977	1978 and after
FR Germany.....	DM	3.04939	2.81545	2.64831	2.58106
Belgium/Luxembourg.....	BFR/LFR	45.5690	43.1654	40.8826	40.3265
France .....	FF	5.3923	5.34486	5.60607	5.76880
Italy .....	LIT	809.545	930.150	1 006.785	1 069.90
Netherlands.....	HFL	3.13490	2.95515	2.80010	2.78405
United Kingdom .....	UKL	0.560026	0.621578	0.653701	0.640434
Denmark .....	DKR	7.12266	6.76176	6.85567	7.09772
Ireland .....	IRL	0.560026	0.621578	0.653701	0.640434

<sup>1</sup> Cf. Article 2 (2) of Council Decision 75/250/EEC of 21 April 1975 and Article 2 (2) of Commission Decision No 3289/75/ECSC of 18 December 1975.

## INTRODUCTORY NOTE

This report presents the results of the European Commission's 1978 survey of past and future investment by coal and steel enterprises in the European Coal and Steel Community (ECSC) and of the impact of such investment on production potential.

A full breakdown of the results of the survey by product and plant categories and by region is given in the statistical annex.

The standard ECSC definitions of capital expenditure and production potential which have been used in the survey are given in an annex to this report.

## I — SUMMARY AND CONCLUSIONS

Investment activity in coalmining which rose sharply in the Community from 1974 onwards following the oil crisis, stabilized in 1977 at the relatively high level it had reached in 1976. Although the 1977 level of investment at current prices of EUA 828 million was far above the 1976 level of EUA 712 million — taking account of inflation, the real 1977 level was in fact just above that of 1976.

The relatively high level of investment expenditure reached in 1977 is likely to be maintained in 1978 and 1979. Spending forecast for projects in progress and approved for 1978 totals EUA 902 million — almost 9% above its 1977 level and if projects planned but awaiting approval are included, the total is as much as EUA 970 million. However, the revision of plans and expected price rises may severely restrict the increase in real terms, and possibly even offset it completely. This remark applies in all probability equally to the investment forecasts for 1979.

Since 1960 coal extraction potential in the European Community has declined every year and this was also the case in 1977. Extraction potential decreased by 4.6 million tonnes compared with the previous year to 255.9 million tonnes. Following the oil crisis coal extraction potential fell by 17.3 million tonnes in the period 1974-77 in spite of a change in economic conditions. The current forecasts of the coal undertakings suggest nevertheless that this downward trend is unlikely to continue at the same rate over the next few years. According to the projects in progress or approved by the undertakings, extraction potential should decrease by a total of only 5 million tonnes between now and 1981.

This relatively optimistic view reflects a feeling of confidence that the coalfields which are expanding, primarily in the United Kingdom, will compensate for reductions in extraction potential, in particular in France. In areas which are less competitive, every year sees plans for cutbacks in production potential greater than those expected in the previous year. This reflects an increasingly pessimistic assessment of the competitiveness of the collieries concerned.

On the basis of this survey of investments and those of the preceding years, there are signs that in the longer term extraction potential will find its own level between 250 and 260 million tonnes ( $t = t$ ). Achievement of this objective will depend on the reactions of coal producers and governments to the increasing difficulties facing the coal sector both in respect of the implementation of development projects and of the accelerated rate of closure of uneconomic collieries.

While the governments concerned and the Commission are today convinced of the need to ensure that coal constitutes an important source of energy for the Community, the increasing burden which subsidies impose on the national budgets could lead to the curtailment of some projects.

On the basis of the results of this survey it would seem that the coal industry is not nearing the production of 270 million tonnes (t = t), i.e. 250 million tonnes tce, recommended by the Council and set out in the 'Medium-term guidelines for coal'<sup>1</sup> as the long-term Community objective.

In view of the coal reserves in the Community it would certainly be possible in theory to increase annual production to 270 million tonnes, but this pre-supposes the opening of new production areas — as is happening in certain coalfields — and also secure marketing outlets. The measures taken so far are unlikely to create an adequate basis for decisions on long-term investments.

\*  
\* \*

Investment expenditure for coking plants in the Community, which stood at EUA 255 million in 1977, was 7.7% higher than the figure for 1976 (EUA 237 million). 91% of the capital expenditure estimated at the beginning of 1977 was thus implemented.

It is planned to reduce expenditure to EUA 218 million for 1978 for all categories of coking plant. This decrease, which seems likely to continue in 1979, is attributable partly to the completion of reconstruction and replacement programmes and partly to the fact that the implementation of some planned projects is being postponed because of the difficult financial and market situation. An even greater than anticipated decline in investment activity cannot therefore be ruled out.

Thus, taking account of projects adopted and in progress, coking capacity is expected to decrease from 86.2 million tonnes in 1977 to 81.2 million tonnes in 1981. In the last survey the figure was still expected to be as high as 88 million tonnes for 1980. The protracted difficulties in the steel industry led to a readiness to close down obsolete coking plants more rapidly than originally planned.

Pig-iron production which stood at 87.6 million tonnes in 1977, should reach the 1974 level (111.8 million tonnes) at the earliest in 1985, according to the estimates of the revised General Objectives for Steel. Stocks of coke alone which reached 21.6 million tonnes at the end of 1977, would far exceed the additional quantity required to reach this level. However, the present situation of overcapacity will have to be reduced more rapidly than undertakings are at present planning.

This could lead to a situation in which it might be necessary as early as the beginning of the 1980s to fall back upon reserves, and shortages might occur in the middle of the next decade unless coal and steel undertakings increase investment expenditure, which is particularly difficult in view of economic and financial problems.

As predicted in last year's report, the Steel enterprises' forecasts of capital expenditure for 1977 — 2 700 million EUA — were in general not achieved. A number of modernization schemes which had been decided during the course of the year have now been abandoned or postponed, with the result that at current prices total capital expenditure fell in 1977 to a level of only 2 400 million EUA compared with 3 300 million EUA in 1976. In 1978 capital expenditure is forecast by the enterprises to be about the same as in 1977, though it seems doubtful that the level of 2 400 million EUA will be achieved given the financial constraints under which the enterprises are operating.

In terms of constant prices of 1970, capital expenditure is also expected to remain at its 1977 level of 1 100 million EUA, compared with 1 800 million EUA in 1976. The current rate of investment at constant prices per tonne of crude steel capacity was only 6 EUA in 1977 and is expected to be 5 EUA for 1978, compared with 15 EUA in 1974. Comparisons with historical levels of investment indicate that current

<sup>1</sup> Medium-term guidelines for coal 1975-1985, OJ C 22 of 30.1.1975.

investment activity appears inadequate to maintain to a reasonable standard even the reduced level of capacity needed to meet forecast steel demand. Lack of funds for investment and revised forecasts of steel consumption have led to drastic modifications in many investment projects. The low level of capital expenditure per tonne of steel production potential is also the result of some overestimation of the level of production potential itself; many enterprises are officially reporting as production potential obsolete plant which is being kept in reserve but is almost certain to be closed in later stages of the current restructuring of the industry.

In contrast to last year's survey there are signs that plans to restructure are taking a more concrete form particularly in traditional steelmaking regions, but the impact of these plans does not yet show up clearly in the capacity estimates provided by the survey for the period 1977 to 1981. There is indeed some evidence of a strategic element in the replies to the survey. The reported capacities are generally regarded as one of the factors which could influence the extending of closures and rationalization measures required within the context of national or Community restructuring policies.

In Belgium some closures have already taken place but almost exclusively in the context of modernization projects which have maintained production potential at its previous level. Enterprises in southern Belgium are also considering extensive agreements on product specialization and plant restructuring with steel producers in Luxembourg and the Saar, but it is yet to be seen to what extent these agreements will lead to an overall reduction in capacities. The McKinsey study of restructuring possibilities in Belgium and Luxembourg also leaves the future of several installations and works uncertain. However, further major closures will undoubtedly have to be carried out.

In contrast to Belgium the plans of the enterprises in eastern France have already led to some net reduction in both crude steel and finished-product capacities and will inevitably involve further reductions in the near future. In northern France closures have up to now been more than offset by the expansion of coastal works and no further major closures are announced by the survey. However, if current market conditions persist, restructuring will necessarily involve the shutdown of major facilities without replacement.

In Luxembourg and the Saar the broad outlines of a far-reaching restructuring programme have been defined involving the specialization of works on specific products but according to the survey the programme does not yet appear to have any significant effect on overall capacity until 1981—the horizon year of the survey. However, some closures planned within the programme may be accelerated.

In the United Kingdom there has been a radical review of the British Steel Corporation's investment programme. A number of closures which were foreseen by the Corporation in the **Ten Year Development Strategy** of 1973<sup>1</sup> but delayed pending further review have now been carried out. They include several steelworks including one which was to have been replaced by electric furnaces. A greater proportion of the Corporation's rolling facilities will now be supplied with semi-products by its major coastal steelworks. In addition, a project in Wales to expand an integrated works based on hot wide strip—which had been mentioned in last year's report—has now been withdrawn. The Corporation has at the same time announced its intention to extend its use of continuous casting at this and other works.

Although extensive closures are taking place in the United Kingdom, over 5½ million tonnes of new capacity is expected to have been commissioned by 1981 at three of the Corporation's major coastal steelmaking centres. Even maintaining capacity at its present level therefore implies further major closures.

Encouraged by the present relatively favourable conditions for scrap-based steelworks, two privately-owned mini-mills in the UK have announced plans to expand their capacity. In addition, the Irish steel

<sup>1</sup> British Steel Corporation: *Ten Year Development Strategy*, HMSO, London February 1973.

producers are pursuing their study of the project to modernize and expand steelmaking and rolling facilities.

In the Netherlands, North Rhine/Westphalia and northern Germany, some new modernization schemes have been decided since the last survey. In all three cases overall steelmaking and flat product capacities are expected to increase. In Italy the trend of capacity is also increasing with most of the expansion occurring at electric steelworks.

Looking at the estimates for the Community as a whole, despite an acceleration compared to last year's forecasts of closures of obsolete steelworks, the enterprises still expect crude steel production potential to increase over the next four years from just under 200 million tonnes in 1977 to about 210 million tonnes in 1981, an average rate of 1% p.a. It is likely that this estimate for 1981 will not be attained in full; since the onset of the general economic recession in 1974 enterprises have, with few exceptions, tended to overestimate their crude-steel production potential when making their estimates for four years in advance. This shortfall of actual production potential against forecast has arisen not only because of the difficult financial conditions under which the enterprises have to fund their investment projects but also because market uncertainties have led them both to delay some projects in progress and to reassess the scale and even location of others under consideration.

However, even if the forecast figures are to some extent overestimated, the survey shows a number of major replacement and modernization schemes nearing completion. These schemes, together with productivity improvements at other steelworks, will inevitably lead to an increase in production potential that may well exceed the capacity reduction due to announced closures.

The following increases of crude-steel production potential are expected between 1977 and 1981:

— LD steelworks	13.2 million tonnes
— new OBM and LWS oxygen steelworks	8.3 million tonnes
— electric steelworks	6.6 million tonnes
	making a total of 28.1 million tonnes.

Announced closures are limited to a total of 18.3 million tonnes:

— open hearth	8.0 million tonnes
— Basic Bessemer	4.2 million tonnes
— ex-Thomas OBM	4.5 million tonnes
— LD and Kaldo	1.5 million tonnes
— electric	0.1 million tonnes.

Hence total Community production potential for crude steel should, according to the survey, rise by a net amount of up to 9.8 million tonnes. There are admittedly some further closures of Basic Bessemer, ex-Thomas OBM and open-hearth capacities which are being envisaged in a number of countries but have not been announced in the survey. However, the additional capacity reduction to be expected from these plans would be limited and the closures themselves would not necessarily be put into effect until after 1982.

In addition to closures, more than 3 million tonnes of steelmaking capacity has been officially notified by enterprises as mothballed but is still included in the survey estimates. Substantially more capacity may also have been mothballed without official notification. For most enterprises mothballing nevertheless involves almost as great a reduction in employment as a closure and therefore presents similar difficulties in finding alternative employment for the manpower which is released. At the same time many of the fixed

costs of mothballed plants cannot be avoided without complete closure. The alternative solution of reducing the number of shifts<sup>1</sup> worked appears to have similar drawbacks to those of mothballing.

On the basis of these results it is difficult to see to what extent the enterprises will reduce their steel production potential to a level consistent with expected demand and therefore improve their rate of capacity utilization. Without further restructuring, crude-steel production potential should reach a level of somewhere between 205 and 210 million tonnes by 1981. Assuming no improvement in prices or sales volumes — and consequently utilization rates — the financial viability of a number of enterprises will remain in question.

In these circumstances, funds for investment will continue to be severely restricted and as last year's report emphasized, what monies are available must be employed where their likely return is greatest. A coordinated approach at Community level towards the use of investment funds remains essential. In broad terms the two major aims of Community steel investment policy are to eliminate the current overcapacity for most steel products and to raise the competitiveness of Community production facilities to best international standards. To accomplish these two aims, most companies will need to invest in replacement and modernization schemes involving more often than in the past a net reduction of capacity. This process would be most effective if existing modern facilities were used to a greater extent on a joint basis. Such an approach has already enabled companies to avoid further large investments in new installations.

However, progress towards the restoration of the demand/supply balance and towards the achievement of a significant increase in competitiveness is likely to be slowed down by the following factors:

- there is an inevitable delay in the planning of restructuring, especially if more than one works and enterprise and Member State is involved;
- in some cases plant closures cannot be carried out until completion of negotiations with workforce representatives and until, where appropriate to the region concerned, programmes for the creation of alternative job opportunities have been established;
- with the possible exception of mini-mill installations, any new installations may take two to three years to build and commission; the closure of larger obsolete capacities may therefore be delayed until this commissioning takes place.

There are some further elements in the process of restructuring itself which could lead to a persistence of the present problems.

In particular:

- some enterprises may find after some time that the scale of their restructuring programmes has to be greater than originally envisaged; during the period in which restructuring is being carried out the lack of competitiveness of some installations could lead them to lose a further part of their market share to third country producers;
- with few exceptions there has been a tendency among enterprises to limit restructuring possibilities within national boundaries or within established financial groupings. Solutions first contemplated have not therefore been the best possible in a Community context. Indeed there have already been examples where projects which were started on have later had to be reassessed or even abandoned after their reconsideration in the context of a wider grouping. As last year's report emphasized, cooperation between producers should lead to substantial economies in investment and operating costs, and can be carried out within the framework of the Community providing sound competition is safeguarded;

<sup>1</sup> The survey estimates do not indicate what level of shift working has been assumed in the calculation of production potential. The survey definitions require enterprises to assume the maximum number of shifts possible in a year of good trading conditions and assuming 'normal' manpower availability.

- increased rates of capacity utilization will not in themselves be sufficient to restore the financial viability of the enterprises unless overhead costs can be reduced at least in proportion to the capacity reductions;
- the low margins and tonnages obtained since 1974 in light section markets has encouraged a number of enterprises — particularly in Luxembourg and Belgium as well as in eastern France and Italy — to reorient their production capacities from section to flat products. The possible impact of a parallel and uncoordinated development of these additional capacities will be discussed in more detail in the revised General Objectives for the steel industry for the period 1980-85 which the Commission will publish shortly;
- the currently low prices of scrap as well as the often lower manpower and overhead costs per tonne favouring electric steelworks have also recently encouraged several enterprises based on the electric process to envisage the expansion of their steelmaking capacity. The possibility of an extension of electric steel capacities will also be discussed in the now revised General Objectives, in particular in relation to the need for compensating closures and to the likely availability of good quality scrap and sponge-iron.

Even these few factors, which will receive further attention in the General Objectives, point to the necessity for a coordinated approach by the steel enterprises, governments and the Commission to investment policy and restructuring. Such an approach — which implies a programmed development of employment opportunities in non-steel sectors to reabsorb the manpower released by productivity improvements and capacity reductions — should contribute in the medium term to a restoration of the demand/supply balance and an improvement in competitiveness.

## II — COALMINING

### 1. Capital expenditure

#### Total capital expenditure in 1977

Investment activity in coalmining, which rose sharply in the Community from 1974 onwards following the oil crisis, stabilized in 1977 at the relatively high level it had reached in 1976.

Although the 1976 investment level of 712.1 million EUA at current prices was far above the 1977 level (828.8 million EUA), at constant prices the 1977 level was only just above that of 1976 (Table I).

That the level of investments was as high as it was is primarily accounted for by the level of investment at current prices in the United Kingdom which rose from 407.2 million EUA in 1976 to 518.0 million EUA in 1977. In Belgium (Campine) and in France (Lorraine, Centre-Midi) investment also rose while in Germany capital expenditure was slightly down on the preceding year, due to declines in spending in the Ruhr and in the Aachen coalfields.

TABLE I  
Actual and estimated capital expenditure  
in the coalmining industry 1975-79

million EUA

	Actual expenditure			Estimated expenditure			
				1978		1979	
	1975	1976	1977	Projects approved and in progress (cat. A + B)	All planned projects (cat. A + B + C)	Projects approved and in progress (cat. A + B)	All planned projects (cat. A + B + C)
Capital expenditure:							
— At current prices .....	564.2	712.1	828.2	902.1	970.5	822.7	1 069.4
— At constant prices of 1970 .....	330.0	362.2	369.6	359.4 <sup>1</sup>	386.7 <sup>1</sup>	298.0 <sup>1</sup>	387.4 <sup>1</sup>

<sup>1</sup> For 1978 the assumed inflation rate is 12% and for 1979 10%.

### Comparison between actual and planned investment

As in the preceding two years capital expenditure in the Community in 1977 on projects in progress and approved reached the level forecast at the beginning of the year (see Table 1 in Annex). Furthermore, most of the investment planned for 1977 but awaiting approval was carried out.

The consistency evident at Community level between forecast and results does not, however, extend to national level. The picture here is a very mixed one. In the United Kingdom, the largest investor, planned investments, including those on which approval was still outstanding, were even exceeded, this being attributable to capital expenditure carried over from the preceding year and to an underestimated inflation rate. The forecast investment level was not reached in any other country and there were even considerable differences from one coalfield to another. Although in a number of smaller coalfields the forecast level of investments was exceeded, in the larger coalfields the level was in some instances considerably lower.

There are a number of reasons for these differences in the rate of achievement of forecast capital expenditure. Delays in implementation due to technical difficulties and revision of plans due to financial considerations appear to be the major causes; in the countries of the original Community the revision of planned investment for financial reasons is likely to have had an increasing importance.

### Capital expenditure per tonne of coal produced

Given the higher level of investment at current prices and the more or less static level of investment at constant prices on the one hand, and the lower coal output compared with 1976 on the other, 1977 shows a higher level of investment per tonne of coal produced both at current and constant prices. At 3.47 EAU/tonne at current prices and taking into account the erosion of purchasing power, it is quite possible that in real terms a level was reached which corresponds to that achieved during the coal boom of the 1950s.

The levels differ greatly from country to country and from coalfield to coalfield however (see Table 2 in Annex). Averaging 4.34 EAU per tonne the level of investments per tonne is far above average in the United Kingdom while in the Federal Republic of Germany it is much lower at 2.73 EAU per tonne. Coalfield by coalfield investments were above average in Lower Saxony, the Saar, Yorkshire, Kent and the Western and Welsh coalfields, while in the remaining areas the levels were in some cases far below average.

### Plans for 1978 and 1979

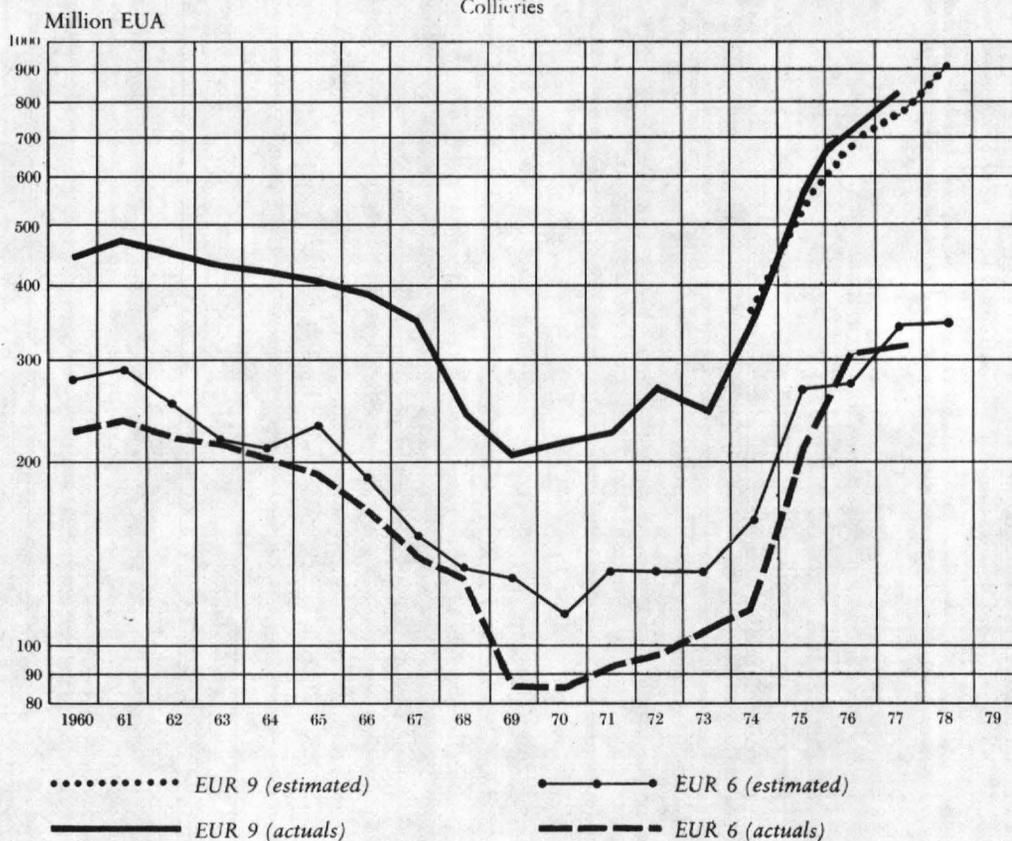
The relatively high level of expenditure reached in 1976 and 1977 is likely to be maintained in 1978 and 1979. Spending forecast for projects in progress and approved for 1978 totals 902.1 million EAU — 9% above its 1977 level — and if projects planned but awaiting approval are included, the total is as much as 970.5 million EAU. However, the revision of plans and expected price rises will severely restrict the rise in real terms, possibly even more than compensating for it (see Table I). This state of affairs will in all probability apply also to investment forecast for 1979.

The stabilization at a relatively high level for the next two years which is generally evident does not, of course, apply to all coalfields (see Table 1 in Annex). Extremely wide-ranging investments are planned on the Saar, in Campine and in Yorkshire (the Selby project). In a number of smaller coalfields where ongoing projects are nearing completion, such as in Aachen, Lower Saxony, or are only maintenance investments, such as in South Belgium, Nord/Pas-de-Calais, investments are in some cases declining sharply.

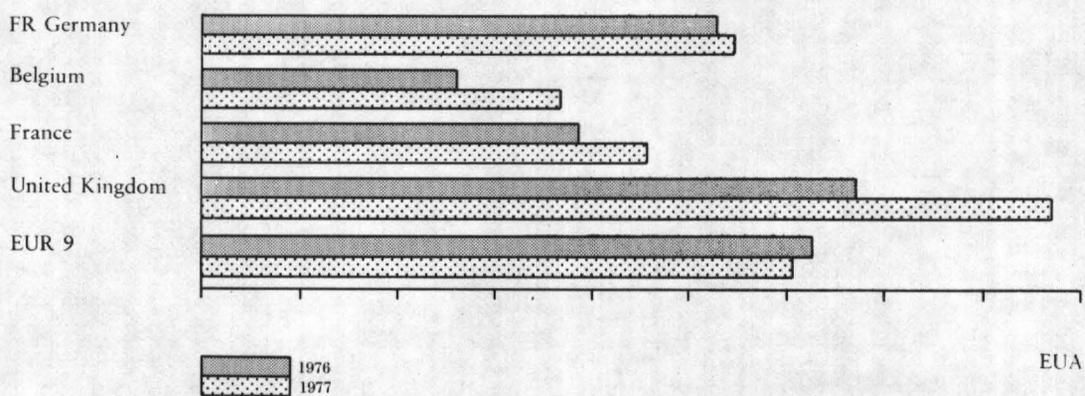
FIGURE 1

Comparison of actual capital expenditure and estimated capital expenditure as at the beginning of each year

Collieries



Capital expenditure per tonne of coal produced in 1976 and 1977



### Breakdown of actual and forecast investment by type of installation

As in the past investment in underground machinery accounted for the major part of total investment in 1977 (44%). This situation is likely to continue in the years to come at more or less the same level (see Table II). The second most important capital expenditure item in 1977 was screening and washing plant although the level of investment was down against the previous year. It appears that this trend will continue over the next two years although the level will continue considerably high. Investment in haulage and winding equipment, which experienced a boom in 1976, appears to be stabilizing at a level of around 40 million EUA.

By way of contrast investment in shafts and underground workings rose sharply in 1977 (+50% compared with the previous year). Investment for 1978 and 1979 is also planned to be at a high level and will also be 50% up on the 1977 figure, with the result that in the next two years shafts and underground workings will account for the second largest item of all capital investment.

This last point is indicative of the efforts of the coal mining companies to stabilize production in the long term by developing new fields. The continuing high of investment in preparation plant reflects the extent to which the companies are prepared to improve quality by rationalization and modernization.

TABLE II  
Breakdown of actual and planned capital expenditure on coalmines  
in Community by type of installation 1975-79<sup>1</sup>

*million EUA*

Type of installation	Actual expenditure			Estimated expenditure (on projects decided or in progress)		
	1975	1976	1977	1978	1979	
Shafts and underground .....	EUR 6	22.2	32.2	57.3	97.8	94.5
	EUR 9	87.5	80.7	121.5	181.5	187.0
Underground machinery .....	EUR 6	83.6	82.1	97.9	96.7	47.3
	EUR 9	223.2	302.0	357.3	360.3	328.6
Haulage and winding equipment .....	EUR 6	20.3	45.0	24.9	23.9	21.6
	EUR 9	37.3	60.4	49.7	41.6	37.2
Screening and washing .....	EUR 6	39.9	69.2	58.6	47.6	35.0
	EUR 9	103.4	134.5	128.1	116.9	83.6
Other surface installations .....	EUR 6	48.3	76.3	71.5	79.9	67.9
	EUR 9	99.3	121.1	151.7	179.9	175.3
<b>Total</b>	EUR 6	214.3	304.9	310.2	345.9	266.2
	EUR 9	550.7	698.7	808.3	880.2	811.7

<sup>1</sup> Not including opencast mining.

## 2. Extraction and extraction potential

### Extraction in 1977

In 1977 production in the European Community was approximately 2.7% lower than in 1976, declining from 246.1 million to 239.5 million tonnes (see Table III).

The slightly higher tonnage consumed by power-stations compared with 1976 was not able to offset the sharp drop in coal consumption by coking plants as a result of the continuing steel crisis, which meant that, confronted with high imports and rising stocks, most coal producers were obliged to cut back production or leave some coal underground. This was achieved partly by short time working in the Federal Republic of Germany and by the closure of some smaller pits in South Belgium and in the United Kingdom, where a drop in shift output was also registered.

The decline in production was most significant in the Ruhr where production fell by approximately 5 million tonnes although in terms of percentage decline other coalfields were even more seriously affected. There were slight increases in production (0.1 to 0.2 million tonnes) in Lower Saxony, Campine and Yorkshire. There was another substantial increase in opencast production in the United Kingdom from 11.7 million tonnes in 1977 and consequently the fall in coal production in the United Kingdom which totalled 1 million tonnes was relatively slight.

TABLE III  
Movement of coal extraction potential<sup>1</sup>

*in million tonnes*

Community	Extraction <sup>1</sup>		Extraction potential					
			Actual		Estimates based on projects approved or in progress			
	1976	1977	1976	1977	1978	1979	1980	1981
Tonnes (t = t) .....	246.1	239.5	260.5	255.9	253.1	253.4	252.7	250.9
					Estimates based on all planned projects			
Tonnes (t = t) .....					254.1	255.2	256.8	259.0

<sup>1</sup> Without small mines and 'licensed mines'.

### Estimated extraction potential between 1978 and 1981

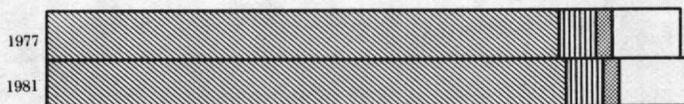
Since 1960 coal extraction potential in the European Community has declined every year and this was also the case in 1977 (see Fig. 3). Extraction potential decreased by 4.6 million tonnes compared with the previous year to 255.9 million tonnes. Following the oil crisis coal extraction potential fell by 17.3 million tonnes in the period 1974-77 in spite of a change in economic conditions. The current forecast of the coal enterprises is nevertheless that this downward trend is unlikely to continue at this rate over the next few years.

According to the forecasts of the enterprises, and on the basis of projects currently in progress or already approved, extraction potential should decrease by a further net 5 million tonnes in the period up to 1981 (see Table III). However if all the projects which are planned, including those which still require final approval, are taken as a basis for the forecast, extraction potential could be approximately 3 million tonnes

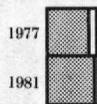
FIGURE 2

Actual coal extraction potential in 1977 and forecast extraction potential for 1981

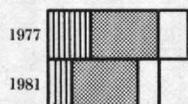
FR GERMANY



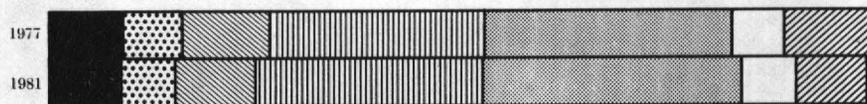
BELGIUM



FRANCE

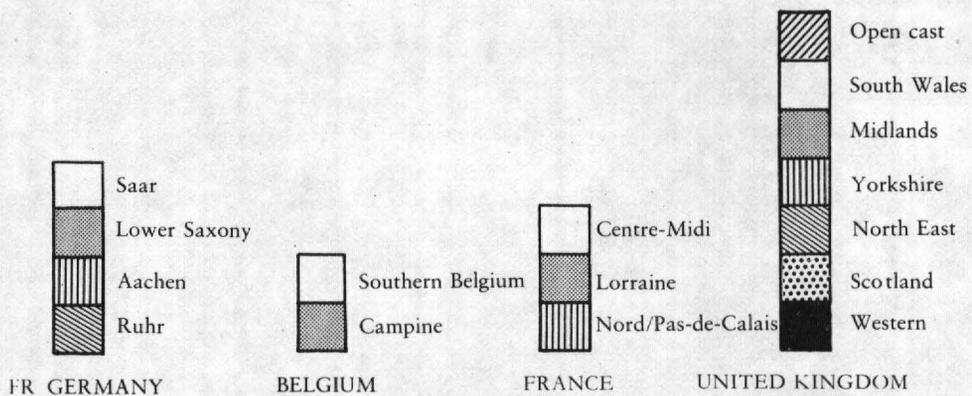


UNITED KINGDOM



0 10 20 30 40 50 60 70 80 90 100 110 120 130 140

Million tonnes of net output



higher than in 1977. Over recent years there has been a tendency for most of the planned investments for a particular year to be realized: under these circumstances a stabilization of extraction potential at current levels ought to be possible at least in the medium term.

This relatively optimistic view reflects a feeling of confidence that the coalfields with plans for expansion (these are primarily in the United Kingdom) will more than compensate for the rapidly diminishing extraction potential (in particular in France) (see Table 3 in Annex). The coalfields in Yorkshire, Midlands, Kent, Wales, in opencast mining, in the Saar and Campine are planning to increase extraction potential in 1981 to a higher level than it was in 1977. In the Ruhr, Lorraine and Western coalfields of the United Kingdom an approximate stabilization of extraction potential is being aimed at. Current plans suggest that extraction potential will be cut back to a greater degree in South Belgium, Nord/Pas-de-Calais, Centre-Midi, Scotland and the north-east area of England. Every year in these areas the proposed cutbacks in extraction potential have finally been greater than those expected the previous year. This reflects an increasingly pessimistic assessment of the competitiveness of the collieries concerned.

Viewed on a national basis and according to whether projects planned but not yet approved are included, the following development is anticipated in extraction potential between 1977 and 1981: the Federal Republic of Germany expects growth of between 0.7 million and 2 million tonnes to a total of 99.2 million tonnes (100.5 million tonnes). An increase of 0.1 million tonnes is expected in Belgium which would bring extraction potential to 7.6 million tonnes. A substantial decline is forecast for France: by 4.7 million tonnes or 4.4 million tonnes to 17.0 million tonnes or 17.3 million tonnes. The United Kingdom expects a reduction in extraction potential by 1.1 million tonnes to 127.1 million tonnes on the basis of current approved projects as the increases in the main coalmining areas will not be sufficient to offset the declining extraction potential in the other coalfields and in opencast mining. If account is taken of planned projects awaiting approval, the extraction potential could well increase by 5.5 million tonnes up to 133.7 million tonnes in the period between now and 1981.

## Conclusions

On the basis of this survey of investments and those of the preceding years there are signs that in the longer term extraction potential will find its own level between 250 million and 260 million tonnes ( $t = t$ ). Whether or not the upper or lower limit is reached will depend on how the coal producers and/or governments will react to the increasing difficulties facing the coal sector both in respect of the implementation of development projects and of the accelerated rate of closure of uneconomic collieries.

While the governments concerned and the Commission of the European Communities are naturally today convinced of the need to ensure that coal constitutes an increasingly important source of energy for the countries of the European Community, it should not be forgotten that the increasing burden which subsidies impose on the national budgets could entail modifications to some projects.

On the basis of the results of this survey it would seem that the Community objective of 250 million tonnes ( $t = t$ ) or 250 million tonnes tce, which is the target set in 'Medium-term guidelines for coal'<sup>1</sup> and which enjoys the support of all the governments, is no nearer to being achieved. The considerable investment efforts which the coalmining industry has made and intends to make can of course produce results only in the long term. On the other hand the investments carried out up to now have not been apparently sufficient to strengthen the competitiveness of the European coalmining industry as productivity (output per man/shift) overall has not increased in the European Community over recent years.

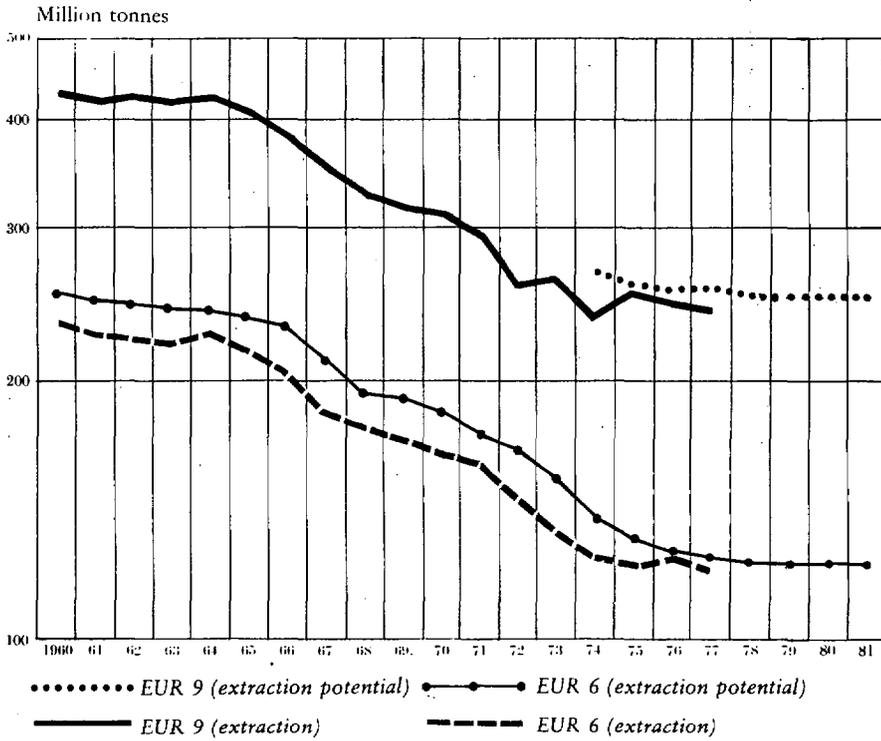
<sup>1</sup> Medium-term guidelines for coal 1975-1985, OJ C 22 of 30.1.1975.

In view of the coal reserves in the Community it would be possible to increase production to 270 million tonnes without too many problems but this presupposes that new production areas are developed to a greater degree. This approach, which is already being applied in the various countries, must be pursued more consistently. On the other hand sales need to be safeguarded. The announced forecast of an energy shortage in the long-term is unlikely to be enough to promote long-term investment decisions by the coalmining companies. What the coal producers really need is firm sales guarantees. Although in a number of countries some initial steps have been taken recently in this respect there are grounds for asking whether these measures alone are enough to create an adequate basis for decisions on long-term extremely high-cost investments.

FIGURE 3

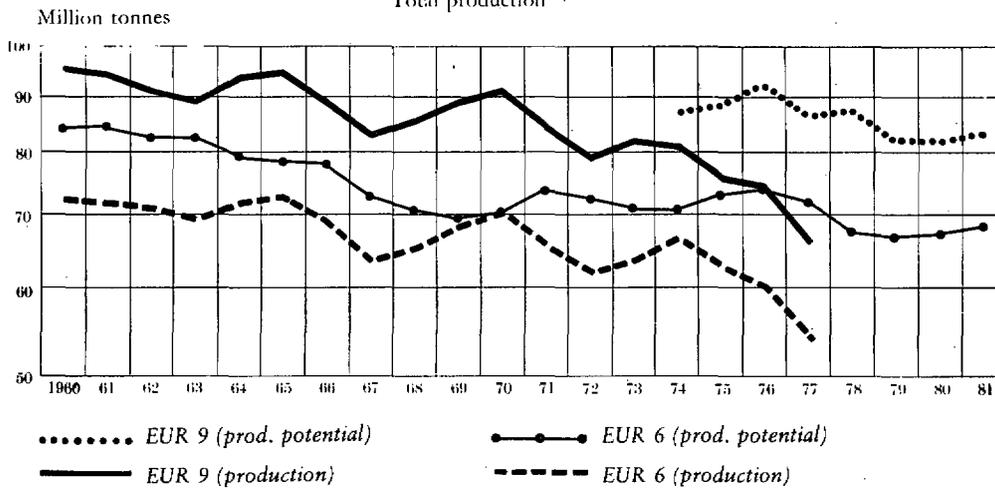
Extraction and extraction potential

Coalmining industry



Production and production potential of coking plants

Total production <sup>1</sup>



<sup>1</sup> Mine-owned, steelworks-owned and independent coking plants.

### III — COKING AND BRIQUETTING PLANTS

#### 1. Coking plants

##### 1.1. Capital expenditure

Capital expenditure for coking plants in the Community, which stood at 255.1 million EUA at current prices in 1977, was 7.7% higher than the figure for 1976 (236.8 million EUA). 91% of the capital expenditure estimated at the beginning of 1977 was thereby implemented. Whereas the annual plans for mine-owned coking plants were fully realized, only 85% of the resources set aside for steelworks-owned coking plants was utilized, mainly because of delays to expansion programmes in Wales and northern England.

The increase in capital expenditure for 1977 as against 1976 was achieved only because capital expenditure on mine-owned coking plants rose by 40%. This is attributable to extensive renovation of coke-oven batteries in the Ruhr and Lorraine.

On the other hand, for steelworks-owned and independent coking plants, capital expenditure for 1977 was 3% and 5%, respectively below that of the previous year.

TABLE IV  
Breakdown of actual capital spending at mine-owned  
independent and steelworks coking plants 1975-79

million EUA

Sector	Actual expenditure			Estimated expenditure (cat. A + B)	
	1975	1976	1977	1978	1979
Mine-owned .....	42.9	59.3	83.2	61.1	39.6
Independent .....	5.9	12.9	12.2	4.3	3.0
Steelworks-owned .....	184.2	164.6	159.7	152.9	76.2
<b>Total</b>	<b>233.0</b>	<b>236.8</b>	<b>255.1</b>	<b>218.3</b>	<b>118.8</b>

This contrasting development of mine-owned and steelworks-owned coking plants follows the trend of recent years. It may reflect technical factors in the case of the mines, i.e. the need to replace obsolete plant to a greater extent, and financial circumstances in the case of the steel industry (inadequate scope for self-financing).

The planned capital expenditure for 1978 is 218.3 million EUA, and the reduction applies to all categories of coking plant. Whereas the decrease is particularly great in the case of mine-owned and independent coking plants, it is limited in the case of steelworks-owned coking plants.

However, the decrease in planned capital expenditure for 1978 would be substantially greater for metallurgical coking plants also, had not a very large German steel undertaking decided to extend its coking plant in 1978.

The general decrease in capital expenditure, which seems likely to continue in 1979, is attributable to the fact that current reconstruction and replacement programmes will be completed in Wales, northern England and the Ruhr in 1978 and 1979, and that the implementation of planned projects is being postponed because of the difficult financial and market situation. An even greater than anticipated decline in investment activity cannot therefore be ruled out.

## 1.2. Production potential

Marketing difficulties and a high level of stocks resulting from the prolonged steel crisis in the European Community led to a fall in coke production in 1977 of 8.1 million tonnes (roughly 10.9%) compared with the previous year. The fall was particularly sharp for mine-owned coking plants in the Ruhr: 3.5 million tonnes.

Along with the drop in production there was a parallel decrease in production potential, from 90.2 million tonnes in 1976 to 86.2 million tonnes in 1977, resulting from the closure of obsolete coking plants. The decrease was primarily due to the closure of mine-owned coking plants in the Ruhr. The drop in

TABLE V  
Development of production potential of coking plant

Coking plant		Production			Production potential						
					Actual		Forecast				
		1960	1976	1977	1960	1976	1977	1978	1979	1980	1981
Mine-owned .....	EUR 6	50.2	29.6	25.3	54.4	34.7	32.5	29.0	28.2	28.3	28.4
	EUR 9	56.9	34.2	29.3	*	39.4	37.1	33.2	31.5	31.4	31.6
Independent .....	EUR 6	3.9	2.4	2.3	4.2	3.4	3.4	3.2	3.2	3.2	3.2
	EUR 9	6.0	3.1	2.4	*	4.2	4.0	3.7	3.7	3.7	3.7
Iron- and steelworks .....	EUR 6	19.8	28.0	26.5	22.2	35.5	35.5	34.9	35.3	35.3	35.1
	EUR 9	32.3	37.1	34.6	*	46.6	45.1	43.8	46.6	46.6	45.9
Total	EUR 6	73.9	60.0	54.1	80.8	73.6	71.4	67.1	66.7	66.8	66.7
	EUR 9	95.2	74.4	66.3	*	90.2	86.2	80.7	81.8	81.7	81.2

\* Figures not available.

the production potential of steelworks-owned coking plants resulted mainly from shutdowns in northern England and Germany.

The only increases in potential in 1977 occurred at mine-owned coking plants in Lorraine (0.4 million tonnes) and at Belgian steelworks-owned coking plants. These increases however have already been counterbalanced in 1978 by a reduction in the potential of some coking plants.

As was clear from last year's survey, a reduction in production potential is to be expected in the medium term. On the basis of current plans and decided projects, potential should drop from 86.2 million tonnes in 1977 to 81.2 million tonnes in 1981 (see Table V). In the last survey the figure was expected to be still as high as 87.9 million tonnes in 1980. The protracted difficulties of the steel industry have apparently led to a readiness to close down obsolete coking plants more rapidly than originally planned. Even if all expansion and reconstruction projects planned but not yet adopted are carried out, they will not entirely compensate for the reduction in potential.

A more differentiated picture can be obtained by looking at individual categories of coking plant. Leaving aside the slight drop in capacity of the independent coking plants, the decrease occurred almost exclusively at the mine-owned coking plants, and mainly in the Ruhr and in the Nord/Pas-de-Calais region of France (see Table 5 in Annex).

The reduction in potential of mine-owned coking plants amounts to 5.5 million tonnes. For steelworks-owned coking plants on the other hand, the period from 1977 to 1981 should show an increase of 0.8 million tonnes. This is attributable to plans in northern England and Germany. The Belgian steel industry will reduce its coking plant potential by 0.8 million tonnes. In France and Italy the present potential will be more or less maintained.

The trend towards a greater expansion of steelworks-owned coking plants, to the detriment of pithead and independent coking plants, should therefore continue, even if to a reduced extent.

## Conclusions

To what extent coke production potential in the Community will succeed in meeting demand depends on the trend in pig-iron production. Pig-iron production, which stood at 87.5 million tonnes in 1977, should reach the 1974 level (111.8 million tonnes) at the earliest in 1985, according to the estimates of the revised General Objectives for steel. Present stocks alone (21.6 million tonnes at the end of 1977) far exceed the additional quantity required to reach the 1974 production level for pig-iron. They thus provide an adequate cushion for the next few years to meet any unexpected strong upturn in the short-term situation of the steel industry, or, more probably, a more rapid reduction in the capacity of coking plants than is at present planned by undertakings. The latter is a risk inherent in the present situation of overcapacity, particularly since many coking plants no longer operate efficiently in present circumstances, and the expansion or reconstruction of coking plants presupposes the existence of funds which are not at present available in the coal or steel industries and are unlikely to become available in the immediate future.

This could lead to a situation in which it might be necessary as early as the beginning of the 1980s to fall back upon the reserves, and shortages might occur in the middle of the 1980s if undertakings do not make an effort before then to increase their coking plant potential in the short term.

The trend towards a greater increase in metallurgical coking plant potential, at the expense of pithead coking plants, might have negative consequences for European coalmining to the extent that the expansion of coking plants in coastal steelworks could lead to further substitution of Community coal by imports.

## 2. Briquetting plants

Investment in coal briquetting plants amounted to 1.45 million EUA in 1977. 3.03 million EUA are earmarked for 1978. This investment is intended only for replacement and some improvements to quality and does not cover extensions.

In view of the declining demand from households there will be production cutbacks and closures in the Nord/Pas-de-Calais, Centre-Midi, the United Kingdom and in Belgium, which will reduce capacity from 7.3 million tonnes in 1977 to 5.7 million tonnes in 1981 (see Table 6 in the Annex).

In the lignite briquetting plants investments in 1977 totalled 8.20 million EUA. Planned investments for 1978 totalled no less than 12.01 million EUA. The latter are not connected with any extension of production since, as is the case with the coal briquetting plants, a cutback of production potential is planned from 4.3 million tonnes in 1977 to 3.3 million tonnes in 1981 (see Table 7 in Annex).

#### IV — IRON-ORE MINES

According to the new survey, capital expenditure on iron-ore mines in the Community fell from 28.6 million EUA in 1976 to 19.4 million EUA in 1977. Expenditure per tonne of crude ore extracted also fell from 0.51 EUA in 1976 to 0.42 EUA in 1977.

Enterprises in France — particularly those on the Lorraine orefield — continued to account for the largest part of total investment spending in 1977, in absolute terms (12 million EUA) but their spending per tonne of crude ore extracted (0.31 EUA) was lower than the Community average.

In contrast, mines in Germany, which accounted for the next largest part of total investment, spent 5.1 million EUA — equivalent to 1.8 EUA per tonne of crude ore extracted.

The low level of capital expenditure for 1978 — 20.2 million EUA — reflects the very uncertain future facing a number of enterprises whose hopes of improving their competitiveness are realistic only if their ores are used in nearby blast-furnaces.

The competitiveness of local ores has steadily deteriorated as a result of the rise in processing costs of low Fe-content ore relative to high Fe-content ores and by the decline in prices of imported iron-ore. Moreover, mine production costs are burdened by a high level of fixed expenses, a situation typical of industries where capacities are rapidly decreasing and in which the ratio of productive to non-productive workers is also declining.

A number of major closures have already been decided on in western and eastern France which are expected to reduce French iron-ore production potential from 48.8 million tonnes in 1977 to 43.2 million tonnes in 1981. Between 1977 and 1978 closures will also have reduced production potential in Luxembourg from 1.9 million tonnes to 0.5 million tonnes. Hence total Community iron-ore production potential is expected to decrease from 60.4 million tonnes to 52.5 million tonnes. As local ore requirements are expected to continue to decrease, especially in eastern France, extensive mine closures additional to those already announced will be necessary and form part of restructuring plans now under close consideration. Even at current levels of pig-iron production, an announced iron-ore production potential of 52.5 million tonnes in 1981 — an estimate which will probably not be met — would not even allow the Community to cover more than 10% of its total iron-ore requirements from indigenous sources.

## V — IRON AND STEEL INDUSTRY

## 1. Capital expenditure

## 1.1. Capital expenditure in 1977

Between 1976 and 1977 capital expenditure in the Community steel industry decreased at current prices from 3 300 million EUA to 2 400 million EUA. In 1977 at current prices the investment per tonne of crude steel produced was therefore 19 EUA compared with 25 EUA in 1976.

Measured in terms of constant prices of 1970, capital expenditure in the steel industry continued to decline — from 1 800 million in 1976 to 1 100 million in 1977. In terms of 1970 prices, investment per tonne of crude steel produced reached a level of only 9 EUA in 1977.

TABLE VI  
Capital expenditure per tonne of crude steel produced 1970-77

*-EUA at constant prices of 1970*

	1970	1971	1972	1973	1974	1975	1976	1977
Community .....	15.4	21.5	21.4	16.9	13.5	16.1	13.3	8.9

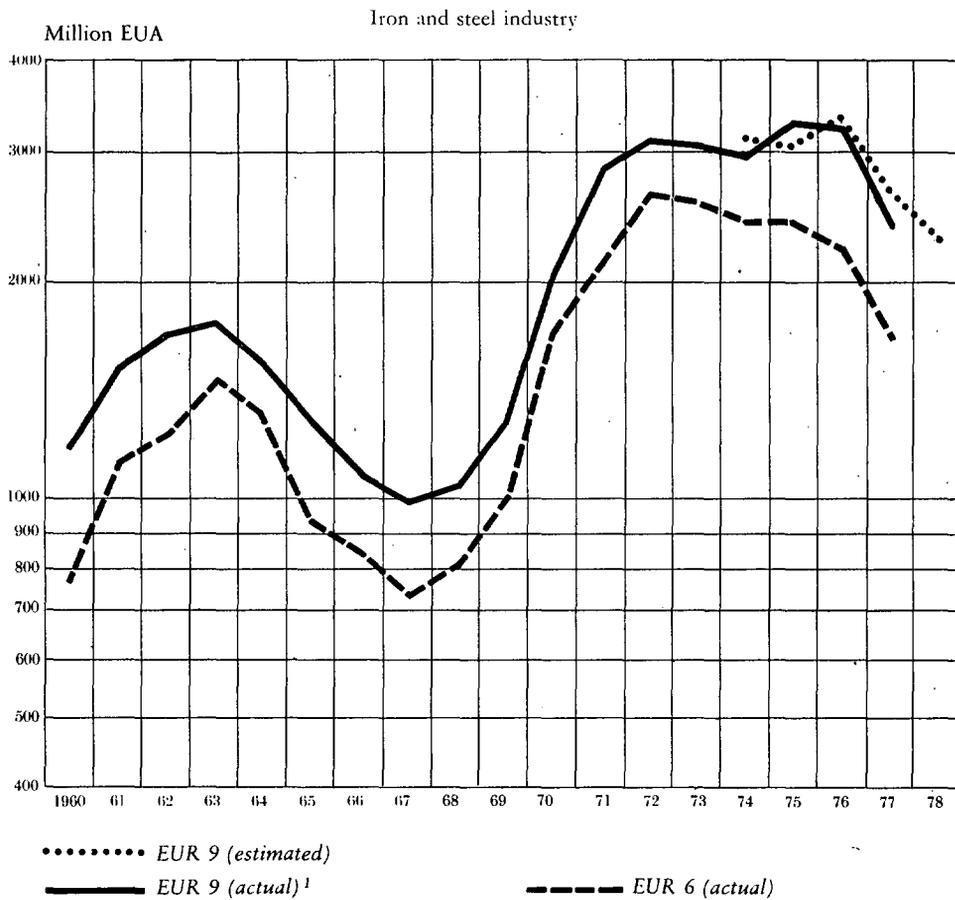
TABLE VII  
Capital expenditure per tonne of crude steel production potential 1973-77

*EUA at constant prices of 1970*

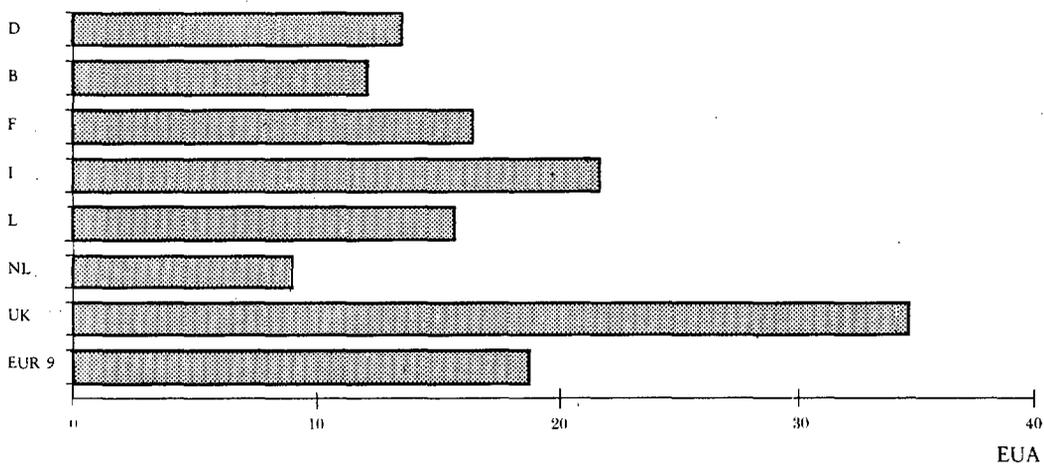
	1973	1974	1975	1976	1977	1978 forecast
Community .....	14.6	11.7	10.7	8.6	5.6	5.3

The United Kingdom — with a total investment of more than 700 million EUA at current prices — again accounted for the largest part of total Community capital expenditure. The countries with the next largest total investment were the Federal Republic of Germany and Italy — each with more than 500 million EUA. Between 1976 and 1977, there was a decline in investments in all countries except Luxembourg where the construction of a large blast-furnace is in progress.

FIGURE 4  
Comparison of actual capital expenditure  
and estimated capital expenditure as at the beginning of each year



Capital expenditure per ton of crude steel produced in 1977



<sup>1</sup> Capital expenditure included for the United Kingdom before 1973 is not strictly comparable to that declared for the other member countries since it includes expenditure on activities outside the ECSC, in particular on steel foundries, steel tubeworks and miscellaneous cold-working plants.

Total capital expenditure in the Community steel industry in 1977 at current prices was about 10% below that forecast at the beginning of the year. The rate of realization of spending was lowest for projects involving pig-iron production (80%) and highest for projects involving rolling mills (98%). Spending in North Rhine/Westphalia, Luxembourg and the Saar was considerably below that forecast due to delays to a number of major projects.

## 1.2. Capital expenditure in 1978

According to the survey capital expenditure in the iron and steel industry in 1978 should reach almost the same level as that achieved in 1977 — that is 2 400 million EUA. For the first time in several surveys, steel enterprises in the Federal Republic of Germany are expected to invest the largest amount (more than 600 million EUA) with United Kingdom enterprises the second largest (somewhat below 600 million EUA). In North Rhine/Westphalia, the Saar, Luxembourg, Ireland and the Netherlands, the enterprises forecast an overall increase in their investment spending; in all other regions some decrease is expected.

TABLE VIII  
Value of total investment decisions notified to the Commission 1969-77

million EUA at current prices

	Germany (FR)	Belgium	France	Italy	Luxembourg	Netherlands	EUR 6	United Kingdom	EUR 9
1969.....	850	102	384	99	12	401	1 912	*	*
1970.....	411	152	1 965	1 307	35	177	4 047	*	*
1971.....	274	25	201	132	29	8	669	*	*
1972.....	448	109	61	186	2	—	806	*	*
1973.....	122	221	76	216	20	38	694	*	*
1974.....	482	247	287	771	24	129	1 939	345	2 284
1975.....	416	301	389	314	9	—	1 429	750	2 179
1976.....	571	7	267	85	28	—	957	491	1 448
1977.....	284	—	278	261	113	89	1 025	309 <sup>1</sup>	1 380

\* Not available.

<sup>1</sup> Withdrawal in July 1978 of an investment notification made in 1977 (1 280 million EUA).

Reviewing the developments in capital expenditure for the main plant categories the most significant new trends seem to be the following:

- **Continuous casting:** increase from 187 million EUA in 1977 to 240 million EUA in 1978, due principally to projects in the Netherlands, North Rhine/Westphalia, eastern France and coastal Italy.
- **Hot wide strip mills:** an increase from 55 million EUA in 1977 to 64 million EUA in 1978 as a result of an extension project in North Rhine/Westphalia.

- **Bar and rod mills** : also expected to show a slight increase due to modernization and extension projects at mini-mills in southern Germany, northern Italy, as well as at integrated works in North Rhine/Westphalia and coastal Italy.

Expenditure on all other plant categories is expected either to remain stable at its 1977 level or to show a slight decrease. With the exception of the continuous casting and rolling mill projects mentioned above, the major projects accounting for forecast expenditure appear as in last year's survey to be the following :

- (1) in the United Kingdom, the pursuit, within now more limited objectives of the British Steel Corporation's investment programme, involves the concentration of iron and steelmaking on a limited number of sites and the completion of projects to expand tinplate and stainless steelmaking capacities. In the private sector of the industry, two major projects are also in progress — the construction of a new billet finishing mill in North Wales and the completion of the replacement of open-hearth steelworks in South Wales ;
- (2) in eastern France, North Rhine/Westphalia, northern Germany and Luxembourg, the modernization and replacement of blast-furnace capacities ;
- (3) in eastern France the replacement of obsolete steelmaking facilities by two new oxygen-blown steelworks for the supply of wide and narrow strip mills, and in the Saar, replacement of an ex-Thomas OBM steelworks by a new LD steelworks. A project already in progress for the construction of another oxygen steelworks in Lorraine is now being reassessed in the light of closer cooperation with another enterprise in the region. This reassessment could lead to the closure without replacement of one out of two obsolete steelworks ;
- (4) in Luxembourg, the completion of extensions to oxygen-blown steelworks designed to replace Basic Bessemer capacities ;
- (5) in North Rhine/Westphalia, north and central France, the replacement of open-hearth steelworks, mainly for the production of special steels.

## 2. Production and production potential

### 2.1. Rate of utilization of production potential in 1977

Production of crude steel in the Community decreased to a level of 126.1 million tonnes in 1977 compared with 134.2 million tonnes in 1976 — a fall of some 6%.

At the same time total Community crude-steel production potential increased by 3.0 million tonnes to a level of 200.7 million tonnes. This overall increase in production potential resulted principally from the following developments :

- the impact of a number of replacement and modernization schemes decided some years ago and leading to the commissioning of new plant ;
- reassessment by some enterprises of the capacity of some modern LD steelworks in North Rhine/Westphalia and northern France.

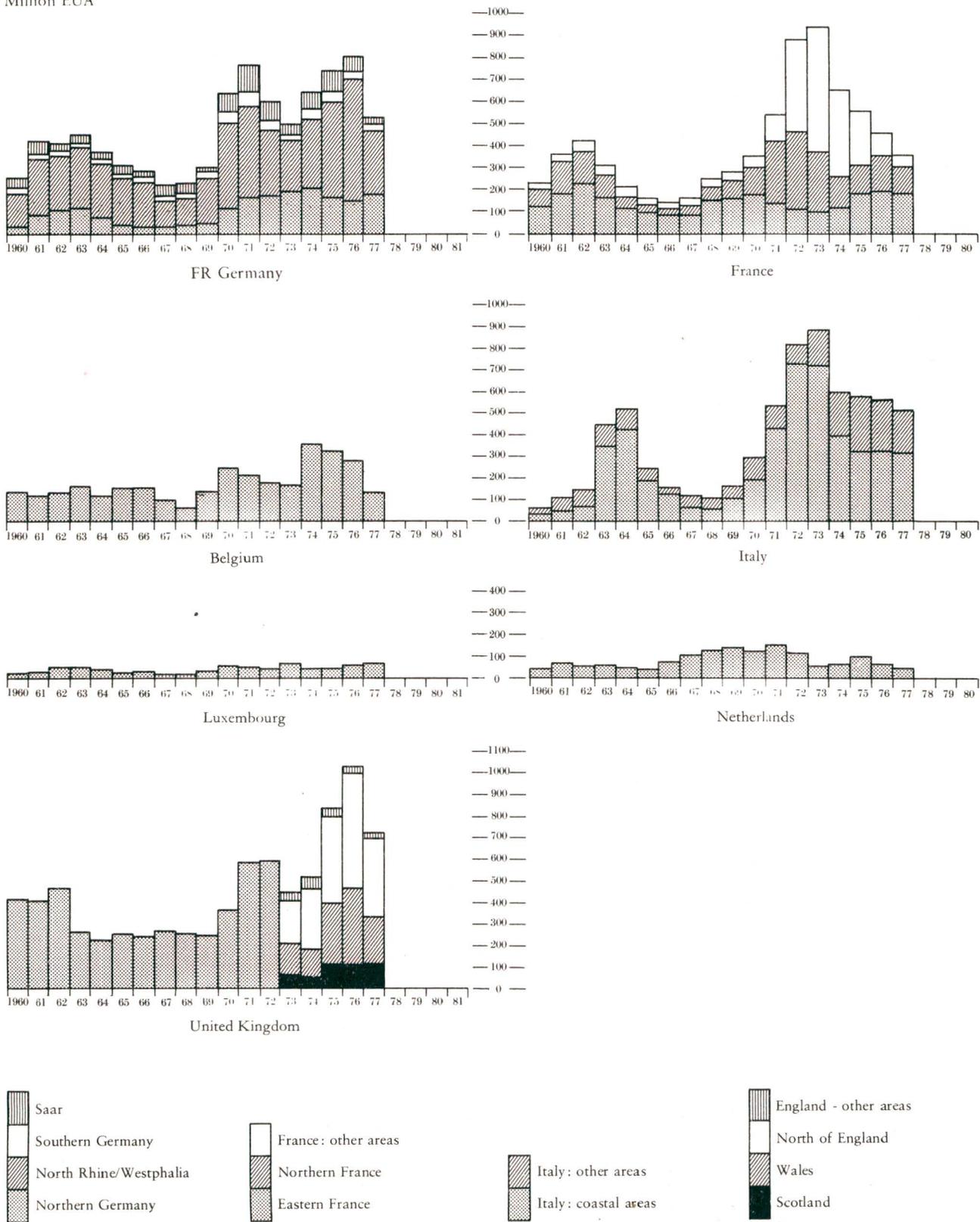
This increase was only partially offset by closures and the downward revision of the production potential of some integrated works in northern England (— 1 million tonnes) and Wales (— 0.4 million tonnes).

During the course of 1977, the process of closure of obsolete Basic Bessemer, ex-Thomas OBM and open-hearth capacities continued and accelerated. In most cases closures which did take place were forecast in last year's survey. However there were some additional closures including those of Basic Bessemer and ex-Thomas OBM steelworks in Belgium and partial closures of a number of open-hearth steelworks in

FIGURE 5

Capital expenditure in the iron and steel industry

Million EUA



North Rhine/Westphalia and the United Kingdom. Between 1976 and 1977, open-hearth production potential was reduced by 2.5 million tonnes and Basic Bessemer production potential by 1.8 million tonnes. Moreover, there was a decline of some 2 million tonnes in the production of potential of previously Basic Bessemer steelworks which had been converted to the OBM process.

TABLE IX  
Rates of utilization of Community production potential for pig-iron,  
crude steel and finished products 1974-77

	1974	1975	1976	1977
Pig-iron .....	87	65	66	62
Crude steel .....	87	66	68	63
Finished products .....	79	58	61	58

N.B. — Further details of rates of utilization are contained in Table 70 in the Annex to this report.

Due to the continued increase in production potential, the rate of capacity utilization fell proportionately more than actual production:

- for **crude steel** the rate of utilization fell from 67.8% in 1976 to 62.8% in 1977. The lowest rates were recorded in Ireland, the Federal Republic of Germany, Luxembourg, Denmark and Belgium. In all these countries capacity utilization was below 60%. The rate was highest in the United Kingdom (71%) where, against the general trend, production potential fell more rapidly. Some obsolete steelworks were withdrawn and a number of projects leading to capacity expansion at major coastal steelworks remain as yet incomplete.

Among the crude-steel processes, the lowest rate of utilization was recorded for Basic Bessemer and other processes (36%). OBM steelworks were also used to average only (57%) due to very low levels of activity in steelworks in Belgium and the Federal Republic of Germany. As a result in part of present low scrap costs and of the greater proportion of special steels in total output, electric steelworks, as in 1976, enjoyed a significantly higher rate of utilization than top-blown oxygen steelworks (72% compared with 62%).

- for **continuous casting** the rate of utilization was — at 66% — only slightly higher than that for crude steel production potential. This relatively low rate undoubtedly reflects the commissioning during the year of a large number of new continuous casters which were not used to their fullest extent. However, most slab casters were utilized to over 70%, given the higher rates of utilization in the flats sector;
- for **hot wide strip mills** the average rate of utilization was at the same level of 66% but there was considerable variation between the rates in different countries, ranging from 55% up to 75%;
- for **finished products** the average rate was 58% with a wide variation around this according to product and country. The lowest rates of utilization were recorded for plate (49%), narrow strip and strip for tubemaking (53%) and wire rod (58%), while capacities for cold-rolled sheet were the best utilized at 64%.

## 2.2. Expected production potential 1977-81

### *Sinter, pellets and sponge-iron*

Production of sponge-iron in 1977 was at a level of only 0.2 million tonnes. Total production potential for sponge-iron which was at a level of 0.7 million tonnes in 1977 is expected to reach a level of 2 million tonnes by 1981. The actual level in 1981 may however be lower; a project which has been decided on some years ago in Italy has not yet been started, and a further project which should be started shortly, but is not included in the survey estimates, in northern Germany will result in the installation of a capacity which will be less than initially planned. In addition, the new direct reduction units in Scotland, although now virtually complete, may not be commissioned until the market for sponge-iron improves significantly. A series of other projects have also been postponed or abandoned due both to the situation on the scrap market and to financial constraints.

Production for sinter and pellets should increase from 174.2 million tonnes in 1977 to 187.4 million tonnes in 1981. This increase is accounted for principally by the commissioning of new sinter capacity in northern England and North Rhine/Westphalia and the commissioning of a new pelletization plant on the north-east coast of England. Further restructuring measures yet to be decided on could reduce annual sinter production potential by 5 million tonnes between now and 1981.

### *Pig-iron and crude steel*

Total pig-iron production potential is expected to rise by 6.3 million tonnes between 1977 and 1981, from 142.2 million tonnes to 148.5 million tonnes, representing an increase of 1.1% p.a.

In the United Kingdom, a new large blast-furnace on the north-east coast of England will be fully commissioned by 1980 and there are other blast-furnace improvement schemes in progress in Scotland, Wales and the North of England. The increases in production potential brought about by these projects will only be partially offset by closures. As a result, total pig-iron production potential in the United Kingdom will increase by 3.8 million tonnes between 1977 and 1981. In northern Germany the commissioning of new plant will lead to a net increase of 1.2 million tonnes. Smaller net increases in production potential are forecast in North Rhine/Westphalia, coastal Italy and northern France.

In eastern France closures will bring about a net reduction in production potential over the period. Further blast-furnace closures are being envisaged in this region, in southern Belgium, the Saar and Luxembourg but their extent has yet to be determined.

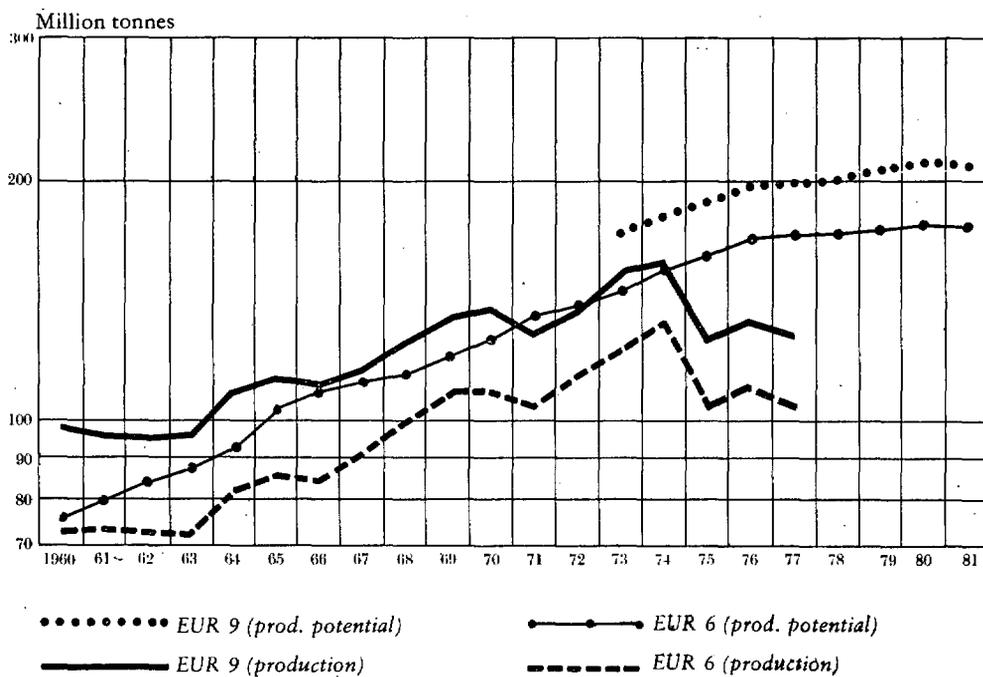
According to the survey, total crude-steel production potential should rise from 200.7 million tonnes in 1977 to 210.5 million tonnes in 1981 — an annual average increase of 1.2% even though in most regions and countries of the Community the growth in capacity over the four-year period is less than 1% p.a. In eastern France total crude-steel production potential is expected to decline from 14.6 million tonnes in 1977 to 13.3 million tonnes in 1981. In the Saar and Luxembourg the production potential forecast in the survey is 8.9 million tonnes and 8.2 million tonnes respectively. In the three regions the survey does not fully take into account restructuring plans now being envisaged.

Taking 1977 as a base, the major net increases in capacity which are expected by 1981 are in the United Kingdom (4.2 million tonnes) and Italy (2.6 million tonnes). In the United Kingdom, the capacity increase over the period is due principally to the commissioning of new plant at major coastal steelworks in Scotland, Wales and northern England, leading, in 1980-81, to the achievement of the production potential of 33 million tonnes p.a. originally forecast to be reached by 1978.

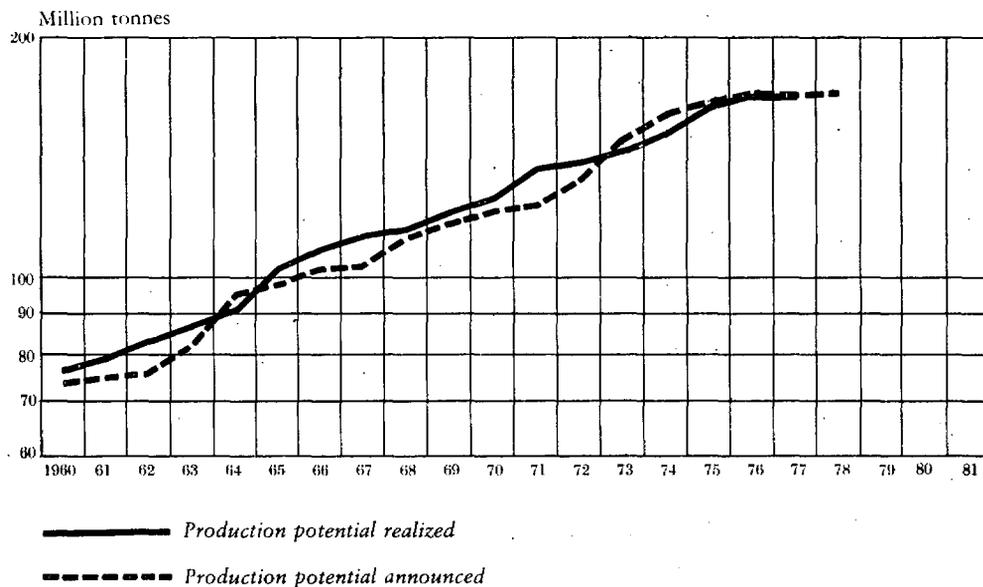
As regards the British Steel Corporation, when its recent and current investments are fully worked up, its capacity will be 27.5 million tonnes p.a. of crude steel after allowing for the effect of closures already

FIGURE 6

Actual production and production potential of the iron and steel industry  
Crude steel



Community crude steel production potential announced<sup>1</sup>  
and realized in the six original Member States of the Community



<sup>1</sup> i.e. production potential announced by the enterprises four years in advance.

announced in the survey. As stated in its publication *Prospects for Steel*,<sup>1</sup> the Corporation estimates that its future liquid-steel requirements in the medium term could be in the range of 16 to 22 million tonnes p.a. In the light of this forecast and consistent with it, the Corporation is taking further action to rationalize capacity beyond that already achieved.

In Italy, the forecast increase in total crude steel production potential of 2.6 million tonnes, from 34 million tonnes in 1977 to 36.6 tonnes in 1981, is principally due to the completion of schemes aimed at increasing electric-furnace capacities at a number of works.

In Germany, production potential is expected to increase by a total of 1.7 million tonnes over the period from 67.7 million tonnes in 1977 to 69.4 million tonnes in 1981 — the major net increases occurring as a result of modernization projects in oxygen-blown steelworks in northern Germany and in oxygen-blown and electric steelworks in North Rhine/Westphalia, in particular involving the installation of continuous casting.

#### *Continuous casting*

According to the new survey there is a significant acceleration in the introduction of continuous casting in the Community. 68.5 million tonnes of continuous casting capacity will be installed by 1981 — over 10 million tonnes higher than forecast by last year's survey. A number of major projects have been announced since the last survey — especially in the Netherlands, North Rhine/Westphalia and northern England. The addition of these projects will mean that total continuous casting production potential should increase from 48.8 million tonnes in 1977 to 68.5 million tonnes in 1981 to represent nearly 33% of crude steel production potential compared with only 24% in 1977.

TABLE X  
Ratio of continuous casting production potential to crude steel  
production potential in 1977 and 1981

Country	1977	1981
FR Germany .....	30.4	38.3
Belgium .....	16.7	20.3
France .....	20.1	32.3
Italy .....	38.5	47.5
Luxembourg .....	—	—
Netherlands .....	—	17.4
United Kingdom .....	16.3	22.3
Denmark .....	50.0	50.0
Ireland .....	—	100.0
Community	24.4	32.5

<sup>1</sup> British Steel Corporation, *Prospects for Steel*, London April 1978.

*Crude steel by process*

According to the new survey, 73% of Community crude steel-production potential in 1981 will be accounted for by oxygen-blown processes, 21% by electric steel, 5% open-hearth steel and less than 1% Basic Bessemer steel.

TABLE XI  
Share of each steelmaking process in total crude-steel production potential in 1973, 1977 and 1981

Crude steel	1973		1977		1981	
	million tonnes	%	million tonnes	%	million tonnes	%
Basic Bessemer and others .....	14.9	8	5.5	3	1.3	1
Open-hearth .....	28.9	17	17.9	9	9.9	5
Electric .....	26.4	15	38.0	19	44.5	21
Oxygen-blown .....	104.3	60	139.2	69	154.8	73
<i>of which</i> : OBM converted from Basic Bessemer .....	(4.0)	(2)	(7.0)	(3)	(2.9)	(1)
<b>Total crude steel</b>	<b>174.5</b>	<b>100</b>	<b>200.7</b>	<b>100</b>	<b>210.5</b>	<b>100</b>

Total Basic Bessemer production potential which still amounted to 5.5 million tonnes in 1977 will have almost completely phased out by 1981. **Open-hearth** capacities which totalled 17.9 million tonnes in 1977 should also decline over the period — by 8 million tonnes to 9.9 million tonnes in 1981. However, several large open-hearth steelworks will still then be in operation in North Rhine/Westphalia (totaling 4.8 million tonnes production potential) and Wales (1.3 million tonnes).

The capacity of old Basic Bessemer furnaces converted to the **bottom-blown oxygen process** (OBM/LWS) is also expected to decrease to a level of 2.9 million tonnes in 1981, compared with 7.0 million tonnes in 1977. No plans have yet been announced for the complete closure of these obsolete capacities. On the other hand the production potential of new OBM/LWS steelworks should rise from 5.8 million tonnes in 1977 to 13.7 million tonnes in 1981.

Production potential for **top-blown oxygen steels** is expected to reach a level of 138.2 million tonnes compared with 126.4 million tonnes in 1977 — a net increase of nearly 12 million tonnes. Nearly half of this increase is associated with extensions to iron and steelmaking capacity at the British Steel Corporation's five major steelmaking centres which are aimed to replace obsolete facilities elsewhere. By 1981 the commissioning of a new LD steelworks in the Saar will also have added a net 1.6 million tonnes to top-blown oxygen steel production potential. In northern Germany the commissioning of a new large blast-furnace to replace existing capacity will lead to an increase in LD steel production potential of 1 million tonnes. In the Netherlands the introduction of continuous casting, together with other improvements, will also allow crude-steel production potential to increase from 7.9 million tonnes in 1977 to 8.2 million tonnes in 1981. At the same time, the replacement of Basic Bessemer capacities in Luxembourg by LD-AC steel capacity will be continued.

The survey shows that electric steel production potential in the Community should reach a level of 44.5 million tonnes in 1981 compared with 38 million tonnes in 1977, at an average annual increase of 4%. The replacement of open-hearth capacities in North Rhine/Westphalia, Wales, northern France and Belgium accounts for most of the total increase of 6.5 million tonnes. Moreover, a number of schemes for the construction and extension of electric steelworks will lead to a net increase of 2.6 million tonnes in electric steel production potential in Italy. Difficulties continue to exist in the census of electric steel production potential in northern Italy.

TABLE XII  
Share of integrated coastal works<sup>1</sup> in total Community  
production potential for 1977 and 1981

	1977	1981
Crude steel .....	29	32
Continuous casting .....	29	32
Coils .....	52	55

<sup>1</sup> Bremen, IJmuiden, Sidmar, Dunkirk, Mondeville, Fos, Cornigliano, Piombino, Bagnoli, Taranto, Port Talbot, Llanwern, Scunthorpe, Redcar, Teesside, Ravenscraig.  
N.B.: This list includes works which, although not located on the coast, nevertheless may share some of the transport costs and other locational advantages of strictly coastal works.

### Coils and finished products

Total Community production potential for coils — that is, hot wide strip — is forecast by the survey to increase by an average 1.2% p.a. from 67.1 million tonnes in 1977 to 70.5 million tonnes in 1981. In most regions, there is some increase in capacity forecast, due both to minor improvements and to reevaluation of existing capacity based on recent production experience. The largest increases in production potential are forecast for Scotland and Wales where schemes already in progress at two major coastal works, and aimed at improving iron and steelmaking facilities, will increase production potential by 0.9 million tonnes and 0.7 million tonnes respectively.

According to the survey total heavy and light sections production potential in the Community will rise from 50.1 million tonnes to 51.3 million tonnes between 1977 and 1981. Rationalization in a number of works should lead to limited net reductions in North Rhine/Westphalia as well as in eastern France and Belgium, while increases to potential at works based on electric furnaces are expected to lead to an increase of a total of 0.9 million tonnes in northern Italy — nearly half of the increase for the Community as a whole.

Production potential for wire rod is expected to increase by 1.5 million tonnes to 19.1 million tonnes in 1981 from a level of 17.6 million tonnes in 1977, an average annual increase of 2.1%, relatively high compared with other finished products. Most of the increases forecast by the enterprises will be brought about either by the full commissioning of new plant which has recently been installed — in particular in Wales and in coastal Italy — or by schemes for improving existing mills. The construction of a new rod mill aimed at replacing obsolete equipment has been announced in southern Belgium. The continuation of the installation of a new large rod mill which has been suspended since 1976 is not included in the survey estimates but is still under consideration.

Total production potential for plate over 3 mm, that is the total of plate made on reversing plate mills or cut to length from coils, is forecast to increase from 24.9 million tonnes in 1977 to 26.2 million tonnes in 1981 — an average annual increase of 1.3%. The survey indicates no plans for closure of any existing reversing plate mills.

Throughout the Community practically no changes are forecast in capacities for **narrow strip and strip for tubemaking** including strip ex-coils. Between now and 1981, total production potential for these products will remain at a level of about 12 million tonnes p.a. The low level of capital expenditure for narrow strip mills seems to indicate that some enterprises have doubts about the necessity to keep production potential for narrow strip at its present level. According to the survey, production potential for **cold-rolled sheet** should increase by an average 1.2% p.a. between 1977 and 1981, from 42.7 million tonnes to 44.8 million tonnes. Widespread if limited increases are expected in North Rhine/Westphalia, southern Belgium and the Netherlands. Improvements to mills in Scotland and Wales will also result in increases in capacity but on a smaller scale — between 200 000 and 400 000 tonnes in each region. A further project which has not yet been decided could result in an additional production potential for cold-rolled sheet in Luxembourg.

Production potential for **hot-rolled sheet** is likely to remain stable between now and 1981 at a level of 1.5-1.6 million tonnes.

## Scope and definitions

## Statistical tables

### IMPORTANT NOTE

- (1) Because of rounding, some columns of figures in the tables do not agree with the totals in the decimal place.
- (2) As a result of the standardization of regions by the Commissions' departments, some of the undertakings which were included in the survey in northern France are now to be found in France 'Other regions'.

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## SCOPE AND DEFINITIONS

### I — Scope of survey

The survey is based on figures supplied by ECSC enterprises which in 1977 accounted for 99% of total coal production, 99% of crude steel production and 98% of finished products designated by the Treaty establishing the ECSC.

### II — Definitions

#### 1. Classification of investment projects

In their replies to the survey, the enterprises are asked to distinguish the effects on capital expenditure and production potential of the following three categories of investment project:

- Projects completed or in progress before 1 January 1978 (Category A);
- Projects approved but not yet in progress on 1 January 1978 (Category B);
- Other projects planned to be started between 1 January 1978 and 31 December 1981 (Category C).

#### 2. Capital expenditure

Capital expenditure means all expenditure shown or to be shown on the credit side of the balance-sheet as fixed assets in the year under review at the prices ruling in that year, but excluding the financing of workers' housing schemes, outside shareholdings and all interests not directly connected with ECSC Treaty products.

#### 3. Coal - Extraction potential

The figures shown represent the net maximum output technically achievable, allowing for the potential of the different installations at the collieries (underground, surface, washeries), and assuming that it is not impeded by difficulties in distribution, by strikes or by manpower shortages. The extraction is expressed for all countries in tonne = tonne.

A number of mines with a low output, including the German 'small mines' and the 'licensed mines' in the United Kingdom, have not been included in the survey. They accounted for an extraction in 1977 of 1.0 million tonnes.

#### 4. Coke - Production potential

The figures shown represent the maximum annual coke production achievable with the plant in operation at a given date, taking into account the minimum coking time technically allowable for the normal composition of the coking blend, with due regard to the state of the ovens and the potential of the ancillary and auxiliary installations. It is assumed that a ready market and unlimited raw material supplies are assured.

#### 5. Iron-ore - Extraction potential

The figures shown represent the maximum continuous output which can be achieved by each mine, allowing for the potential of the different installations, for example, underground or surface ore-preparation plant where the ore is sold only after treatment.

#### 6. Sinter, pig-iron, crude steel and finished steel products

Sinter, pig-iron, crude steel and rolled products production potential means the maximum production which can effectively be achieved by all the different sections of the plant together allowing for possible bottlenecks in one section holding up all the others. This maximum possible production is defined as follows:

‘Maximum possible production is the maximum production which it is possible to attain during the year under normal-working conditions, with due regard for repairs, maintenance and normal holidays, employing the plant available at the beginning of the year but also taking into account both additional production from any new plant installed and any existing plant to be finally taken off production in the course of the year. Production estimates must be based on the probable composition of the charge in each plant concerned, on the assumption that the raw materials will be available.’

Estimates of the maximum production potential of blast-furnaces and steelworks accounts for deliveries of pig-iron to all steelworks, not only those, for example, on the same site as the blast-furnaces.

Estimates of the production potential of rolling mills take into account all normal supplies of semi-products to the mills, not only those from adjacent steelworks. The production potential of rolling mills is also governed by the shape, quality and width of the material fed into the mill and the products to be obtained. Where enterprises have not been able to forecast future demand conditions, they have been asked to assume that the mix of inputs and outputs, on any one mill and across the different types of mill, will be broadly the same as that in 1977.

### III — Capital goods prices indices

The enterprises declare their capital expenditure at the ruling prices for the year concerned, the figures being converted into units of account at the rates shown at the beginning of this report. In order to gain some idea of how investments have changed from year to year on a constant price basis, two capital goods price indices have been prepared — one for the iron and steel industry and the other for the coal industry. For the period before 1970 this has been done by taking the national indices for prices of all capital goods and by weighting these indices in accordance with the share of each country in total Community investment in each of the industries concerned. For the years since 1970, the price indices used relate only to metal products and machinery.

The table below shows the indices calculated according to these methods. These indices have been applied to the main series of expenditure figures in the report.

Community index 1970 = 100	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977
Iron and steel industry .....	81.8	83.9	85.3	87.4	91.8	100	107.3	110.2	118.4	140.9	164.0	184.9	211.9 <sup>1</sup>
Coal industry .....	82.6	85.0	85.7	87.8	92.0	100	107.9	113.4	123.4	143.8	171.0	196.6	224.1 <sup>1</sup>

<sup>1</sup> Estimated.

#### IV — Interpretation of capital expenditure figures for 1976 and 1977

It should be borne in mind that even at current prices the figures given in this report for capital expenditure in 1976 and 1977 may differ from those in the 1977 report. There are three main reasons for this:

- first, for 1976, enterprises may revise their figures in the light of the completion of their final annual accounts;
- secondly, for 1977, actual spending by the enterprises may often depart from the expenditure estimates submitted at 1 January of that year;
- thirdly, again for 1977, the actual rates of exchange between the national currencies and the unit of account may differ from those used in the estimates of capital expenditure for the year ahead.

#### V — Breakdown of production potential and capital expenditure by region

In the tables, the producer regions in the original six countries other than those mentioned by name are:

Northern Germany:	Länder Schleswig-Holstein, Lower Saxony, Hamburg, Bremen;
Southern Germany:	Länder Hesse, Rhineland-Palatinate, Baden-Württemberg, Bavaria;
Eastern France:	Meurthe-et-Moselle, Meuse, Moselle, Bas-Rhin, Doubs;
Northern France:	Seine-et-Marne, Yvelines, Hauts-de-Seine, Seine-Saint-Denis, Ardennes, Aube, Marne, Haute-Marne, Oise, Eure, Calvados, Côte-d'Or, Nièvre, Saône-et-Loire, Nord, Pas-de-Calais;
Northern England:	(steel-producing regions only): North-West, Yorkshire and Humberside;
England — other regions:	(steel-producing regions only): West Midlands, East Midlands, East Anglia, South-West, South-East.

The National Coal Board Areas included in the coal-producing regions of the United Kingdom are as follows:

Scotland:	Scottish North, Scottish South;
Northumberland:	Northumberland, North Durham, South Durham;
Yorkshire:	North Yorkshire, South Yorkshire, Barnsley, Doncaster;
Western:	North-Western, Staffordshire;
Midlands:	North Nottingham, North Derbyshire, South Midlands;
Wales:	East Wales, West Wales.

Opencast mining has been considered as a separate category irrespective of regional locations.

For statistical purposes only, the production potential and capital expenditure of steel-producing enterprises in Berlin have been included in the totals for the regions of North-Rhine/Westphalia.

<b>HARD COAL COLLIERIES</b>
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Investments

**TABLE 1**  
**Capital expenditure by coalfields**

*million EUA*

Coalfield	Actual expenditure			Estimated expenditure <sup>3</sup>				
				on 1 Jan., 1977 for	on 1 Jan., 1978 for		1979	
	1975	1976	1977		1977 A+B	1978 A+B    A+B+C		1979 A+B    A+B+C
Ruhr <sup>1</sup> .....	126.4	172.9	166.0	179.3	174.5	174.5	170.4	225.4
Aachen <sup>2</sup> .....	8.9	29.3	24.1	23.3	14.3	17.0	6.7	14.7
Lower Saxony .....	17.9	18.3	20.7	18.4	14.9	14.9	5.0	11.7
Saar .....	25.0	32.8	37.9	52.2	70.5	77.2	45.8	71.4
<i>FR of Germany</i> .....	178.2	253.4	248.7	273.2	274.1	283.5	227.9	323.1
Campine .....	6.9	8.4	12.7	15.9	24.1	24.1	—	24.8
Southern Belgium .....	1.6	1.0	0.2	0.6	0.2	0.2	—	0.0
<i>Belgium</i> .....	8.5	9.4	12.9	16.5	24.3	24.3	—	24.9
Nord/Pas-de-Calais .....	6.0	8.0	7.5	6.9	6.0	6.0	4.8	4.8
Lorraine .....	17.4	30.6	35.5	40.6	37.2	37.2	28.4	28.4
Centre-Midi .....	4.3	3.5	5.4	5.0	4.3	4.3	5.0	5.0
<i>France</i> .....	27.7	42.2	48.6	52.5	47.5	47.5	38.3	38.3
<b>Total EUR 6</b>	<b>214.3</b>	<b>304.9</b>	<b>310.2</b>	<b>342.2</b>	<b>345.9</b>	<b>355.3</b>	<b>266.2</b>	<b>386.3</b>
Scotland .....	17.6	17.1	17.0	14.3	19.1		18.4	
North East .....	34.7	39.9	41.0	38.3	38.8		29.4	
Yorkshire .....	96.5	130.6	186.8	156.5	263.6		278.2	
Midlands and Kent .....	116.7	116.1	142.9	118.8	139.1		127.4	
Western .....	36.9	51.0	59.4	36.7	39.2		61.3	
South Wales .....	34.0	39.2	50.9	40.7	34.6		30.9	
Opencast mining .....	13.5	13.4	19.9	19.2	21.9	21.9	10.9	12.8
<i>United Kingdom</i> .....	349.9	407.2	518.0	424.5	556.2	615.2	556.5	683.1
<b>Total EUR 9</b>	<b>564.2</b>	<b>712.1</b>	<b>828.2</b>	<b>766.7</b>	<b>902.1</b>	<b>970.5</b>	<b>822.7</b>	<b>1 069.4</b>

<sup>1</sup> Without the expenses of the Ruhr part of EBV.

<sup>2</sup> Includes the expenses of the Ruhr part of EBV.

<sup>3</sup> The estimates relate only to expenditure on projects already in progress (cat. A) and approved (cat. B).

HARD COAL
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## Investment

TABLE 2

## Capital expenditure per tonne of coal produced 1974-1977

EUA tonne at current prices and current exchange rates

Regions	1974	1975	1976	1977
Ruhr .....	1.15	1.65	2.28	2.33
Aachen .....	1.02	1.56	3.29	2.89
Lower Saxony .....	1.42	9.94	9.13	9.82
Saar .....	0.98	2.84	3.53	4.09
<i>FR of Germany</i> .....	1.13	1.92	2.64	2.73
Campine .....	0.57	1.15	1.37	2.03
Southern Belgium .....	0.60	1.01	0.89	0.28
<i>Belgium</i> .....	0.58	1.12	1.30	1.83
Nord/Pas-de-Calais .....	0.52	0.77	1.10	1.15
Lorraine .....	1.04	1.71	3.07	3.53
Centre-Midi .....	0.58	0.93	0.76	1.18
<i>France</i> .....	0.74	1.22	1.93	2.28
Scotland .....	1.61	1.78	1.83	2.00
North East .....	2.35	2.34	2.98	3.22
Yorkshire .....	2.01	2.95	4.21	6.00
Midlands and Kent .....	2.32	3.10	3.20	3.99
Western .....	2.54	3.00	4.41	5.52
South Wales .....	2.60	3.95	4.99	6.88
Opencast mining .....	0.90	1.30	1.14	1.52
<i>United Kingdom</i> .....	2.11	2.77	3.36	4.34
<b>Total EUR 9</b>	<b>1.52</b>	<b>2.26</b>	<b>2.89</b>	<b>3.47</b>

<b>HARD COAL</b>
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<b>Extraction</b>
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TABLE 3

Extraction and extraction potential by coalfields

million tonnes (t = t)

Actual extraction 1977	Coalfield	Extraction potential			Expected extraction potential			
		1975	1976	1977	1978	1979	1980	1981
74.1	Ruhr.....	85.7	81.7	80.0	80.0	80.2	80.1	80.1
5.5	Aachen.....	6.0	5.9	5.8	5.8	5.8	5.8	5.8
2.1	Lower Saxony.....	1.9	2.1	2.2	2.3	2.4	2.4	2.4
9.3	Saar.....	10.1	10.2	10.5	10.8	10.9	10.9	10.9
91.0	<i>FR of Germany</i> .....	103.7	99.9	98.5	99.0	99.3	99.2	99.2
6.3	Campine.....	8.0	7.2	6.4	6.7	6.9	7.1	7.4
0.8	Southern Belgium.....	1.7	1.4	1.2	1.0	0.4	0.3	0.2
7.1	<i>Belgium</i> .....	9.7	8.6	7.5	7.8	7.3	7.4	7.6
6.6	Nord/Pas-de-Calais.....	7.8	7.5	6.7	5.7	5.0	4.3	3.6
10.0	Lorraine.....	10.6	11.2	10.2	10.0	10.1	10.2	10.1
4.6	Centre-Midi.....	4.8	4.7	4.7	4.1	3.9	3.5	3.3
21.3	<i>France</i> .....	23.2	23.3	21.7	19.9	18.9	18.0	17.0
119.3	<b>Total EUR 6</b>	<b>136.6</b>	<b>131.8</b>	<b>127.7</b>	<b>126.7</b>	<b>125.5</b>	<b>124.6</b>	<b>123.8</b>
8.6	Scotland.....	10.2	10.3	9.1	8.8	8.7	8.9	8.4
12.7	Northern.....	15.0	14.3	13.8	13.2	12.7	12.6	12.2
31.1	Yorkshire.....	34.0	33.1	33.4	33.1	33.9	33.9	35.5
35.8	Midlands and Kent.....	37.7	38.4	38.8	38.9	39.5	39.8	40.2
10.8	Western.....	13.1	12.4	11.6	11.7	12.1	12.0	11.5
7.6	South Wales.....	8.8	8.5	7.9	8.0	8.2	8.4	8.5
13.6	Opencast.....	10.5	11.7	13.6	12.8	12.8	12.4	11.0
120.1	<i>United Kingdom</i> .....	129.3	128.7	128.2	126.4	127.9	128.1	127.1
239.5	<b>Total EUR 9</b>	<b>265.9</b>	<b>260.5</b>	<b>255.9</b>	<b>253.1</b>	<b>253.4</b>	<b>252.7</b>	<b>250.9</b>

**STEELWORKS-OWNED,  
MINE-OWNED  
AND INDEPENDENT  
COKING PLANTS**

TABLE 4

Capital expenditure by coalfields

Investment

million EUA

Area	Actual expenditure			Estimated expenditure		
				on 1 Jan., 1977 for	on 1 Jan., 1978 for	
	1975	1976	1977	1977	1978	1979
<b>Mine-owned coking plants</b>						
Ruhr <sup>1</sup> .....	17.9	28.0	41.9	31.9	26.4	11.9
Aachen <sup>2</sup> .....	6.9	4.1	2.1	2.0	0.6	0.4
Saar .....	1.8	3.4	4.2	7.3	7.6	0.5
<i>FR of Germany</i> .....	26.6	35.4	48.2	41.2	34.6	12.8
Nord/Pas-de-Calais .....	1.7	2.8	2.3	2.4	3.0	4.0
Lorraine .....	12.7	19.6	30.4	32.2	19.5	9.0
Centre-Midi .....	0.2	0.0	0.2	0.1	0.0	0.3
<i>France</i> .....	14.5	22.4	32.9	34.7	22.5	13.3
<b>Total EUR 6</b>	<b>41.1</b>	<b>57.8</b>	<b>81.1</b>	<b>75.9</b>	<b>57.1</b>	<b>26.1</b>
<i>United Kingdom</i> .....	1.8	1.5	2.1	5.5	4.0	13.5
<b>Total EUR 9</b>	<b>42.9</b>	<b>59.3</b>	<b>83.2</b>	<b>81.4</b>	<b>61.1</b>	<b>39.6</b>
<b>Independent coking plants</b>						
<i>Belgium and Netherlands</i> .....	1.3	1.8	0.3	0.3	0.1	0.5
<i>Italy</i> .....	4.6	10.5	11.1	11.8	4.2	2.5
<b>Total EUR 6</b>	<b>5.9</b>	<b>12.3</b>	<b>11.4</b>	<b>12.1</b>	<b>4.3</b>	<b>3.0</b>
<i>United Kingdom</i> .....	—	0.6	0.8	0.3	0.7	—
<b>Total EUR 9</b>	<b>5.9</b>	<b>12.9</b>	<b>12.2</b>	<b>12.4</b>	<b>4.3</b>	<b>3.0</b>
<b>Steelworks-owned coking plants</b>						
<i>FR of Germany</i> .....	6.2	2.2	6.4	6.0	22.3	21.2
<i>Belgium and Netherlands</i> .....	18.1	14.7	10.9	14.9	8.5	5.4
<i>France</i> .....	15.1	21.0	22.5	22.4	16.7	8.9
<i>Italy</i> .....	27.9	24.5	18.8	27.1	16.3	19.2
<b>Total EUR 6</b>	<b>67.3</b>	<b>62.4</b>	<b>58.6</b>	<b>70.4</b>	<b>63.8</b>	<b>54.7</b>
Scotland .....	0.0	7.6	7.0	7.2	5.5	—
South Wales .....	11.0	31.4	59.5	68.7	53.2	14.9
Northern England .....	105.1	62.8	33.4	39.4	26.6	4.7
England - other areas .....	0.8	0.4	1.2	0.9	3.8	1.9
<i>United Kingdom</i> .....	116.9	102.2	101.1	116.2	89.1	21.5
<b>Total EUR 9</b>	<b>184.2</b>	<b>164.6</b>	<b>159.7</b>	<b>186.6</b>	<b>152.9</b>	<b>76.2</b>
<b>Grand total EUR 6</b>	<b>114.3</b>	<b>132.5</b>	<b>151.1</b>	<b>158.4</b>	<b>125.2</b>	<b>83.8</b>
<b>Grand total EUR 9</b>	<b>233.0</b>	<b>236.8</b>	<b>255.1</b>	<b>280.4</b>	<b>218.3</b>	<b>118.8</b>

<sup>1</sup> Without the expenses of the Ruhr part of EBV.<sup>2</sup> Includes the expenses of the Ruhr part of EBV.

<b>COKE</b>
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**Production**

TABLE 5

**Production and production potential by regions**

*million tonnes*

Actual production	Region	Extraction potential			Expected extraction potential			
		1975	1976	1977	1978	1979	1980	1981
1977								
	<b>Mine-owned coking plants</b>							
17.0	Ruhr.....	24.1	23.6	21.1	19.5	18.8	18.9	18.9
1.8	Aachen.....	1.3	2.0	2.0	2.0	2.0	2.0	2.0
1.3	Saar.....	1.5	1.5	1.5	1.5	1.5	1.5	1.5
20.1	<i>FR of Germany</i> .....	26.9	27.1	24.5	23.0	22.2	22.3	22.4
2.8	Nord/Pas-de-Calais.....	4.8	4.8	4.8	3.0	2.9	2.9	2.9
2.0	Lorraine.....	2.3	2.3	2.7	2.5	2.6	2.6	2.6
0.4	Centre-Midi.....	0.5	0.5	0.5	0.5	0.5	0.5	0.5
5.2	<i>France</i> .....	7.6	7.6	8.0	6.0	6.0	6.0	6.0
25.3	<b>Total EUR 6</b>	34.5	34.7	32.5	29.0	28.2	28.3	28.4
4.0	<i>United Kingdom</i> .....	4.7	4.7	4.6	4.2	3.3	3.1	3.2
29.3	<b>Total EUR 9</b>	39.2	39.4	37.1	33.2	31.5	31.4	31.6
	<b>Independent coking plants</b>							
0.7	<i>Belgium and Netherlands</i> ..	1.0	0.8	0.8	0.6	0.6	0.6	0.6
1.6	<i>Italy</i> .....	2.6	2.6	2.6	2.6	2.6	2.6	2.6
2.3	<b>Total EUR 6</b>	3.6	3.4	3.4	3.2	3.2	3.2	3.2
0.1	<i>United Kingdom</i> .....	0.9	0.8	0.6	0.5	0.5	0.5	0.5
2.4	<b>Total EUR 9</b>	4.5	4.2	4.0	3.7	3.7	3.7	3.7
	<b>Steelworks-owned coking plants</b>							
7.4	<i>FR of Germany</i> .....	8.9	9.6	9.1	9.1	9.6	9.6	9.6
7.4	<i>Belgium and Netherlands</i> ..	10.3	10.2	10.7	10.1	10.0	9.9	9.9
5.6	<i>France</i> .....	6.9	6.7	6.7	6.7	6.7	6.8	6.6
76.1	<i>Italy</i> .....	8.4	9.0	9.0	9.0	9.0	9.0	9.0
26.5	<b>Total EUR 6</b>	34.5	35.5	35.5	34.9	35.3	35.3	35.1
0.9	Scotland.....	1.1	1.2	1.1	1.0	1.1	1.3	1.3
2.9	Wales.....	3.5	3.9	3.7	3.1	3.6	3.6	3.4
3.7	Northern England.....	4.7	5.1	4.0	4.2	5.9	5.7	5.4
0.6	England - other regions.....	1.0	0.9	0.9	0.7	0.7	0.7	0.7
8.1	<i>United Kingdom</i> .....	10.3	11.1	9.6	8.9	11.3	11.3	10.8
34.6	<b>Total EUR 9</b>	44.8	46.6	45.1	43.8	46.6	46.6	45.9
54.1	<b>Grand total EUR 6</b>	72.6	73.6	71.4	67.1	66.7	66.8	66.7
66.3	<b>Grand total EUR 9</b>	88.5	90.2	86.2	80.7	81.8	81.7	81.2

<b>HARD COAL BRIQUETTES</b>
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<b>Production</b>
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TABLE 6

## Production and production potential by regions

million tonnes

Actual production 1977	Region <sup>1</sup>	Extraction potential			Expected extraction potential			
		1975	1976	1977	1978	1979	1980	1981
0.7	Ruhr.....	0.8	0.8	0.7	0.8	0.3	0.8	0.8
0.5	Aachen.....	1.1	1.0	1.0	1.0	1.0	1.0	1.0
0.2	Lower Saxony.....	0.7	0.7	0.7	0.7	0.7	0.7	0.7
1.3	FR of Germany.....	2.6	2.5	2.3	2.4	2.4	2.4	2.4
0.1	Belgium.....	0.6	0.3	0.3	0.3	0.3	0.2	0.1
1.4	Nord/Pas-de-Calais.....	2.7	2.7	2.0	1.5	1.5	1.5	1.5
0.4	Centre-Midi.....	0.8	0.8	0.8	0.8	0.8	0.8	0.3
0.4	Independant plants <sup>1</sup> .....	0.8	0.8	0.8	0.7	0.7	0.6	0.6
2.2	France.....	4.3	4.3	3.6	3.0	3.0	2.9	2.4
3.6	<b>Total EUR 6</b>	7.5	7.1	6.2	5.7	5.7	5.5	4.9
1.1	United Kingdom.....	1.2	1.2	1.1	1.1	1.0	1.0	0.8
4.7	<b>Total EUR 9</b>	8.7	8.3	7.3	6.8	6.7	6.5	5.7

<sup>1</sup> Estimate.

<b>BROWN COAL BRIQUETTES</b>
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<b>Production</b>
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TABLE 7

## Production and production potential for BKB (brown coal briquettes)

million tonnes

Actual production 1977		Extraction potential			Expected extraction potential			
		1975	1976	1977	1978	1979	1980	1981
4.1	<b>Total EUR 6</b>	5.8	4.8	4.3	3.9	3.7	3.5	3.3

IRON ORE MINING
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## Investment

TABLE 8  
Capital expenditure by country

million EUA

Country	Actual expenditure			Estimated expenditure (projects in progress, and approved)		
				on 1 Jan., 1977 for 1977	on 1 Jan., 1978 for	
	1975	1976	1977	1977	1978	1979
FR of Germany.....	4.8	6.0	5.1	3.2	6.8	0.8
Belgium.....	0.0	—	—	—	—	—
France.....	26.8	20.8	12.1	16.8	11.1	1.8
Italy.....	0.2	0.3	0.2	0.4	0.3	—
Luxembourg.....	1.0	1.2	0.8	0.8	0.6	—
<b>Total EUR 6</b>	<b>32.9</b>	<b>28.3</b>	<b>18.2</b>	<b>21.2</b>	<b>18.8</b>	<b>2.6</b>
United Kingdom.....	0.7	0.3	1.2	1.5	1.4	3.0
<b>Total EUR 9</b>	<b>33.6</b>	<b>28.6</b>	<b>19.4</b>	<b>22.7</b>	<b>20.2</b>	<b>5.6</b>

IRON ORE MINING
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## Extraction

TABLE 9  
Capital expenditure by category

million tonnes

Sectors	Actual expenditure			Estimated expenditure (cat. A + B)	
	1975	1976	1977	1978	1979
Extraction of ore.....	28.4	24.1	16.6	17.2	5.2
Mine-based preparations of ore.....	0.9	0.2	0.3	0.2	0.0
Miscellaneous surface.....	4.3	4.3	2.5	2.8	0.4
<b>Total</b>	<b>33.6</b>	<b>28.6</b>	<b>19.4</b>	<b>20.2</b>	<b>5.6</b>

<b>IRON ORE MINING</b>
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Extraction

TABLE 10  
Extraction and extraction potential by country

*million tonnes*

Country	Extraction		Extraction potential				
	1976	1977	1977	1978	1979	1980	1981
<i>FR of Germany</i> .....	3.0	2.9	3.3	2.0	2.2	2.2	2.2
<i>Belgium</i> .....	—	0.0	0.1	0.1	0.1	0.1	0.1
<i>France</i> .....	45.5	37.0	48.7	46.1	45.6	44.7	43.2
<i>Italy</i> .....	0.6	0.4	0.4	0.5	0.5	0.5	0.5
<i>Luxembourg</i> .....	2.1	1.5	1.9	0.5	0.5	0.5	0.5
<b>Total EUR 6</b>	<b>51.3</b>	<b>41.8</b>	<b>54.4</b>	<b>49.2</b>	<b>48.9</b>	<b>48.0</b>	<b>46.5</b>
<i>United Kingdom</i> .....	4.6	3.8	6.0	5.7	5.7	6.0	6.0
<b>Total EUR 9</b>	<b>55.9</b>	<b>45.6</b>	<b>60.4</b>	<b>54.9</b>	<b>54.6</b>	<b>54.0</b>	<b>52.5</b>

<b>IRON AND STEEL INDUSTRY</b>
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**Total Investment**

**TABLE 11**  
Capital expenditure by regions

million EUA

Region	Actual expenditure			Estimated expenditure (projects in progress, and approved)		
				on Jan. 1, 1977 for	on Jan. 1, 1978 for	
	1975	1976	1977	1977	1978	1979
Northern Germany .....	172.3	169.0	118.3	132.2	60.5	36.7
North Rhine/Westphalia .....	438.1	554.0	354.4	446.0	447.4	318.4
Southern Germany .....	38.8	23.8	32.6	24.4	33.6	7.6
Saar .....	92.0	76.3	28.1	60.9	69.3	48.7
<i>FR of Germany</i> .....	741.1	823.1	533.4	663.5	610.8	411.4
<i>Belgium</i> .....	349.1	276.9	137.8	138.7	83.2	33.7
Eastern France .....	192.3	198.5	181.5	165.2	217.6	163.5
Northern France.....	135.1	163.7	130.3	108.0	93.3	34.5
France - other areas .....	247.1	98.6	55.4	81.5	48.2	21.3
<i>France</i> .....	574.4	460.8	367.2	354.7	359.1	219.3
Italy - coastal areas .....	349.4	328.4	314.1	352.5	288.0	448.3
Italy - other areas .....	247.6	233.1	195.3	158.6	141.6	114.0
<i>Italy</i> .....	597.1	561.5	509.4	511.1	429.6	562.3
<i>Luxembourg</i> .....	50.7	56.6	68.3	124.3	131.9	26.1
<i>Netherlands</i> .....	111.2	67.0	45.4	51.0	84.3	59.2
<b>Total EUR 6</b>	<b>2 423.6</b>	<b>2 245.9</b>	<b>1 661.5</b>	<b>1 843.1</b>	<b>1 698.9</b>	<b>1 312.0</b>
Scotland.....	90.3	107.8	114.8	118.2	106.9	33.5
Wales .....	301.3	359.4	213.6	264.9	187.7	76.8
Northern England.....	409.8	537.1	360.4	384.7	267.0	82.3
England - other areas .....	43.1	27.5	21.8	26.1	17.4	8.7
<i>United Kingdom</i> .....	844.6	1 031.8	710.6	793.9	579.0	201.3
<i>Denmark</i> .....	48.1	15.6	5.6	8.4	—	—
<i>Ireland</i> .....	0.5	0.1	0.7	9.6	6.8	23.6
<b>Total EUR 9</b>	<b>3 316.8</b>	<b>3 293.3</b>	<b>2 378.4</b>	<b>2 655.0</b>	<b>2 284.7</b>	<b>1 536.8</b>
<b>Total EUR 9 at constant 1970 prices</b>	<b>2 022.4</b>	<b>1 781.1</b>	<b>1 122.4</b>	<b>1 435.9</b>	<b>1 078.1</b>	<b>725.2</b>

<sup>1</sup> See note 2, p. 47.

IRON AND STEEL INDUSTRY
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Total investment

TABLE 12  
Capital expenditure by type of installation

million EUA

Type of installation	Actual expenditure			Estimated expenditure (cat. A + B)	
	1975	1976	1977	1978	1979
Plant for production of:					
Pig iron .....	782.7	813.9	602.2	546.2	250.4
Steel .....	598.8	582.0	460.8	446.7	275.9
Rolled products .....	1 406.0	1 354.6	950.2	948.7	834.4
General services .....	529.3	542.7	365.1	343.0	176.1
<b>Total</b>	<b>3 316.8</b>	<b>3 293.3</b>	<b>2 378.4</b>	<b>2 284.7</b>	<b>1 536.8</b>
<b>Total at constant 1970 prices</b>	<b>2 022.4</b>	<b>1 781.1</b>	<b>1 122.4</b>	<b>1 078.1</b>	<b>725.2</b>

IRON AND STEEL INDUSTRY ESTIMATED / ACTUAL CAPITAL EXPENDITURE
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Investment

TABLE 13  
Capital expenditure in 1977 by stages in production

million EUA

Stage in production	Estimates	Actual amounts spent	Agreement with estimates %
	(1)	(2)	(3) = (2) : (1)
Pig iron .....	748.3	602.2	80.5
Crude steel .....	526.9	460.8	87.5
Rolling mills .....	966.2	950.3	98.4
General services .....	413.6	365.1	88.3
<b>Total iron and steel industry</b>	<b>2 655.0</b>	<b>2 378.4</b>	<b>89.6</b>

<b>IRON AND STEEL INDUSTRY ESTIMATED / ACTUAL CAPITAL EXPENDITURE</b>
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Investment

TABLE 14  
Capital expenditure in 1977 by countries

Country	Estimated national currency(1)	Achieved national currency(2)	Rate of achievement % at current prices (3) = (2) : (1)
FR of Germany .....	DM (million) 1 757.2	DM (million) 1 412.6	80.4
Belgium .....	BFR (million) 5 670.4	BFR (million) 5 633.6	99.4
France .....	FF (million) 1 988.5	FF (million) 2 058.5	103.5
Italy .....	LIT (thousand million) 514.6	LIT (thousand million) 512.9	99.7
Luxembourg .....	LFR (million) 5 081.7	LFR (million) 2 792.3	55.0
Netherlands .....	HFL (million) 142.8	HFL (million) 127.1	89.0
United Kingdom .....	UKL (million) 519.0	UKL (million) 464.5	89.5
Denmark .....	DKR (million) 57.6	DKR (million) 38.4	66.7
Ireland .....	IRL (million) 6.3	IRL (million) 0.5	7.9
Total	million EUA 2 655.0	million EUA 2 378.4	89.6

**STEELWORKS  
OWNED COKING PLANTS,  
BURDEN PREPARATION,  
DIRECT REDUCTION  
AND BLAST-FURNACES**

Total investment

TABLE 15  
Capital expenditure by type of installation

*million EUA*

Sectors	Actual expenditure			Estimated expenditure (cat. A + B)	
	1975	1976	1977	1978	1979
Steelworks coking plants .....	184.2	164.6	159.8	152.9	76.1
Burden preparation and direct reduction .....	214.1	221.3	122.1	132.5	63.6
Blast-furnace .....	384.4	428.0	320.3	260.8	110.7
<b>Total</b>	<b>782.7</b>	<b>813.9</b>	<b>602.2</b>	<b>546.2</b>	<b>250.4</b>

<b>BLAST FURNACES</b>
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<b>Investment</b>
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TABLE 16  
Capital expenditure by regions

million ECU

Region	Actual expenditure			Estimated expenditure (projects in progress, and approved)		
	1975	1976	1977	on Jan. 1, 1977 for	on Jan. 1, 1978 for	
				1977	1978	1979
Northern Germany .....	9.8	37.1	45.7	41.5	5.9	2.7
North Rhine/Westphalia .....	85.4	119.9	44.8	90.8	42.7	23.2
Southern Germany .....	0.3	2.0	0.2	0.5	0.3	0.4
Saar .....	6.9	10.7	2.2	4.7	5.3	4.1
FR of Germany .....	102.4	169.7	92.9	137.5	54.2	30.4
Belgium .....	35.4	18.0	13.9	13.4	2.8	1.1
Eastern France .....	59.9	53.8	28.6	28.5	28.6	11.3
Northern France.....	3.5	5.2	6.6	6.2	7.5	2.6
France - other areas .....	17.5	10.9	4.0	0.3	1.9	1.3
France .....	80.9	69.9	39.2	35.0	38.0	15.2
Italy - coastal areas .....	50.0	84.9	76.3	60.7	20.9	18.4
Italy - other areas .....	1.3	2.3	2.2	0.5	2.7	16.8
Italy .....	51.3	87.2	78.5	61.2	23.6	35.2
Luxembourg.....	5.3	2.2	17.4	47.0	73.8	13.7
Netherlands .....	12.1	6.8	2.9	6.1	4.6	3.3
<b>Total EUR 6</b>	<b>287.5</b>	<b>353.8</b>	<b>244.8</b>	<b>300.1</b>	<b>197.0</b>	<b>98.9</b>
Scotland .....	2.6	9.6	12.2	12.3	12.1	2.1
Wales .....	22.5	32.5	19.0	17.8	8.5	1.7
Northern England.....	69.7	28.8	43.4	37.6	42.0	7.5
England - other areas .....	2.1	3.3	0.9	1.3	1.1	0.5
United Kingdom.....	97.0	74.2	75.5	69.0	63.7	11.8
Denmark .....	—	—	—	—	—	—
Ireland .....	—	—	—	—	—	—
<b>Total EUR 9</b>	<b>384.4</b>	<b>428.0</b>	<b>320.3</b>	<b>369.1</b>	<b>260.7</b>	<b>110.7</b>

<sup>1</sup> See note 2, p. 47.

**STEELWORKS-OWNED  
COKING PLANTS, BURDEN  
PREPARATION,  
DIRECT REDUCTION  
AND BLAST FURNACES  
TOTAL**

TABLE 17  
Capital expenditure by regions

Investment

million EUA

Region	Actual expenditure			Estimated expenditure (projects in progress, and approved)		
				on Jan. 1, 1977 for	on Jan. 1, 1978 for	
	1975	1976	1977	1977	1978	1979
Northern Germany .....	15.8	44.9	57.5	57.9	13.3	3.5
North Rhine/Westphalia .....	99.8	131.3	64.8	125.0	114.8	88.2
Southern Germany .....	1.1	2.7	0.3	0.5	0.4	0.3
Saar .....	8.5	11.0	2.3	4.8	5.3	4.1
<i>FR of Germany</i> .....	125.1	189.9	124.9	188.2	133.8	96.1
<i>Belgium</i> .....	90.8	66.4	37.1	39.9	12.6	5.3
Eastern France .....	82.0	89.7	50.8	54.7	49.4	23.2
Northern France.....	7.9	10.0	7.3	7.7	8.0	2.7
France - other areas .....	41.7	26.4	11.0	6.4	5.2	2.2
<i>France</i> .....	131.6	126.1	69.1	68.8	62.6	28.1
Italy - coastal areas .....	97.6	116.4	104.0	106.1	49.7	40.2
Italy - other areas .....	1.3	2.9	2.8	0.5	3.7	17.7
<i>Italy</i> .....	98.9	119.3	106.8	106.6	53.4	57.9
<i>Luxembourg</i> .....	7.6	3.9	18.6	49.2	74.2	14.0
<i>Netherlands</i> .....	23.3	18.9	7.9	12.4	7.6	5.4
<b>Total EUR 6</b>	<b>477.2</b>	<b>524.5</b>	<b>364.4</b>	<b>465.1</b>	<b>344.2</b>	<b>206.8</b>
Scotland .....	41.4	68.7	62.1	71.2	40.8	4.7
Wales .....	62.6	92.6	82.2	105.7	67.7	16.9
Northern England.....	198.2	122.1	87.7	101.0	87.5	18.8
England - other areas .....	3.2	6.0	5.8	5.3	6.0	3.2
<i>United Kingdom</i> .....	305.4	289.4	237.8	283.2	202.0	43.6
<i>Denmark</i> .....	—	—	—	—	—	—
<i>Ireland</i> .....	—	—	—	—	—	—
<b>Total EUR 9</b>	<b>782.7</b>	<b>813.9</b>	<b>602.2</b>	<b>748.3</b>	<b>546.2</b>	<b>250.4</b>

<sup>1</sup> See note 2, p. 47.

STEELWORKS
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## Investment

TABLE 18  
Capital expenditure according to production process

million EUA

Process	Actual expenditure			Estimated expenditure (cat. A + B)	
	1975	1976	1977	1978	1979
OBM, LWS and similar .....	49.8	79.7	97.5	123.9	92.5
Open-hearth .....	14.6	41.0	26.2	13.0	8.2
Electric furnace.....	281.3	226.8	174.2	140.0	79.6
LD, Kaldo (Basic Bessemer and other) .....	253.2	234.5	162.9	169.8	95.6
<b>Total</b>	<b>598.8</b>	<b>582.0</b>	<b>460.8</b>	<b>446.7</b>	<b>275.9</b>

<b>OPEN HEARTH STEELWORKS</b>
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**Investment**

**TABLE 19**  
**Capital expenditure by regions**

*million EUA*

Region	Actual expenditure			Estimated expenditure (projects in progress, and approved)		
				on Jan. 1, 1977 for	on Jan.1, 1978 for	
	1975	1976	1977	1977	1978	1979
Northern Germany .....	1.7	1.4	1.3	0.8	3.0	1.9
North Rhine/Westphalia .....	6.8	37.2	23.2	19.8	9.4	6.2
Southern Germany .....	0.4	0.2	0.2	0.0	0.1	—
Saar .....	0.0	0.0	0.0	0.0	—	—
<i>FR of Germany</i> .....	9.0	38.8	24.7	20.6	12.6	8.1
<i>Belgium</i> .....	—	—	—	—	—	—
Eastern France .....	0.7	1.2	—	—	—	—
Northern France.....	0.3	0.2	0.8	0.8	0.1	—
France - other areas .....	1.0	—	—	—	—	—
<i>France</i> .....	2.1	1.4	0.8	0.8	0.1	—
Italy - coastal areas .....	0.2	—	—	0.1	—	—
Italy - other areas .....	2.4	0.6	0.2	0.3	0.1	0.1
<i>Italy</i> .....	2.6	0.6	0.2	0.4	0.1	0.1
<i>Luxembourg</i> .....	—	—	—	—	—	—
<i>Netherlands</i> .....	—	—	—	—	—	—
<b>Total EUR 6</b>	13.6	40.8	25.7	21.7	12.8	8.2
Scotland.....	0.1	—	—	—	—	—
Wales .....	0.7	0.1	0.3	—	0.2	—
Northern England.....	0.1	—	0.0	0.0	—	—
England - other areas .....	0.1	—	—	4.4	—	—
<i>United Kingdom</i> .....	1.0	0.1	0.3	4.4	0.2	—
<i>Denmark</i> .....	0.0	0.1	0.2	—	—	—
<i>Ireland</i> .....	—	—	—	—	—	—
<b>Total EUR 9</b>	14.6	41.0	26.2	26.2	13.0	8.2

<sup>1</sup> See note 2, p. 47.

<b>ELECTRIC FURNACE STEELWORKS</b>
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**Investment**

TABLE 20  
Capital expenditure by regions

*million EUA*

Region	Actual expenditure			Estimated expenditure (projects in progress, and approved)		
				on Jan. 1, 1977 for 1977	on Jan.1, 1978 for	
	1975	1976	1977	1977	1978	1979
Northern Germany .....	13.5	7.4	4.2	4.3	1.6	2.8
North Rhine/Westphalia .....	11.1	20.6	29.1	28.7	33.7	15.7
Southern Germany .....	9.2	2.7	2.4	4.9	4.7	—
Saar .....	0.8	5.2	1.8	1.2	0.9	—
<i>FR of Germany</i> .....	34.6	35.9	37.5	39.0	40.9	18.5
<i>Belgium</i> .....	7.8	14.6	16.1	12.9	5.8	0.1
Eastern France .....	4.2	3.2	1.4	1.8	0.4	0.8
Northern France .....	11.7	9.3	11.4	12.2	8.0	2.5
France - other areas .....	20.3	8.1	7.8	13.9	9.9	2.4
<i>France</i> .....	36.2	20.6	20.6	27.8	18.3	5.7
Italy - coastal areas .....	8.7	13.4	9.9	12.5	18.4	25.7
Italy - other areas .....	94.4	64.0	41.7	45.8	19.1	19.0
<i>Italy</i> .....	103.2	77.4	51.6	58.3	37.5	44.7
<i>Luxembourg</i> .....	—	0.0	—	0.1	—	—
<i>Netherlands</i> .....	1.8	—	0.2	0.0	0.5	—
<b>Total EUR 6</b>	<b>183.5</b>	<b>148.5</b>	<b>126.0</b>	<b>138.0</b>	<b>103.0</b>	<b>69.0</b>
Scotland .....	5.3	2.7	0.3	1.2	0.3	—
Wales .....	27.5	33.1	15.7	23.1	15.3	1.7
Northern England .....	25.6	32.6	26.3	26.6	18.4	6.7
England - other areas .....	10.5	2.1	2.2	3.4	1.6	—
<i>United Kingdom</i> .....	68.9	70.5	44.5	54.3	35.6	8.4
<i>Denmark</i> .....	28.8	7.8	3.7	1.5	—	—
<i>Ireland</i> .....	0.1	0.0	0.0	0.1	1.3	2.2
<b>Total EUR 9</b>	<b>281.3</b>	<b>226.8</b>	<b>174.2</b>	<b>194.8</b>	<b>140.0</b>	<b>79.6</b>

<sup>1</sup> See note 2, p. 47.

**LD, KALDO AND  
OTHER STEELWORKS  
(BASIC BESSEMER, ETC.)**

**TABLE 21**  
**Capital expenditure by regions**

Investment

million EUA

Region	Actual expenditure			Estimated expenditure (projects in progress, and approved)		
	1975	1976	1977	on Jan. 1, 1977 for	on Jan.1, 1978 for	
				1977	1978	1979
Northern Germany .....	9.0	26.9	11.2	18.8	4.2	0.7
North Rhine/Westphalia .....	54.1	41.1	15.2	29.2	34.2	21.2
Southern Germany .....	—	—	—	—	—	—
Saar .....	2.6	1.0	0.8	15.5	32.5	27.5
<i>FR of Germany</i> .....	65.6	69.0	27.2	63.5	70.9	49.4
<i>Belgium</i> .....	25.2	18.6	12.4	8.2	3.9	1.0
Eastern France .....	3.3	4.3	2.7	2.8	1.8	1.3
Northern France .....	5.4	19.0	14.3	3.9	3.8	0.0
France - other areas .....	26.7	4.9	2.6	12.4	3.5	3.4
<i>France</i> .....	35.4	28.2	19.6	19.2	9.1	4.7
Italy - coastal areas .....	15.4	20.1	34.7	18.3	16.9	8.9
Italy - other areas .....	—	—	—	—	—	—
<i>Italy</i> .....	15.4	20.1	34.7	18.3	16.9	8.9
<i>Luxembourg</i> .....	18.3	31.8	20.2	33.1	13.0	3.0
<i>Netherlands</i> .....	42.9	16.7	8.0	12.3	7.0	4.9
<b>Total EUR 6</b>	<b>202.8</b>	<b>184.4</b>	<b>122.1</b>	<b>154.6</b>	<b>120.8</b>	<b>71.9</b>
Scotland .....	25.5	12.4	11.1	7.6	21.9	14.2
Wales .....	10.5	3.0	1.9	7.4	3.8	1.0
Northern England .....	13.8	34.6	27.6	36.3	21.7	7.2
England - other areas .....	0.6	0.1	0.2	0.1	1.6	1.3
<i>United Kingdom</i> .....	50.4	50.1	40.8	51.3	49.0	23.7
<i>Denmark</i> .....	—	—	—	—	—	—
<i>Ireland</i> .....	—	—	—	—	—	—
<b>Total EUR 9</b>	<b>253.2</b>	<b>234.5</b>	<b>162.9</b>	<b>205.8</b>	<b>169.8</b>	<b>95.6</b>

<sup>1</sup> See note 2, p. 47.

**BOTTOM BLOWN STEELS  
(OBM, LWS, ETC.)**

**TABLE 22**  
**Capital expenditure**

Investment

million EUA

<b>Total EUR 9</b>	<b>49.8</b>	<b>79.7</b>	<b>97.5</b>	<b>100.1</b>	<b>123.9</b>	<b>92.5</b>
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<b>STEELWORKS TOTAL</b>
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## Investment

TABLE 23  
Capital expenditure by regions

million EUA

Region	Actual expenditure			Estimated expenditure (projects in progress, and approved)		
				on Jan. 1, 1977 for 1977	on Jan. 1, 1978 for	
	1975	1976	1977	1977	1978	1979
Northern Germany .....	24.2	37.0	18.0	23.8	8.9	5.3
North Rhine/Westphalia .....	71.9	100.2	68.8	77.7	77.3	43.3
Southern Germany .....	19.6	8.9	7.7	8.9	6.2	0.1
Saar .....	21.6	24.9	11.5	28.0	38.9	27.5
<i>FR of Germany</i> .....	137.4	171.0	106.0	138.4	131.2	76.2
<i>Belgium</i> .....	45.0	59.0	29.4	21.4	10.0	1.0
Eastern France .....	15.8	28.9	72.1	52.9	89.4	61.7
Northern France.....	17.8	28.8	26.7	17.1	11.9	2.6
France - other areas .....	49.1	13.1	10.4	26.3	13.3	5.8
<i>France</i> .....	82.6	70.8	109.2	96.2	114.6	70.1
Italy - coastal areas .....	24.3	39.0	55.7	66.9	64.9	67.2
Italy - other areas .....	96.8	65.0	42.8	46.1	19.3	19.2
<i>Italy</i> .....	121.1	104.0	98.5	113.0	84.2	86.4
<i>Luxembourg</i> .....	19.1	31.8	20.2	33.1	13.0	3.0
<i>Netherlands</i> .....	44.7	16.7	8.2	12.3	7.5	4.9
<b>Total EUR 6</b>	<b>449.7</b>	<b>453.4</b>	<b>371.4</b>	<b>414.4</b>	<b>360.6</b>	<b>241.6</b>
Scotland .....	30.8	15.1	11.3	8.8	22.2	14.2
Wales .....	38.7	36.3	17.9	30.4	19.3	2.8
Northern England .....	39.5	67.2	53.9	62.9	40.1	13.9
England - other areas .....	11.1	2.2	2.4	7.9	3.3	1.3
<i>United Kingdom</i> .....	120.2	120.8	85.5	110.0	84.9	32.2
<i>Denmark</i> .....	28.8	7.9	3.9	1.5	—	—
<i>Ireland</i> .....	0.1	0.0	0.0	1.0	1.3	2.2
<b>Total EUR 9</b>	<b>598.8</b>	<b>582.0</b>	<b>460.8</b>	<b>526.9</b>	<b>446.7</b>	<b>275.9</b>

<sup>1</sup> See note 2, p. 47.

<b>ROLLING MILLS TOTAL</b>
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Investment

TABLE 24

## Capital expenditure by type of mill

million EUA

Type of mill	Actual expenditure			Estimated expenditure (cat. A + B)	
	1975	1976	1977	1978	1979
Blooming and slabbing mills.....	136.7	149.7	138.8	120.0	52.8
Continuous casting plants.....	263.1	196.5	186.7	239.5	265.0
Total section mills.....	322.4	308.1	211.5	204.6	149.8
Total flat product mills .....	548.4	529.0	312.7	287.6	333.1
Miscellaneous (including coating lines).....	135.4	171.3	100.5	97.0	33.8
<b>Total</b>	<b>1 406.0</b>	<b>1 354.6</b>	<b>950.3</b>	<b>948.7</b>	<b>834.4</b>

<b>CONTINUOUS CASTING PLANTS</b>
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## Investment

TABLE 25  
Capital expenditure by regions

million EUA

Region	Actual expenditure			Estimated expenditure (projects in progress, and approved)		
				on Jan. 1, 1977 for	on Jan. 1, 1978 for	
	1975	1976	1977	1977	1978	1979
Northern Germany .....	6.1	0.3	0.6	0.4	0.8	3.2
North Rhine/Westphalia .....	67.6	28.9	40.2	23.1	45.9	44.2
Southern Germany .....	0.4	2.1	0.2	0.7	0.7	0.0
Saar .....	19.2	0.8	0.0	6.4	6.2	4.0
<i>FR of Germany</i> .....	93.3	32.1	41.0	30.6	53.6	51.4
<i>Belgium</i> .....	40.3	34.0	24.0	29.8	16.8	3.7
Eastern France .....	2.7	0.7	3.5	0.4	39.9	60.7
Northern France .....	14.0	15.4	15.9	13.7	9.1	7.4
France - other areas .....	22.6	6.8	2.6	5.1	1.9	0.2
<i>France</i> .....	39.2	22.9	22.0	19.2	50.9	68.2
Italy - coastal areas .....	14.6	17.0	20.7	34.8	34.9	75.8
Italy - other areas .....	25.4	16.1	17.4	15.2	5.7	10.6
<i>Italy</i> .....	40.0	33.1	38.1	50.0	40.6	86.4
<i>Luxembourg</i> .....	—	—	—	—	—	—
<i>Netherlands</i> .....	—	—	2.8	—	47.8	34.8
<b>Total EUR 6</b>	<b>212.8</b>	<b>122.1</b>	<b>127.9</b>	<b>129.5</b>	<b>209.8</b>	<b>244.5</b>
Scotland .....	2.2	8.3	25.7	20.4	13.8	2.2
Wales .....	18.5	24.4	0.9	7.1	3.6	8.3
Northern England .....	9.6	40.3	31.9	30.1	11.8	7.3
England - other areas .....	3.9	1.4	0.3	0.7	0.5	—
<i>United Kingdom</i> .....	34.2	74.4	58.8	58.2	29.7	17.8
<i>Denmark</i> .....	16.2	—	—	—	—	—
<i>Ireland</i> .....	—	—	—	0.5	—	2.5
<b>Total EUR 9</b>	<b>263.2</b>	<b>196.5</b>	<b>186.7</b>	<b>188.3</b>	<b>239.5</b>	<b>265.0</b>

<sup>1</sup> See note 2, p. 47.

<b>BLOOMING, SLABBING, SEMI-FINISHED PRODUCT MILLS</b>
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Investment

TABLE 26  
Capital expenditure by regions

million EUA

Region	Actual expenditure			Estimated expenditure (projects in progress, and approved)		
				on Jan. 1, 1977 for	on Jan.1, 1978 for	
	1975	1976	1977	1977	1978	1979
Northern Germany .....	5.7	0.5	1.7	2.6	0.8	0.5
North Rhine/Westphalia .....	22.1	15.2	13.6	17.9	18.5	16.6
Southern Germany .....	0.8	0.6	0.1	1.6	0.1	—
Saar .....	4.2	4.7	2.1	2.0	0.1	—
<i>FR of Germany</i> .....	32.8	21.0	17.5	24.1	19.5	17.1
<i>Belgium</i> .....	9.1	4.9	0.5	0.8	0.1	2.6
Eastern France .....	14.2	15.9	4.5	7.4	2.9	1.2
Northern France.....	0.3	1.2	0.6	0.5	0.1	0.0
France - other areas .....	12.8	6.3	5.3	0.5	0.8	0.1
<i>France</i> .....	27.3	23.4	10.4	8.4	3.8	1.3
Italy - coastal areas .....	5.3	2.7	5.4	5.5	0.8	1.0
Italy - other areas .....	12.1	4.0	2.7	2.6	2.2	3.1
<i>Italy</i> .....	17.4	6.7	8.1	8.0	3.0	4.0
<i>Luxembourg</i> .....	8.4	6.0	9.2	10.8	5.4	1.3
<i>Netherlands</i> .....	5.0	3.8	0.5	1.0	0.6	0.3
<b>Total EUR 6</b>	<b>99.9</b>	<b>65.9</b>	<b>46.2</b>	<b>53.1</b>	<b>32.5</b>	<b>26.6</b>
Scotland .....	1.2	0.1	0.0	0.1	0.5	—
Wales .....	5.7	3.0	32.9	24.1	43.4	24.0
Northern England.....	28.7	80.1	59.0	54.7	43.1	1.9
England - other areas .....	1.2	0.6	0.7	0.3	0.5	0.3
<i>United Kingdom</i> .....	36.8	83.8	92.6	79.3	87.5	26.2
<i>Denmark</i> .....	—	—	—	—	—	—
<i>Ireland</i> .....	0.0	0.0	—	—	—	—
<b>Total EUR 9</b>	<b>136.7</b>	<b>149.7</b>	<b>138.8</b>	<b>132.4</b>	<b>120.0</b>	<b>52.8</b>

<sup>1</sup> See note 2, p. 47.

## SECTION MILLS

## Investment

TABLE 27  
Capital expenditure by regions

million EUA

Type of mill	Actual expenditure			Estimated expenditure (cat. A + B)	
	1975	1976	1977	1978	1979
Heavy and medium section mills .....	142.5	143.2	103.2	88.6	57.7
Small bar mills .....	44.3	49.6	45.2	47.4	48.7
Wire rod mills .....	135.6	115.3	63.1	68.6	43.5
Total section mills	322.4	308.1	211.5	204.6	149.8

HEAVY AND MEDIUM MILLS
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## Investment

TABLE 28  
Capital expenditure by country

million EUA

Country	Actual expenditure			Estimated expenditure (projects in progress, and approved)		
				on Jan. 1, 1977 for 1977	on Jan.1, 1978 for	
	1975	1976	1977	1978	1979	
<i>FR of Germany</i> .....	46.1	61.2	32.8	43.2	31.3	20.1
<i>Belgium</i> .....	9.4	5.3	3.7	1.3	1.4	0.3
<i>France</i> .....	16.7	15.2	18.7	20.7	19.5	6.3
<i>Italy</i> .....	51.0	46.5	38.5	30.6	24.8	24.3
<i>Luxembourg</i> .....	4.8	2.5	3.0	4.2	5.6	3.7
<i>Netherlands</i> .....	0.7	0.0	0.1	0.0	0.7	0.1
<b>Total EUR 6</b>	<b>128.7</b>	<b>130.7</b>	<b>96.8</b>	<b>100.1</b>	<b>83.3</b>	<b>54.8</b>
<i>United Kingdom</i> .....	13.8	12.5	6.4	8.3	5.2	2.9
<i>Denmark</i> .....	—	—	—	—	—	—
<i>Ireland</i> .....	0.0	—	—	—	—	—
<b>Total EUR 9</b>	<b>142.5</b>	<b>143.2</b>	<b>103.2</b>	<b>108.4</b>	<b>88.6</b>	<b>57.7</b>

LIGHT MILLS
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## Investment

TABLE 29  
Capital expenditure by country

million EUA

Country	Actual expenditure			Estimated expenditure (projects in progress, and approved)		
				on Jan. 1, 1977 for 1977	on Jan.1, 1978 for	
	1975	1976	1977	1977	1978	1979
FR of Germany.....	6.1	7.4	8.1	14.9	14.0	17.3
Belgium.....	7.7	4.8	2.2	1.3	1.5	0.1
France.....	11.4	11.9	11.6	15.7	12.6	2.8
Italy.....	13.5	18.7	12.8	9.8	13.0	17.6
Luxembourg.....	0.4	0.6	1.5	2.1	0.7	0.0
Netherlands.....	0.0	0.3	0.9	0.6	0.2	0.1
<b>Total EUR 6</b>	<b>39.1</b>	<b>43.7</b>	<b>37.1</b>	<b>44.4</b>	<b>42.0</b>	<b>37.9</b>
United Kingdom.....	3.5	5.6	7.0	3.2	3.6	1.8
Denmark.....	1.7	0.3	1.1	3.8	—	—
Ireland.....	—	—	—	—	1.8	9.0
<b>Total EUR 9</b>	<b>44.3</b>	<b>49.6</b>	<b>45.2</b>	<b>51.5</b>	<b>47.4</b>	<b>48.7</b>

CONTINUOUS ROD AND BAR MILLS
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Investment

TABLE 30  
Capital expenditure by country

million EUA

Country	Actual expenditure			Estimated expenditure (projects in progress, and approved)		
				on Jan. 1, 1977 for 1977	on Jan.1, 1978 for	
	1975	1976	1977	1978	1979	
<i>FR of Germany</i> .....	9.0	11.9	7.4	8.2	6.0	1.0
<i>Belgium</i> .....	20.5	19.2	5.0	4.4	5.6	7.6
<i>France</i> .....	18.8	22.4	7.6	6.6	10.0	3.6
<i>Italy</i> .....	8.3	18.0	32.3	26.0	36.0	17.4
<i>Luxembourg</i> .....	—	0.0	0.1	0.1	1.9	0.1
<i>Netherlands</i> .....	1.0	0.1	0.2	0.0	0.3	0.2
<b>Total EUR 6</b>	<b>57.6</b>	<b>71.6</b>	<b>52.6</b>	<b>45.3</b>	<b>59.8</b>	<b>29.9</b>
<i>United Kingdom</i> .....	78.0	43.7	10.4	10.4	8.8	13.6
<i>Denmark</i> .....	—	—	—	—	—	—
<i>Ireland</i> .....	—	—	—	3.3	0.0	0.1
<b>Total EUR 9</b>	<b>135.6</b>	<b>115.3</b>	<b>63.1</b>	<b>58.9</b>	<b>68.6</b>	<b>43.5</b>

## SECTION MILLS

## Investment

TABLE 31  
Capital expenditure by regions

million EUA

Region	Actual expenditure			Estimated expenditure (projects in progress, and approved)		
				on Jan. 1, 1977 for 1977	on Jan. 1, 1978 for	
	1975	1976	1977	1977	1978	1979
Northern Germany .....	31.5	14.8	3.4	11.4	13.2	8.2
North Rhine/Westphalia .....	24.4	64.4	38.5	47.7	32.7	28.8
Southern Germany .....	1.8	0.3	3.9	5.4	5.1	1.4
Saar .....	3.5	1.0	2.5	1.8	0.4	—
<i>FR of Germany</i> .....	61.2	80.5	48.3	66.4	51.4	38.4
<i>Belgium</i> .....	37.7	29.3	11.0	7.0	8.5	8.1
Eastern France .....	31.4	29.9	13.3	11.0	12.1	4.1
Northern France .....	2.4	16.8	20.9	25.2	22.9	5.6
France - other areas .....	13.0	2.8	3.7	6.9	7.1	2.9
<i>France</i> .....	46.9	49.5	37.9	43.1	42.1	12.6
Italy - coastal areas .....	34.9	32.3	43.1	35.7	35.8	29.0
Italy - other areas .....	37.8	50.9	40.5	30.7	38.0	30.3
<i>Italy</i> .....	72.7	83.2	83.6	66.4	73.8	59.3
<i>Luxembourg</i> .....	5.3	3.1	4.5	6.4	8.2	3.9
<i>Netherlands</i> .....	1.7	0.4	1.2	0.7	1.2	0.3
<b>Total EUR 6</b>	<b>225.4</b>	<b>246.0</b>	<b>186.6</b>	<b>189.9</b>	<b>185.2</b>	<b>122.6</b>
Scotland .....	1.0	2.2	2.4	1.0	0.1	0.0
Wales .....	21.7	12.6	4.0	4.8	1.7	0.2
Northern England .....	55.8	39.2	14.8	12.6	14.5	15.2
England - other areas .....	16.8	7.8	2.6	3.5	1.3	2.8
<i>United Kingdom</i> .....	95.3	61.8	23.8	21.9	17.6	18.2
<i>Denmark</i> .....	1.7	0.3	1.1	3.8	—	—
<i>Ireland</i> .....	0.0	—	—	3.3	1.8	9.0
<b>Total EUR 9</b>	<b>322.4</b>	<b>308.1</b>	<b>211.5</b>	<b>218.8</b>	<b>204.6</b>	<b>149.8</b>

<sup>1</sup> See note 2, p. 47.

FLAT PRODUCT MILLS
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## Investment

TABLE 32  
Capital expenditure by sectors

million EUA

Sectors	Actual expenditure			Estimated expenditure (cat. A + B)	
	1975	1976	1977	1978	1979
Hot wide strip mills.....	208.5	171.6	55.4	63.7	103.9
Hoop and strip mills.....	14.3	18.6	21.9	14.9	56.1
Plate and universal mills.....	102.7	135.9	77.3	59.7	62.2
Hot sheet mills.....	1.6	0.3	0.7	0.7	0.0
Cold strip mills.....	221.2	202.6	157.4	148.6	110.9
<b>Total flat product mills</b>	<b>548.4</b>	<b>529.0</b>	<b>312.7</b>	<b>287.6</b>	<b>333.1</b>

<b>FLAT PRODUCT MILLS</b>
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## Investment

TABLE 33  
Capital expenditure by regions

million EUA

Region	Actual expenditure			Estimated expenditure (projects in progress, and approved)		
	1975	1976	1977	on Jan. 1, 1977 for	on Jan.1, 1978 for	
				1977	1978	1979
Northern Germany .....	59.0	41.3	22.9	24.0	15.6	10.8
North Rhine/Westphalia .....	56.6	91.0	55.7	43.2	68.9	57.2
Southern Germany .....	9.8	1.7	12.5	2.5	13.4	4.5
Saar .....	17.7	17.4	0.6	0.6	2.2	—
<i>FR of Germany</i> .....	143.0	151.4	91.7	70.3	100.1	72.5
<i>Belgium</i> .....	80.9	48.8	14.9	19.0	7.6	6.1
Eastern France .....	10.9	0.8	9.2	14.9	3.0	2.2
Northern France.....	54.4	56.8	36.0	25.0	27.0	10.2
France - other areas .....	35.7	21.4	4.6	10.4	1.8	0.7
<i>France</i> .....	100.9	79.0	49.8	50.3	31.8	13.1
Italy - coastal areas .....	52.1	45.6	39.8	53.8	51.8	192.6
Italy - other areas .....	32.7	35.5	37.5	21.0	21.0	9.7
<i>Italy</i> .....	84.8	81.1	77.3	74.8	72.8	202.3
<i>Luxembourg</i> .....	0.4	0.6	1.6	12.4	5.2	0.2
<i>Netherlands</i> .....	4.4	6.6	11.0	7.1	8.3	5.9
<b>Total EUR 6</b>	<b>414.4</b>	<b>367.5</b>	<b>246.3</b>	<b>233.9</b>	<b>225.9</b>	<b>300.1</b>
Scotland .....	7.7	7.6	8.0	7.3	14.2	6.0
Wales .....	98.4	88.7	27.8	52.5	24.4	21.0
Northern England.....	25.8	56.2	28.3	30.0	22.4	6.0
England - other areas .....	1.5	3.1	1.9	0.8	0.7	0.0
<i>United Kingdom</i> .....	133.3	155.6	66.0	90.7	61.7	33.0
<i>Denmark</i> .....	0.7	5.9	0.4	1.5	—	—
<i>Ireland</i> .....	—	—	—	—	—	—
<b>Total EUR 9</b>	<b>548.4</b>	<b>529.0</b>	<b>312.7</b>	<b>326.1</b>	<b>287.6</b>	<b>333.1</b>

<sup>1</sup> See note 2, p. 47.

<b>HOT WIDE STRIP MILLS</b>
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**Investment**  
(already included in  
capital expenditure for  
flat product mills: Table 33)

**TABLE 34**  
**Capital expenditure by regions**

million EUA

Region	Actual expenditure			Estimated expenditure (projects in progress, and approved)		
				on Jan. 1, 1977 for	on Jan.1, 1978 for	
	1975	1976	1977	1977	1978	1979
Northern Germany .....	46.9	16.3	6.9	5.1	3.3	1.7
North Rhine/Westphalia .....	19.7	25.1	17.2	9.5	34.5	34.8
Southern Germany .....	—	—	—	—	—	—
Saar .....	—	—	—	—	—	—
<i>FR of Germany</i> .....	66.5	41.4	24.1	14.5	37.8	36.5
<i>Belgium</i> .....	56.2	36.4	7.2	10.6	3.9	1.7
Eastern France .....	2.0	—	—	1.0	—	—
Northern France .....	0.7	0.8	0.0	0.2	0.4	—
France - other areas .....	7.2	19.0	2.2	—	0.7	0.5
<i>France</i> .....	9.9	19.8	2.2	1.2	1.1	0.5
Italy - coastal areas .....	6.7	5.4	5.7	4.1	5.7	60.6 <sup>2</sup>
Italy - other areas .....	6.5	7.2	7.3	7.7	11.0	2.8
<i>Italy</i> .....	13.2	12.6	13.0	11.8	16.7	63.4
<i>Luxembourg</i> .....	0.1	—	0.0	0.0	0.1	—
<i>Netherlands</i> .....	2.5	1.7	0.8	0.9	1.8	1.3
<b>Total EUR 6</b>	<b>148.3</b>	<b>111.9</b>	<b>47.3</b>	<b>39.0</b>	<b>61.4</b>	<b>103.4</b>
Scotland .....	1.8	—	—	0.2	—	—
Wales .....	53.3	59.7	7.3	34.5	1.4	0.2
Northern England .....	5.1	—	0.8	2.0	0.9	0.3
England - other areas .....	—	—	—	—	—	—
<i>United Kingdom</i> .....	60.2	59.7	8.1	36.7	2.3	0.5
<i>Denmark</i> .....	—	—	—	—	—	—
<i>Ireland</i> .....	—	—	—	—	—	—
<b>Total EUR 9</b>	<b>208.5</b>	<b>171.6</b>	<b>55.4</b>	<b>75.7</b>	<b>63.7</b>	<b>103.9</b>

<sup>1</sup> See note 2, p. 47.

<sup>2</sup> Due to decisions taken since the date of the survey, a considerable part of these expenditures have been transferred to the 'C' category.

ROLLING MILLS <sup>(1)</sup> TOTAL
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Investment

TABLE 35  
Capital expenditure by regions

million EUA

Region	Actual expenditure			Estimated expenditure (projects in progress, and approved)		
				on Jan. 1, 1977 for	on Jan.1, 1978 for	
	1975	1976	1977	1977	1978	1979
Northern Germany .....	108.0	57.3	28.6	38.5	30.5	22.6
North Rhine/Westphalia .....	197.1	245.1	165.2	153.8	176.3	149.1
Southern Germany .....	14.0	6.8	19.3	12.4	23.2	6.8
Saar .....	47.6	27.7	6.5	12.2	11.4	11.0
<i>FR of Germany</i> .....	366.7	336.9	219.6	216.9	241.4	189.5
<i>Belgium</i> .....	175.8	119.0	52.2	62.7	42.4	21.2
Eastern France .....	61.7	49.6	33.1	36.9	61.9	71.3
Northern France.....	86.0	105.0	80.6	71.6	63.7	25.6
France - other areas .....	105.3	48.9	25.5	36.9	19.8	6.0
<i>France</i> .....	253.1	203.5	139.2	145.4	145.4	102.9
Italy - coastal areas .....	117.3	101.0	115.7	140.6	126.7	300.7
Italy - other areas .....	114.5	109.9	106.6	76.2	87.0	62.5
<i>Italy</i> .....	231.8	210.9	222.3	216.8	213.7	363.2
<i>Luxembourg</i> .....	14.1	10.0	22.6	30.4	28.6	6.9
<i>Netherlands</i> .....	11.6	11.1	16.4	9.9	58.2	41.4
<b>Total EUR 6</b>	<b>1 053.1</b>	<b>891.5</b>	<b>672.3</b>	<b>682.2</b>	<b>729.8</b>	<b>725.2</b>
Scotland .....	12.1	18.2	36.2	28.8	28.5	8.3
Wales .....	175.6	199.9	94.0	105.9	91.9	55.9
Northern England.....	121.6	225.4	140.7	133.3	93.5	30.4
England - other areas .....	24.9	13.4	5.6	5.4	3.2	3.2
<i>United Kingdom</i> .....	334.1	456.9	276.5	273.4	217.1	97.8
<i>Denmark</i> .....	18.5	6.3	1.5	6.9	—	—
<i>Ireland</i> .....	0.3	0.0	0.0	3.8	1.8	11.4
<b>Total EUR 9</b>	<b>1 406.0</b>	<b>1 354.6</b>	<b>950.3</b>	<b>966.2</b>	<b>948.7</b>	<b>834.4</b>

<sup>1</sup> Including ancillary plants.<sup>2</sup> See note 2, p. 47.

<b>STEELWORKS-OWNED POWER-GENERATING PLANTS AND DISTRIBUTION NETWORKS</b>
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Investment

TABLE 36  
Capital expenditure by regions

million EUA

Region	Actual expenditure			Estimated expenditure (projects in progress, and approved)		
				on Jan. 1, 1977 for 1977	on Jan.1, 1978 for	
	1975	1976	1977	1977	1978	1979
Northern Germany .....	8.5	9.2	3.3	4.4	1.9	0.9
North Rhine/Westphalia .....	17.0	31.0	9.1	20.5	12.9	4.7
Southern Germany .....	1.0	0.9	0.6	0.7	0.8	0.1
Saar .....	0.5	0.9	0.3	0.5	0.2	0.1
<i>FR of Germany</i> .....	26.9	42.0	13.3	26.0	15.8	5.8
<i>Belgium</i> .....	11.7	13.7	4.2	5.1	6.7	0.8
Eastern France .....	12.0	9.3	6.0	9.0	2.9	1.3
Northern France .....	4.3	3.8	3.8	2.8	1.3	0.1
France - other areas .....	28.7	4.0	1.5	3.2	1.4	1.5
<i>France</i> .....	45.0	17.1	11.3	15.0	5.6	2.9
Italy - coastal areas .....	13.7	24.4	12.1	13.2	8.7	9.8
Italy - other areas .....	10.6	10.0	5.8	12.7	4.1	2.5
<i>Italy</i> .....	24.3	34.4	17.9	26.0	12.8	12.3
<i>Luxembourg</i> .....	0.4	0.2	1.8	1.0	8.4	0.5
<i>Netherlands</i> .....	9.4	4.8	1.6	1.7	0.8	0.5
<b>Total EUR 6</b>	<b>117.6</b>	<b>112.2</b>	<b>50.1</b>	<b>74.8</b>	<b>50.0</b>	<b>22.8</b>
Scotland .....	1.7	0.6	0.7	0.6	1.4	—
Wales .....	—	—	0.2	—	0.4	—
Northern England .....	12.0	61.4	23.9	23.6	8.9	3.6
England - other areas .....	0.7	1.3	1.8	1.4	1.3	0.1
<i>United Kingdom</i> .....	14.5	63.3	26.6	25.6	12.0	3.7
<i>Denmark</i> .....	—	—	—	—	—	—
<i>Ireland</i> .....	—	—	—	—	—	—
<b>Total EUR 9</b>	<b>132.1</b>	<b>175.5</b>	<b>76.7</b>	<b>100.4</b>	<b>62.0</b>	<b>26.5</b>

<sup>1</sup> See note 2, p. 47.

**MISCELLANEOUS  
(IRON- AND STEELWORKS)**

Investment

TABLE 37  
Capital expenditure by regions

million EUA

Region	Actual expenditure			Estimated expenditure (projects in progress, and approved)		
				on Jan. 1, 1977 for	on Jan.1, 1978 for	
	1975	1976	1977	1977	1978	1979
Northern Germany .....	15.9	20.5	10.9	7.7	6.0	4.3
North Rhine/Westphalia .....	52.4	46.3	46.5	69.0	66.0	33.1
Southern Germany .....	3.1	4.6	4.8	1.9	3.1	0.2
Saar .....	13.8	11.9	7.4	15.5	13.5	6.0
<i>FR of Germany</i> .....	85.1	83.3	69.6	94.1	88.6	43.6
<i>Belgium</i> .....	25.8	18.7	15.0	9.5	11.5	5.3
Eastern France .....	20.9	21.0	19.5	11.7	14.0	6.0
Northern France.....	19.0	16.2	11.9	8.8	8.4	3.5
France - other areas .....	22.3	6.2	7.0	8.7	8.5	5.8
<i>France</i> .....	62.2	43.4	38.4	29.3	30.9	15.3
Italy - coastal areas .....	96.6	47.6	26.5	25.6	38.1	30.4
Italy - other areas .....	24.5	45.3	37.4	23.1	27.3	12.1
<i>Italy</i> .....	121.0	92.9	63.9	48.7	65.4	42.5
<i>Luxembourg</i> .....	9.6	10.6	5.2	10.5	7.7	1.6
<i>Netherlands</i> .....	22.3	15.4	11.3	14.6	10.1	7.0
<b>Total EUR 6</b>	<b>326.0</b>	<b>264.3</b>	<b>203.4</b>	<b>206.6</b>	<b>214.2</b>	<b>115.4</b>
Scotland.....	4.2	5.2	4.4	8.8	14.0	6.3
Wales .....	24.4	30.7	19.2	23.0	8.5	1.2
Northern England.....	38.5	61.0	54.2	63.9	37.1	15.6
England - other areas .....	3.2	4.6	6.3	6.0	3.5	0.9
<i>United Kingdom</i> .....	70.3	101.5	84.1	101.7	63.1	24.0
<i>Denmark</i> .....	0.8	1.4	0.2	—	—	—
<i>Ireland</i> .....	0.1	—	0.7	4.8	3.7	10.0
<b>Total EUR 9</b>	<b>397.2</b>	<b>367.2</b>	<b>288.4</b>	<b>313.2</b>	<b>281.0</b>	<b>149.5</b>

<sup>1</sup> See note 2, p. 47.

<b>GENERAL SERVICES (IRON AND STEEL- WORKS) TOTAL</b>
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Investment

TABLE 38  
Capital expenditure by regions

million EUA

Region	Actual expenditure			Estimated expenditure (projects in progress, and approved)		
				on Jan. 1, 1977 for 1977	on Jan. 1, 1978 for	
	1975	1976	1977	1977	1978	1979
Northern Germany .....	24.3	29.7	14.2	12.0	7.9	5.2
North Rhine/Westphalia .....	69.3	77.3	55.6	89.5	78.9	37.9
Southern Germany .....	4.1	5.5	5.4	2.6	3.9	0.3
Saar .....	14.3	12.7	7.7	16.0	13.7	6.1
<i>FR of Germany</i> .....	112.0	125.2	82.9	120.1	104.4	49.5
<i>Belgium</i> .....	37.4	32.5	19.2	14.6	18.2	6.2
Eastern France .....	32.9	30.3	25.5	20.7	16.9	7.3
Northern France .....	23.3	19.9	15.8	11.7	9.7	3.6
France - other areas .....	51.0	10.2	8.4	11.9	9.9	7.3
<i>France</i> .....	107.2	60.4	49.7	44.3	36.5	18.2
Italy - coastal areas .....	110.2	72.0	38.6	38.8	46.7	40.2
Italy - other areas .....	35.1	55.3	43.1	35.8	31.5	14.6
<i>Italy</i> .....	145.3	127.3	81.7	74.7	78.2	54.8
<i>Luxembourg</i> .....	10.0	10.8	7.0	11.6	16.1	2.1
<i>Netherlands</i> .....	31.7	20.2	12.9	16.3	10.9	7.5
<b>Total EUR 6</b>	<b>443.6</b>	<b>376.4</b>	<b>253.4</b>	<b>281.4</b>	<b>264.2</b>	<b>138.3</b>
Scotland .....	6.0	5.8	5.2	9.4	15.3	6.3
Wales .....	24.4	30.7	19.5	23.0	8.9	1.2
Northern England .....	50.5	122.4	78.1	87.5	46.0	19.2
England - other areas .....	4.0	5.9	8.0	7.4	4.9	1.0
<i>United Kingdom</i> .....	84.8	164.8	110.8	127.3	75.1	27.7
<i>Denmark</i> .....	0.8	1.4	0.2	—	—	—
<i>Ireland</i> .....	0.1	—	0.7	4.8	3.7	10.0
<b>Total EUR 9</b>	<b>529.3</b>	<b>542.7</b>	<b>365.1</b>	<b>413.6</b>	<b>343.0</b>	<b>176.1</b>

<sup>1</sup> See note 2, p. 47.

<b>SINTER AND SPONGE IRON</b>
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<b>Production</b>
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TABLE 39  
Production and production potential

million tonnes

Actual production		Production potential			Expected production potential			
		1975	1976	1977	1978	1979	1980	1981
1977								
111.3	Total EUR 6	148.6	151.5	154.9	155.2	157.8	159.6	160.0
124.8	Total EUR 9	170.9	172.0	174.9	178.7	186.1	188.9	189.4

<b>PIG IRON</b>
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<b>Production</b>
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TABLE 40  
Production and production potential by regions

million tonnes

5.7	Northern Germany .....	9.4	9.4	9.9	11.1	11.1	11.1	11.1
18.6	North Rhine/Westphalia ...	29.3	31.2	32.2	32.2	32.3	32.8	32.9
0.7	Southern Germany .....	1.3	1.4	1.4	1.4	1.4	1.4	1.4
3.9	Saar .....	7.3	7.5	7.5	7.7	7.7	7.7	7.5
29.0	FR of Germany .....	47.3	49.5	50.9	52.4	52.5	53.0	52.9
9.0	Belgium .....	15.5	15.9	15.8	15.8	16.0	16.1	16.1
9.2	Eastern France .....	14.0	14.1	13.7	13.1	13.1	13.1	12.7
6.3	Northern France .....	9.6	9.1	10.3	10.8	10.8	10.8	10.8
2.8	France - other areas .....	3.9	4.3	3.3	3.5	3.6	3.6	3.6
18.3	France .....	27.5	27.5	27.3	27.3	27.5	27.5	27.1
11.3	Italy - coastal areas .....	16.3	16.9	16.9	16.9	17.1	17.3	17.3
0.2	Italy - other areas .....	0.5	0.3	0.3	0.3	0.3	0.3	0.3
11.5	Italy .....	16.8	17.2	17.2	17.2	17.4	17.6	17.6
3.6	Luxembourg .....	6.3	6.9	6.4	6.4	6.4	6.4	6.4
3.9	Netherlands .....	5.0	6.3	7.0	7.0	7.0	7.0	7.0
75.2	Total EUR 6	118.4	123.2	124.7	126.1	126.8	127.6	127.1
1.2	Scotland .....	1.9	1.9	1.9	1.1	1.7	2.3	2.5
4.0	Wales .....	5.4	6.0	6.2	5.7	6.0	6.1	6.4
5.8	Northern England .....	8.9	8.9	7.5	7.7	9.5	11.1	11.1
1.3	England - other regions ....	2.2	2.0	2.0	1.8	1.4	1.4	1.4
12.4	United Kingdom .....	18.4	18.8	17.6	16.3	18.7	20.9	21.4
—	Denmark .....	—	—	—	—	—	—	—
—	Ireland .....	—	—	—	—	—	—	—
87.5	Total EUR 9	136.8	142.0	142.2	142.4	145.5	148.5	148.5

<sup>1</sup> See note 2, p. 47.

STEEL - TOTAL
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Production
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TABLE 41

## Production and production potential by regions

million tonnes

Actual production 1977	Region	Production potential			Expected production potential			
		1975	1976	1977	1978	1979	1980	1981
7.6	Northern Germany .....	11.8	11.6	12.6	13.5	13.5	13.5	13.5
24.9	North Rhine/Westphalia ...	39.6	42.4	43.1	42.7	43.3	43.5	43.5
2.1	Southern Germany .....	2.9	3.2	3.1	3.6	3.6	3.6	3.6
4.4	Saar .....	8.6	8.7	8.9	9.1	9.1	9.1	8.9
39.0	<i>FR of Germany</i> .....	62.9	65.8	67.7	68.8	69.5	69.7	69.4
11.3	<i>Belgium</i> .....	19.0	18.5	19.2	19.5	19.7	19.7	19.7
9.8	Eastern France .....	15.6	15.6	14.6	13.1	13.9	14.0	13.3
8.4	Northern France .....	11.8	10.9	13.5	14.2	14.4	14.4	14.5
3.9	France - other areas ... } <sup>1</sup>	6.3	6.8	5.2	5.3	5.5	5.5	5.6
22.1	<i>France</i> .....	33.7	33.3	33.3	32.7	33.8	34.0	33.4
12.1	Italy - coastal areas .....	18.2	19.3	19.2	19.3	19.9	20.0	20.0
11.3	Italy - other areas .....	14.5	14.4	14.8	15.5	15.9	16.2	16.6
23.3	<i>Italy</i> .....	32.7	33.7	34.0	34.8	35.8	36.2	36.6
4.3	<i>Luxembourg</i> .....	7.5	8.2	8.2	8.2	8.2	8.2	8.2
4.9	<i>Netherlands</i> .....	6.3	7.7	8.2	8.2	8.2	8.5	8.6
104.9	<b>Total EUR 6</b>	<b>162.1</b>	<b>167.2</b>	<b>170.6</b>	<b>172.3</b>	<b>175.2</b>	<b>176.3</b>	<b>176.0</b>
1.9	Scotland .....	2.9	3.3	3.1	2.3	3.0	3.6	3.7
6.1	Wales .....	7.4	8.1	8.7	8.3	9.0	9.0	9.5
9.6	Northern England .....	13.0	14.2	12.9	13.0	15.8	16.3	16.1
3.0	England - other regions ....	3.7	3.7	4.1	4.1	3.8	3.8	3.7
20.5	<i>United Kingdom</i> .....	27.0	29.2	28.9	27.7	31.6	32.6	33.1
0.7	<i>Denmark</i> .....	0.7	1.2	1.2	1.2	1.2	1.2	1.2
0.0	<i>Ireland</i> .....	0.1	0.1	0.1	0.1	0.1	0.2	0.2
126.1	<b>Total EUR 9</b>	<b>189.9</b>	<b>197.7</b>	<b>200.7</b>	<b>201.2</b>	<b>208.1</b>	<b>210.3</b>	<b>210.5</b>

<sup>1</sup> See note 2, p. 47.

<b>CRUDE STEEL</b>
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Production

TABLE 42

Comparison of the forecasts of crude steel production potential  
given in recent surveys

million tonnes

Year of inquiry	Production potential estimated							
	1974	1975	1976	1977	1978	1979	1980	1981
1973 ..... EUR 6	155.7	164.1	167.9					
1974 ..... EUR 6	153.5	163.0	170.3	173.3				
..... EUR 9	183.2	197.4	204.5	206.1				
1975 ..... EUR 6	150.4	162.3	169.8	173.9	177.8			
..... EUR 9	178.9	191.3	200.6	207.5	212.8			
1976 ..... EUR 6		162.1	169.7	175.6	177.9	180.3		
..... EUR 9		189.9	198.0	207.8	212.4	215.8		
1977 ..... EUR 6			167.2	170.4	174.4	177.9	178.8	
..... EUR 9			197.7	201.7	208.5	212.7	214.0	
1978 ..... EUR 6				170.6	172.3	175.2	176.3	176.0
..... EUR 9				200.7	201.2	208.1	210.3	210.5

<b>CRUDE STEEL</b>
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Production

TABLE 43

Crude steel production potential according to steelmaking process

million tonnes

Process		Production		Production potential					
		1960	1977	1973	1977	1978	1979	1980	1981
Basic Bessemer and other .....	EUR 6	35.9	2.0	14.9	5.5	3.1	2.5	2.3	1.3
	EUR 9	37.6	2.0	14.9	5.5	3.1	2.5	2.3	1.3
OBM and similar processes.....	EUR 6	—	7.3	6.5	12.8	14.8	17.8	18.0	16.6
	EUR 9	—	7.3	6.5	12.8	14.8	17.8	18.0	16.6
Open-hearth .....	EUR 6	27.5	7.2	19.3	12.2	9.4	7.8	7.4	7.3
	EUR 9	48.7	10.8	28.9	17.9	12.9	10.5	10.2	9.9
Electric furnace.....	EUR 6	7.6	20.4	20.7	28.1	30.1	31.4	32.5	33.1
	EUR 9	9.3	27.1	26.4	38.0	40.5	42.4	43.9	44.5
LD, Kaldo, etc.....	EUR 6	1.8	68.0	83.5	111.9	114.8	115.7	116.1	117.7
	EUR 9	2.2	78.9	97.8	126.4	129.8	134.9	135.9	138.2
Total	EUR 6	72.8	104.9	144.9	170.6	172.3	175.2	176.3	176.0
	EUR 9	97.8	126.1	174.5	200.7	201.2	208.1	210.3	210.5

CRUDE STEEL
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Production

TABLE 44

Shares of the different steelmaking processes in 1960, 1977, 1981

%

Process	Production		Production potential	
	1960	1977	1977	1981 estimated share
Basic Bessemer and other .....	38.5	1.6	2.7	0.6
OBM and similar processes.....	—	5.8	6.4	7.9
Open-hearth .....	49.7	8.6	8.9	4.7
Electric furnace.....	9.5	21.5	19.0	21.1
LD, Kaldo, etc.....	2.3	62.5	63.0	65.7
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

BASIC BESSEMER STEEL AND OTHER
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## Production

TABLE 45

## Production and production potential by regions

million tonnes

Actual production 1977	Region	Production potential			Expected production potential			
		1975	1976	1977	1978	1979	1980	1981
—	Northern Germany.....	—	—	—	—	—	—	—
—	North Rhine/Westphalia ...	—	—	—	—	—	—	—
—	Southern Germany .....	—	—	—	—	—	—	—
—	Saar .....	1.0	0.7	—	—	—	—	—
—	FR of Germany .....	1.0	0.7	—	—	—	—	—
—	Belgium .....	2.2	0.5	0.0	0.0	0.0	0.0	0.0
1.7	Eastern France .....	4.3	3.7	3.7	1.8	1.6	1.5	0.5
—	Northern France .....	—	—	—	—	—	—	—
0.2	France - other areas.... } <sup>1</sup>	0.5	0.5	0.5	0.0	0.0	0.0	0.0
2.0	France .....	4.8	4.2	4.2	1.8	1.7	1.5	0.5
—	Italy - coastal areas .....	—	—	—	—	—	—	—
0.0	Italy - other areas .....	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	Italy .....	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	Luxembourg .....	2.5	2.0	1.3	1.3	0.8	0.8	0.8
—	Netherlands .....	—	—	—	—	—	—	—
2.0	<b>Total EUR 6</b>	<b>10.5</b>	<b>7.3</b>	<b>5.5</b>	<b>3.1</b>	<b>2.5</b>	<b>2.3</b>	<b>1.3</b>
—	Scotland .....	—	—	—	—	—	—	—
—	Wales .....	—	—	—	—	—	—	—
—	Northern England .....	—	—	—	—	—	—	—
0.0	England - other regions ....	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	United Kingdom .....	0.0	0.0	0.0	0.0	0.0	0.0	0.0
—	Denmark .....	—	—	—	—	—	—	—
—	Ireland .....	—	—	—	—	—	—	—
2.0	<b>Total EUR 9</b>	<b>10.5</b>	<b>7.3</b>	<b>5.5</b>	<b>3.1</b>	<b>2.5</b>	<b>2.3</b>	<b>1.3</b>

<sup>1</sup> See note 2, p. 47.

OPEN HEARTH STEEL
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## Production

TABLE 46  
Production and production potential by regions

million tonnes

Actual production 1977	Region	Production potential			Expected production potential			
		1975	1976	1977	1978	1979	1980	1981
0.8	Northern Germany .....	1.3	1.0	1.0	1.0	1.0	1.0	1.0
3.5	North Rhine/Westphalia ...	7.8	6.7	6.1	5.4	5.2	4.8	4.8
0.5	Southern Germany .....	0.6	0.5	0.5	0.5	0.5	0.5	0.5
0.2	Saar .....	0.6	0.6	0.5	0.2	0.2	0.2	0.1
4.9	FR of Germany .....	10.3	8.7	8.1	7.1	6.9	6.5	6.4
0.0	Belgium .....	0.3	0.3	0.2	—	—	—	—
0.2	Eastern France .....	1.0	0.8	0.3	0.3	0.3	0.3	0.3
0.5	Northern France .....	1.4	0.8	0.6	0.4	0.3	0.3	0.3
0.1	France - other areas ....	0.3	0.3	0.1	—	—	—	—
0.7	France .....	2.7	1.8	1.0	0.7	0.6	0.6	0.6
1.2	Italy - coastal areas .....	2.4	2.5	2.4	1.2	—	—	—
0.4	Italy - other areas .....	1.5	0.7	0.5	0.4	0.3	0.3	0.3
1.6	Italy .....	3.9	3.2	2.9	1.6	0.3	0.3	0.3
—	Luxembourg .....	—	—	—	—	—	—	—
—	Netherlands .....	0.1	0.1	—	—	—	—	—
7.2	<b>Total EUR 6</b>	<b>17.3</b>	<b>14.1</b>	<b>12.2</b>	<b>9.4</b>	<b>7.8</b>	<b>7.4</b>	<b>7.3</b>
0.5	Scotland .....	1.3	1.5	1.3	0.4	0.3	0.3	0.3
2.2	Wales .....	2.8	2.9	2.7	1.9	1.3	1.3	1.3
0.3	Northern England .....	0.8	0.6	0.5	—	—	—	—
0.3	England - other regions ....	1.0	0.7	0.6	0.6	0.6	0.6	0.5
3.3	United Kingdom .....	5.9	5.8	5.2	2.9	2.2	2.2	2.1
0.3	Denmark .....	0.5	0.5	0.5	0.5	0.5	0.5	0.5
—	Ireland .....	0.1	—	—	—	—	—	—
10.8	<b>Total EUR 9</b>	<b>23.7</b>	<b>20.4</b>	<b>17.9</b>	<b>12.9</b>	<b>10.5</b>	<b>10.2</b>	<b>9.9</b>

<sup>1</sup> See note 2, p. 47.

<b>ELECTRIC FURNACE STEEL</b>
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Production

TABLE 47  
Production and production potential by regions

*million tonnes*

Actual pro- duction 1977	Region	Production potential			Expected production potential			
		1975	1976	1977	1978	1979	1980	1981
0.9	Northern Germany .....	1.3	1.5	1.4	1.4	1.5	1.5	1.5
2.7	North Rhine/Westphalia ...	3.5	3.8	4.0	4.2	4.6	5.1	5.1
1.0	Southern Germany .....	1.3	1.5	1.5	1.6	1.6	1.6	1.6
0.5	Saar .....	0.5	0.4	0.5	0.5	0.5	0.5	0.5
5.1	<i>FR of Germany</i> .....	6.6	7.2	7.4	7.8	8.2	8.7	8.7
0.5	<i>Belgium</i> .....	0.8	0.8	0.8	1.2	1.2	1.2	1.2
0.6	Eastern France .....	1.3	1.3	0.9	0.8	0.8	0.8	0.8
1.6	Northern France .....	0.7	0.9	2.1	2.4	2.6	2.6	2.6
1.0	France - other areas .... } <sup>1</sup>	2.3	2.2	1.5	1.6	1.6	1.6	1.7
3.2	<i>France</i> .....	4.3	4.4	4.6	4.8	5.0	5.0	5.1
0.5	Italy - coastal areas .....	0.5	0.9	0.8	0.9	1.0	1.2	1.3
10.8	Italy - other areas .....	12.8	13.5	14.2	15.0	15.6	15.9	16.3
11.3	<i>Italy</i> .....	13.3	14.4	15.0	15.9	16.6	17.1	17.6
0.0	<i>Luxembourg</i> .....	0.1	0.1	0.0	0.0	0.0	0.0	0.0
0.3	<i>Netherlands</i> .....	0.4	0.4	0.3	0.3	0.3	0.4	0.4
20.4	<b>Total EUR 6</b>	25.5	27.4	28.1	30.1	31.4	32.5	33.1
0.4	Scotland .....	0.4	0.5	0.5	0.6	0.6	0.6	0.6
0.7	Wales .....	0.5	0.5	1.4	1.8	2.3	2.4	2.4
3.6	Northern England .....	4.9	5.3	5.0	5.1	5.2	5.4	5.4
1.7	England - other regions ....	1.2	1.5	2.1	2.2	2.2	2.2	2.2
6.3	<i>United Kingdom</i> .....	7.0	7.8	9.1	9.7	10.2	10.5	10.5
0.4	<i>Denmark</i> .....	0.1	0.7	0.7	0.7	0.7	0.7	0.7
0.0	<i>Ireland</i> .....	0.1	0.1	0.1	0.1	0.1	0.2	0.2
27.1	<b>Total EUR 9</b>	32.7	36.0	38.0	40.5	42.4	43.9	44.5

<sup>1</sup> See note 2, p. 47.

LD, KALDO AND SIMILAR STEELS
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## Production

TABLE 48

## Production and production potential by regions

million tonnes

Actual pro- duction 1977	Region	Production potential			Expected production potential			
		1975	1976	1977	1978	1979	1980	1981
5.9	Northern Germany .....	9.1	9.1	10.2	11.1	11.1	11.1	11.1
18.7	North Rhine/Westphalia ...	28.1	31.9	33.0	33.0	33.5	33.5	33.5
—	Southern Germany .....	—	—	—	—	—	—	—
2.1	Saar .....	4.9	5.0	5.0	5.0	5.0	5.0	6.5
26.8	FR of Germany .....	42.1	46.0	48.1	49.1	49.6	49.6	51.2
9.6	Belgium .....	13.7	14.0	14.8	15.1	15.3	15.4	15.4
3.9	Eastern France .....	5.2	5.3	5.3	5.2	4.5	4.6	4.6
5.9	Northern France .....	8.8	8.8	10.0	11.4	11.5	11.5	11.5
2.9	France - other areas ... } <sup>1</sup>	3.2	3.8	3.5	3.7	3.9	3.9	3.9
12.7	France .....	17.2	17.9	18.8	20.3	19.9	20.0	20.0
10.4	Italy - coastal areas .....	15.3	15.8	16.0	16.0	16.3	16.2	16.1
—	Italy - other areas .....	0.2	0.3	—	—	—	—	—
10.4	Italy .....	15.5	16.1	16.0	16.0	16.3	16.2	16.1
3.8	Luxembourg .....	4.3	5.5	6.2	6.2	6.7	6.7	6.7
4.6	Netherlands .....	5.8	7.2	7.9	7.9	7.9	8.1	8.2
68.0	<b>Total EUR 6</b>	<b>98.6</b>	<b>106.6</b>	<b>111.9</b>	<b>114.8</b>	<b>115.7</b>	<b>116.1</b>	<b>117.7</b>
1.0	Scotland .....	1.2	1.2	1.3	1.3	2.1	2.7	2.9
3.2	Wales .....	4.1	4.6	4.5	4.5	5.4	5.2	5.9
5.7	Northern England .....	7.3	8.2	7.4	7.9	10.6	10.9	10.7
0.9	England - other regions ....	1.5	1.5	1.3	1.3	1.0	1.0	1.0
10.8	United Kingdom .....	14.1	15.6	14.6	15.1	19.2	19.9	20.5
—	Denmark .....	—	—	—	—	—	—	—
—	Ireland .....	—	—	—	—	—	—	—
78.9	<b>Total EUR 9</b>	<b>112.7</b>	<b>122.2</b>	<b>126.4</b>	<b>129.8</b>	<b>134.9</b>	<b>135.9</b>	<b>138.2</b>

<sup>1</sup> See note 2, p. 47.

BOTTOM BLOWN STEELS (OBM, LWS, ETC.)
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## Production

TABLE 49

## Production and production potential

million tonnes

7.3	<b>Total EUR 9</b>	10.1	11.8	12.8	14.8	17.8	18.0	16.6
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CONTINUOUS CASTING PLANTS
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## Production

TABLE 50

## Production and production potential by regions

million tonnes

Actual production	Region	Production potential			Expected production potential			
		1975	1976	1977	1978	1979	1980	1981
1977								
3.0	Northern Germany .....	3.3	3.8	3.7	4.1	4.1	4.1	4.1
8.0	North Rhine/Westphalia ...	7.7	10.5	11.8	13.2	14.6	16.2	17.1
1.0	Southern Germany .....	1.3	1.7	1.8	1.9	1.9	1.9	1.9
1.3	Saar .....	2.0	3.2	3.2	3.2	3.2	3.2	3.4
13.3	<i>FR of Germany</i> .....	14.3	19.2	20.6	22.4	23.9	25.5	26.6
1.7	<i>Belgium</i> .....	0.8	1.4	3.2	3.8	4.0	4.0	4.0
0.2	Eastern France .....	0.3	0.4	0.4	0.2	0.2	1.5	2.5
3.8	Northern France .....	4.0	4.1	5.2	5.6	5.9	6.2	6.6
1.2	France - other areas .... } <sup>1</sup>	0.7	1.4	1.1	1.4	1.6	1.6	1.6
5.2	<i>France</i> .....	5.0	5.9	6.7	7.3	7.7	9.4	10.8
2.6	Italy - coastal areas .....	4.0	4.9	4.8	6.4	6.4	6.8	7.7
6.4	Italy - other areas .....	6.0	7.2	8.2	8.8	9.1	9.4	9.7
9.0	<i>Italy</i> .....	10.0	12.1	13.1	15.1	15.5	16.2	17.4
—	<i>Luxembourg</i> .....	—	—	—	—	—	—	—
—	<i>Netherlands</i> .....	—	—	—	—	—	0.7	1.5
29.2	<b>Total EUR 6</b>	30.1	38.7	43.5	48.5	51.1	55.7	60.2
0.4	Scotland .....	0.6	0.6	0.7	0.9	1.1	1.5	1.5
0.2	Wales .....	0.0	0.1	0.9	1.1	1.2	1.5	1.5
1.3	Northern England .....	1.7	1.7	1.9	2.5	3.5	3.7	3.7
0.7	England - other regions ...	0.9	0.9	1.1	1.1	0.8	0.8	0.8
2.6	<i>United Kingdom</i> .....	3.2	3.3	4.7	5.6	6.6	7.4	7.4
0.3	<i>Denmark</i> .....	0.1	0.7	0.6	0.6	0.6	0.6	0.6
—	<i>Ireland</i> .....	—	—	—	—	—	0.2	0.2
32.1	<b>Total EUR 9</b>	33.4	42.6	48.8	54.7	58.3	64.0	68.5

<sup>1</sup> See note 2, p. 47.

## COILS

## Production

TABLE 51

## Production and production potential by regions

million tonnes

Actual production 1977	Region	Production potential			Expected production potential			
		1975	1976	1977	1978	1979	1980	1981
3.8	Northern Germany .....	6.3	6.3	6.6	6.6	6.6	6.6	6.6
10.0	North Rhine/Westphalia ...	12.7	13.1	13.6	13.6	13.6	14.1	14.1
—	Southern Germany .....	—	—	—	—	—	—	—
—	Saar .....	—	—	—	—	—	—	—
13.8	<i>FR of Germany</i> .....	19.0	19.3	20.3	20.3	20.3	20.8	20.8
5.6	<i>Belgium</i> .....	7.4	7.5	8.9	9.1	9.1	9.1	9.1
2.9	Eastern France .....	3.3	3.3	3.5	3.5	3.5	3.5	3.5
4.1	Northern France .....	6.1	6.1	6.2	6.4	6.4	6.4	6.4
2.5	France - other areas ....	2.2	2.8	3.0	3.1	3.2	3.2	3.2
9.6	<i>France</i> .....	11.6	12.2	12.7	13.0	13.1	13.1	13.1
5.5	Italy - coastal areas .....	10.3	10.3	10.5	10.6	10.6	10.6	10.6
0.7	Italy - other areas .....	0.7	0.8	0.9	0.9	1.0	1.0	1.0
6.2	<i>Italy</i> .....	11.0	11.1	11.3	11.6	11.6	11.6	11.6
0.4	<i>Luxembourg</i> .....	0.6	0.6	0.6	0.6	0.6	0.6	0.6
3.1	<i>Netherlands</i> .....	4.4	5.0	5.2	5.2	5.2	5.3	5.4
38.7	<b>Total EUR 6</b>	54.0	55.7	59.0	59.8	59.9	60.5	61.6
0.7	Scotland .....	1.2	0.9	0.7	0.7	1.3	1.4	1.6
4.2	Wales .....	5.2	5.3	6.2	6.1	6.7	6.3	6.9
0.5	Northern England .....	0.9	1.1	1.1	1.4	1.4	1.4	1.4
—	England - other regions ....	—	—	—	—	—	—	—
5.4	<i>United Kingdom</i> .....	7.3	7.3	8.1	8.2	9.5	9.1	9.9
—	<i>Denmark</i> .....	—	—	—	—	—	—	—
—	<i>Ireland</i> .....	—	—	—	—	—	—	—
44.1	<b>Total EUR 9</b>	61.3	63.0	67.1	68.0	69.4	69.6	70.5

<sup>1</sup> See note 2, p. 47.

<b>HEAVY SECTIONS (INCLUDING TUBE ROUNDS AND SQUARES)</b>
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Production

TABLE 52

Production and production potential by country

*million tonnes*

Actual pro- duction 1977	Country	Production potential			Expected production potential			
		1975	1976	1977	1978	1979	1980	1981
3.4	FR of Germany .....	6.5	6.7	6.7	7.0	7.0	7.1	7.2
1.2	Belgium .....	1.8	1.6	1.6	1.6	1.6	1.6	1.6
1.7	France .....	3.1	2.9	3.0	2.9	3.0	3.0	3.0
1.1	Italy .....	2.2	2.2	2.3	2.4	2.7	3.0	2.7
1.1	Luxembourg .....	1.6	1.9	1.9	1.9	1.9	1.9	1.9
0.0	Netherlands .....	—	0.0	0.0	0.0	0.0	0.0	0.0
8.6	Total EUR 6	15.1	15.3	15.4	15.9	16.2	16.6	16.4
1.9	United Kingdom .....	2.8	2.8	3.1	3.4	3.5	3.6	3.6
0.0	Denmark .....	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	Ireland .....	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10.7	Total EUR 9	18.0	18.1	18.6	19.3	19.8	20.1	20.1

LIGHT SECTIONS
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Production
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TABLE 53

## Production and production potential by country

million tonnes

Actual production 1977	Country	Production potential			Expected production potential			
		1975	1976	1977	1978	1979	1980	1981
4.1	FR of Germany .....	9.4	9.3	9.0	9.0	9.1	8.7	8.7
1.0	Belgium .....	4.0	3.7	2.8	2.5	2.7	2.7	2.7
2.7	France .....	4.4	4.8	4.4	4.0	3.9	4.1	4.1
6.9	Italy .....	8.1	8.7	8.6	8.6	8.8	8.8	8.8
0.7	Luxembourg .....	1.5	1.6	1.6	1.7	1.7	1.5	1.6
0.3	Netherlands .....	0.4	0.4	0.5	0.5	0.5	0.5	0.5
15.6	Total EUR 6	27.8	28.5	26.9	26.4	26.7	26.3	26.5
2.9	United Kingdom .....	4.6	4.5	4.3	4.3	4.4	4.5	4.5
0.2	Denmark .....	0.2	0.3	0.3	0.3	0.3	0.3	0.3
0.0	Ireland .....	0.1	0.1	0.1	0.1	0.1	0.1	0.1
18.8	Total EUR 9	32.7	33.5	31.6	31.2	31.5	31.2	31.4

FERRO-CONCRETE BARS <sup>1</sup>
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## Production

TABLE 54

## Production and production potential by countries

million tonnes

Actual production 1977	Country	Production potential 1977	Expected production potential			
			1978	1979	1980	1981
1.5	FR of Germany .....	3.2	3.2	3.2	3.2	3.2
0.4	Belgium .....	1.4	0.9	0.9	0.9	0.9
0.6	France .....	0.5	0.2	0.2	0.2	0.2
2.7	Italy .....	3.6	3.6	3.7	3.7	3.7
0.3	Luxembourg .....	0.7	0.7	0.7	0.6	0.6
0.3	Netherlands .....	0.5	0.5	0.5	0.5	0.5
5.8	<b>Total EUR 6</b>	9.9	9.2	9.3	9.2	9.2
0.5	United Kingdom .....	0.5	0.6	0.7	0.7	0.7
0.1	Denmark .....	0.1	0.1	0.1	0.1	0.1
—	Ireland .....	0.0	0.0	0.0	0.0	0.0
6.4	<b>Total EUR 9</b>	10.4	9.9	10.0	10.0	10.0

<sup>1</sup> Already included - for rods in Table 53 'Light sections' and coils in Table 56 'Wire rod'.

**HEAVY AND LIGHT  
SECTIONS (INCLUDING  
TUBE ROUNDS AND  
SQUARES)**

**Production**

TABLE 55

**Production and production potential by regions**

*million tonnes*

Actual pro- duction  1977	Region	Production potential			Expected production potential			
		1975	1976	1977	1978	1979	1980	1981
1.3	Northern Germany .....	2.3	2.2	2.4	2.9	2.9	2.9	2.9
4.1	North Rhine/Westphalia ...	8.8	8.9	8.7	8.8	8.8	8.5	8.5
0.8	Southern Germany .....	1.7	1.8	1.7	1.7	1.7	1.7	1.7
1.3	Saar .....	3.1	3.0	2.9	2.6	2.6	2.6	2.7
7.6	<i>FR of Germany</i> .....	15.9	16.0	15.6	16.0	16.1	15.7	15.8
2.2	<i>Belgium</i> .....	5.7	5.4	4.4	4.2	4.3	4.3	4.3
2.6	Eastern France .....	4.5	4.6	4.6	4.4	4.1	4.1	4.1
1.4	Northern France .....	1.5	1.5	2.1	2.0	2.2	2.2	2.2
0.4	France - other areas ... } <sup>1</sup>	1.6	1.6	0.7	0.6	0.6	0.6	0.7
4.4	<i>France</i> .....	7.6	7.7	7.4	7.0	6.9	7.0	7.1
1.1	Italy - coastal areas .....	1.9	2.6	2.5	2.5	2.6	2.8	2.3
6.8	Italy - other areas .....	8.4	8.3	8.4	8.5	8.8	9.0	9.2
8.0	<i>Italy</i> .....	10.3	10.9	10.9	11.0	11.4	11.8	11.5
1.8	<i>Luxembourg</i> .....	3.1	3.5	3.5	3.6	3.6	3.4	3.5
0.3	<i>Netherlands</i> .....	0.4	0.4	0.5	0.5	0.5	0.5	0.5
24.3	<b>Total EUR 6</b>	43.0	43.8	42.3	42.3	42.8	42.7	42.7
0.2	Scotland .....	0.4	0.4	0.4	0.5	0.5	0.5	0.5
0.4	Wales .....	0.5	0.7	0.5	0.5	0.6	0.6	0.7
3.0	Northern England .....	4.2	4.1	4.8	5.0	5.1	5.1	5.1
1.3	England - other regions ....	2.3	2.2	1.7	1.7	1.8	1.8	1.8
5.0	<i>United Kingdom</i> .....	7.4	7.3	7.4	7.7	7.9	8.0	8.1
0.2	<i>Denmark</i> .....	0.3	0.3	0.3	0.3	0.3	0.3	0.3
—	<i>Ireland</i> .....	0.1	0.1	0.1	0.1	0.1	0.2	0.2
29.5	<b>Total EUR 9</b>	50.8	51.6	50.1	50.4	51.1	51.2	51.3

<sup>1</sup> See note 2, p. 47.

<b>WIRE ROD</b>
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<b>Production</b>
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TABLE 56

## Production and production potential by regions

million tonnes

Actual production 1977	Region	Production potential			Expected production potential			
		1975	1976	1977	1978	1979	1980	1981
0.3	Northern Germany .....	0.7	0.7	0.7	0.7	0.7	0.7	0.7
1.9	North Rhine/Westphalia ...	3.6	3.6	3.8	3.8	3.8	3.8	3.8
0.2	Southern Germany .....	0.4	0.4	0.3	0.3	0.3	0.3	0.3
0.8	Saar .....	1.6	1.6	1.6	1.6	1.6	1.6	1.6
3.2	FR of Germany .....	6.3	6.3	6.4	6.5	6.5	6.5	6.5
0.6	Belgium .....	0.9	0.9	1.2	1.2	1.2	1.4	1.4
1.6	Eastern France .....	2.8	2.8	2.6	2.5	2.5	2.5	2.5
0.6	Northern France .....	0.3	0.4	1.0	1.2	1.2	1.2	1.2
0.1	France - other areas .... } <sup>1</sup>	0.7	0.6	0.1	0.1	0.1	0.1	0.1
2.2	France .....	3.8	3.7	3.6	3.8	3.8	3.8	3.8
0.2	Italy - coastal areas .....	0.3	0.3	0.4	0.4	0.5	0.7	0.4
1.3	Italy - other areas .....	1.5	1.7	1.7	1.9	2.2	2.1	2.2
1.5	Italy .....	1.8	2.0	2.1	2.3	2.7	2.8	2.6
0.3	Luxembourg .....	0.5	0.5	0.5	0.5	0.5	0.5	0.5
0.3	Netherlands .....	0.5	0.5	0.6	0.6	0.6	0.6	0.6
8.1	<b>Total EUR 6</b>	<b>13.8</b>	<b>14.0</b>	<b>14.4</b>	<b>14.9</b>	<b>15.3</b>	<b>15.6</b>	<b>15.5</b>
—	Scotland .....	—	—	—	—	—	—	—
0.2	Wales .....	0.4	0.4	0.3	0.4	0.5	0.6	0.6
1.7	Northern England .....	2.0	2.2	2.7	2.8	2.9	2.9	2.9
0.1	England - other regions ...	0.1	0.2	0.1	0.1	0.1	0.1	0.1
2.1	United Kingdom .....	2.5	2.7	3.1	3.3	3.5	3.6	3.6
0.0	Denmark .....	—	—	0.0	—	—	—	—
—	Ireland .....	—	—	—	—	—	—	—
10.2	<b>Total EUR 9</b>	<b>16.3</b>	<b>16.7</b>	<b>17.6</b>	<b>18.1</b>	<b>18.9</b>	<b>19.2</b>	<b>19.1</b>

<sup>1</sup> See note 2, p. 47.

<b>HOOP AND STRIP AND TUBEMAKING STRIP FROM SPECIAL MILLS</b>
---

Production

TABLE 57

Production and production potential by country

*million tonnes*

Actual pro- duction	Country	Production potential			Expected production potential			
		1975	1976	1977	1978	1979	1980	1981
1977								
1.6	<i>FR of Germany</i> .....	2.7	2.5	2.6	2.4	2.4	2.4	2.4
0.1	<i>Belgium</i> .....	0.2	0.2	0.2	0.2	0.2	0.2	0.2
0.9	<i>France</i> .....	1.5	1.5	1.5	1.5	1.5	1.5	1.5
0.7	<i>Italy</i> .....	1.2	1.3	1.3	1.3	1.3	1.3	1.3
0.6	<i>Luxembourg</i> .....	1.1	1.2	1.2	1.2	1.2	1.3	1.3
—	<i>Netherlands</i> .....	0.0	0.0	—	—	—	—	—
3.9	Total EUR 6	6.7	6.8	6.8	6.7	6.7	6.7	6.7
1.1	<i>United Kingdom</i> .....	1.8	1.7	1.7	1.7	1.7	1.7	1.7
—	<i>Denmark</i> .....	—	—	—	—	—	—	—
—	<i>Ireland</i> .....	—	—	—	—	—	—	—
5.0	Total EUR 9	8.5	8.4	8.5	8.4	8.3	8.4	8.4

<b>HOOP AND STRIP AND TUBEMAKING STRIP FROM COILS</b>
---

Production

TABLE 58

Production and production potential by country

*million tonnes*

Actual pro- duction 1977	Country	Production potential			Expected production potential			
		1975	1976	1977	1978	1979	1980	1981
0.7	FR of Germany .....	1.1	1.6	1.8	1.9	2.0	2.0	2.0
0.0	Belgium .....	0.1	0.1	0.1	0.1	0.1	0.1	0.1
0.3	France .....	0.6	0.7	0.7	0.8	0.8	0.8	0.8
0.1	Italy .....	0.4	0.4	0.3	0.3	0.3	0.3	0.3
0.0	Luxembourg .....	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.2	Netherlands .....	0.3	0.4	0.4	0.4	0.4	0.4	0.4
1.4	Total EUR 6	2.5	3.3	3.4	3.6	3.7	3.7	3.7
0.0	United Kingdom .....	0.0	0.1	0.2	0.2	0.2	0.2	0.2
—	Denmark .....	—	—	—	—	—	—	—
—	Ireland .....	—	—	—	—	—	—	—
1.4	Total EUR 9	2.5	3.4	3.5	3.8	3.9	3.9	3.9

<b>HOOP AND STRIP FOR TUBE MAKING</b>
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Production

TABLE 59

Production and production potential by regions

*million tonnes*

Actual pro- duction  1977	Region	Production potential			Expected production potential			
		1975	1976	1977	1978	1979	1980	1981
0.1	Northern Germany .....	0.2	0.4	0.2	0.2	0.2	0.2	0.2
2.0	North Rhine/Westphalia ...	3.2	3.4	3.8	3.8	3.8	3.8	3.8
0.1	Southern Germany .....	0.1	0.1	0.1	0.1	0.1	0.1	0.1
0.2	Saar .....	0.3	0.3	0.3	0.3	0.3	0.3	0.3
2.3	<i>FR of Germany</i> .....	3.8	4.2	4.4	4.4	4.4	4.4	4.4
0.1	<i>Belgium</i> .....	0.3	0.3	0.3	0.3	0.3	0.3	0.3
0.9	Eastern France .....	1.5	1.6	1.5	1.3	1.3	1.3	1.3
0.2	Northern France .....	0.2	0.2	0.3	0.5	0.5	0.5	0.5
0.1	France - other areas.....	0.4	0.4	0.4	0.5	0.5	0.5	0.5
1.2	<i>France</i> .....	2.1	2.2	2.2	2.3	2.3	2.3	2.3
0.3	Italy - coastal areas .....	0.9	0.9	0.8	0.8	0.8	0.8	0.8
0.5	Italy - other areas .....	0.7	0.8	0.8	0.8	0.8	0.8	0.8
0.8	<i>Italy</i> .....	1.6	1.7	1.6	1.6	1.6	1.6	1.6
0.6	<i>Luxembourg</i> .....	1.2	1.2	1.2	1.2	1.2	1.4	1.4
0.2	<i>Netherlands</i> .....	0.3	0.4	0.4	0.4	0.4	0.4	0.4
5.3	<b>Total EUR 6</b>	9.3	10.1	10.2	10.3	10.3	10.4	10.4
—	Scotland .....	—	—	—	—	—	—	—
0.1	Wales .....	0.2	0.2	0.3	0.3	0.3	0.3	0.3
0.3	Northern England .....	0.4	0.5	0.4	0.4	0.4	0.4	0.4
0.7	England - other regions ....	1.2	1.1	1.1	1.2	1.2	1.2	1.2
1.1	<i>United Kingdom</i> .....	1.8	1.8	1.9	1.9	1.9	1.9	1.9
—	<i>Denmark</i> .....	—	—	—	—	—	—	—
—	<i>Ireland</i> .....	—	—	—	—	—	—	—
6.4	<b>Total EUR 9</b>	11.1	11.9	12.0	12.2	12.2	12.3	12.3

<sup>1</sup> See note 2, p. 47.

<p style="text-align: center;">HEAVY AND MEDIUM PLATE FROM SPECIAL MILLS (INCLUDING WIDE FLATS)</p>
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Production

TABLE 60

## Production and production potential by country

million tonnes

Actual pro- duction 1977	Country	Production potential			Expected production potential			
		1975	1976	1977	1978	1979	1980	1981
3.5	<i>FR of Germany</i> .....	7.5	7.9	8.6	8.9	8.9	8.9	8.9
0.8	<i>Belgium</i> .....	1.4	1.4	1.6	1.6	1.6	1.6	1.6
1.1	<i>France</i> .....	1.8	1.7	1.6	1.6	1.6	1.6	1.6
2.2	<i>Italy</i> .....	3.6	3.7	3.7	4.2	4.2	4.2	4.2
0.1	<i>Luxembourg</i> .....	0.1	0.1	0.1	0.1	0.1	0.1	0.1
0.2	<i>Netherlands</i> .....	0.5	0.5	0.5	0.5	0.5	0.5	0.5
7.9	<b>Total EUR 6</b>	<b>14.9</b>	<b>15.3</b>	<b>16.1</b>	<b>17.0</b>	<b>17.0</b>	<b>17.0</b>	<b>17.0</b>
1.4	<i>United Kingdom</i> .....	2.1	2.3	2.5	2.5	2.5	2.5	2.5
0.3	<i>Denmark</i> .....	0.3	0.5	0.6	0.6	0.6	0.6	0.6
—	<i>Ireland</i> .....	—	—	—	—	—	—	—
9.6	<b>Total EUR 9</b>	<b>17.3</b>	<b>18.1</b>	<b>19.2</b>	<b>20.1</b>	<b>20.2</b>	<b>20.2</b>	<b>20.2</b>

HEAVY AND MEDIUM PLATE FROM COILS
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Production

TABLE 61

Production and production potential by country

*million tonnes*

Actual production 1977	Country	Production potential			Expected production potential			
		1975	1976	1977	1978	1979	1980	1981
0.9	<i>FR of Germany</i> .....	1.7	2.0	2.0	2.0	2.0	2.0	2.0
0.4	<i>Belgium</i> .....	1.0	0.8	0.8	0.8	0.8	0.8	0.8
0.5	<i>France</i> .....	1.3	1.3	1.3	1.5	1.5	1.5	1.5
0.1	<i>Italy</i> .....	0.7	0.7	0.7	0.7	0.7	0.7	0.7
0.1	<i>Luxembourg</i> .....	0.1	0.1	0.1	0.1	0.1	0.1	0.1
0.1	<i>Netherlands</i> .....	0.3	0.2	0.2	0.2	0.2	0.2	0.2
2.1	Total EUR 6	5.1	5.2	5.2	5.4	5.4	5.4	5.4
0.4	<i>United Kingdom</i> .....	0.5	0.4	0.5	0.6	0.7	0.6	0.6
—	<i>Denmark</i> .....	—	—	—	—	—	—	—
—	<i>Ireland</i> .....	—	—	—	—	—	—	—
2.5	Total EUR 9	5.5	5.6	5.8	6.0	6.1	6.1	6.1

PLATE  $\geq$  3 mm  
(INCLUDING  
WIDE FLATS)

Production

TABLE 62

Production and production potential by regions

*million tonnes*

Actual pro- duction  1977	Region	Production potential			Expected production potential			
		1975	1976	1977	1978	1979	1980	1981
0.5	Northern Germany .....	1.0	1.0	1.1	1.1	1.1	1.1	1.1
3.2	North Rhine/Westphalia ...	6.4	6.9	7.1	7.4	7.4	7.4	7.4
0.0	Southern Germany .....	—	—	0.0	0.0	0.0	0.0	0.0
0.6	Saar .....	1.9	2.0	2.3	2.3	2.3	2.3	2.3
4.4	<i>FR of Germany</i> .....	9.3	9.9	10.6	10.9	10.9	10.9	10.9
1.2	<i>Belgium</i> .....	2.4	2.2	2.4	2.5	2.5	2.5	2.5
0.4	Eastern France .....	1.1	1.0	1.0	1.0	1.0	1.0	1.0
0.9	Northern France .....	1.3	1.3	1.4	1.4	1.4	1.4	1.4
0.3	France - other areas .... } <sup>1</sup>	0.6	0.7	0.5	0.7	0.7	0.7	0.7
1.6	<i>France</i> .....	3.0	3.0	2.9	3.1	3.1	3.1	3.1
1.8	Italy - coastal areas .....	3.4	3.6	3.4	3.9	3.9	3.9	3.9
0.5	Italy - other areas .....	0.8	0.8	1.0	1.0	1.0	1.0	1.0
2.3	<i>Italy</i> .....	4.2	4.4	4.4	4.9	4.9	4.9	4.9
0.2	<i>Luxembourg</i> .....	0.3	0.3	0.3	0.3	0.3	0.3	0.3
0.3	<i>Netherlands</i> .....	0.8	0.7	0.7	0.7	0.7	0.7	0.7
10.0	<b>Total EUR 6</b>	20.0	20.5	21.3	22.4	22.4	22.4	22.4
0.4	Scotland .....	0.6	0.6	0.7	0.8	0.8	0.8	0.8
0.2	Wales .....	0.2	0.1	0.3	0.2	0.2	0.2	0.2
1.0	Northern England .....	1.5	1.7	1.6	1.8	1.9	1.9	1.9
0.2	England - other regions ....	0.3	0.3	0.3	0.3	0.3	0.3	0.3
1.8	<i>United Kingdom</i> .....	2.6	2.7	3.0	3.1	3.2	3.2	3.2
0.3	<i>Denmark</i> .....	0.3	0.5	0.6	0.6	0.6	0.6	0.6
—	<i>Ireland</i> .....	—	—	—	—	—	—	—
12.1	<b>Total EUR 9</b>	22.9	23.7	24.9	26.2	26.2	26.2	26.2

<sup>1</sup> See note 2, p. 47.

**HOT-ROLLED SHEET**  
**< 3 mm <sup>1</sup>**
**Production**

TABLE 63

**Production and production potential by regions**

million tonnes

Actual pro- duction  1977	Region	Production potential			Expected production potential			
		1975	1976	1977	1978	1979	1980	1981
0.0	Northern Germany .....	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.1	North Rhine/Westphalia ...	0.2	0.2	0.1	0.1	0.1	0.1	0.1
—	Southern Germany .....	—	—	—	—	—	—	—
—	Saar .....	—	—	—	—	—	—	—
0.1	<i>FR of Germany</i> .....	0.2	0.2	0.1	0.1	0.1	0.1	0.1
0.0	<i>Belgium</i> .....	0.1	0.2	0.3	0.3	0.3	0.3	0.3
0.0	Eastern France .....	0.1	0.1	0.1	0.1	0.1	0.1	0.1
0.0	Northern France .....	0.1	0.1	0.1	0.1	0.1	0.1	0.1
0.0	France - other areas.....	0.2	0.2	0.2	0.2	0.2	0.2	0.2
0.1	<i>France</i> .....	0.4	0.4	0.3	0.4	0.4	0.4	0.4
0.0	Italy - coastal areas .....	0.4	0.4	0.4	0.4	0.4	0.4	0.4
—	Italy - other areas .....	—	—	—	—	—	—	—
0.0	<i>Italy</i> .....	0.4	0.4	0.4	0.4	0.4	0.4	0.4
—	<i>Luxembourg</i> .....	—	—	—	—	—	—	—
0.0	<i>Netherlands</i> .....	0.0	0.0	0.0	0.0	0.0	0.0	0.1
0.3	<b>Total EUR 6</b>	<b>1.1</b>	<b>1.3</b>	<b>1.2</b>	<b>1.3</b>	<b>1.3</b>	<b>1.3</b>	<b>1.3</b>
0.0	Scotland .....	0.0	0.0	0.0	0.0	0.1	0.0	0.0
0.1	Wales .....	0.1	0.1	0.3	0.3	0.3	0.3	0.3
0.0	Northern England .....	0.0	0.0	0.0	0.0	0.0	0.0	0.0
—	England - other regions ....	—	—	—	—	—	—	—
0.1	<i>United Kingdom</i> .....	0.1	0.1	0.3	0.3	0.3	0.3	0.3
—	<i>Denmark</i> .....	—	—	—	—	—	—	—
—	<i>Ireland</i> .....	—	—	—	—	—	—	—
0.4	<b>Total EUR 9</b>	<b>1.2</b>	<b>1.4</b>	<b>1.5</b>	<b>1.6</b>	<b>1.6</b>	<b>1.6</b>	<b>1.6</b>

<sup>1</sup> Except coils-finished products.<sup>2</sup> See note 2, p. 47.

<b>COLD-REDUCED SHEET &lt; 3 mm</b>
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**Production**

TABLE 64  
Production and production potential by regions

*million tonnes*

Actual production 1977	Region	Production potential			Expected production potential			
		1975	1976	1977	1978	1979	1980	1981
1.6	Northern Germany .....	2.5	2.5	2.7	2.7	2.7	2.7	2.7
4.8	North Rhine/Westphalia ...	7.5	7.9	8.1	8.1	8.1	8.3	8.3
1.6	Southern Germany .....	2.8	2.8	2.9	2.9	2.9	2.9	2.9
—	Saar .....	—	—	—	—	—	—	—
8.0	<i>FR of Germany</i> .....	12.8	13.1	13.7	13.7	13.7	13.9	13.9
3.3	<i>Belgium</i> .....	4.8	4.9	5.0	5.1	5.1	5.1	5.1
3.0	Eastern France .....	3.7	3.8	3.8	3.8	3.8	3.8	3.8
2.8	Northern France .....	3.9	4.0	4.9	4.8	4.8	4.8	4.8
0.3	France - other areas .... } <sup>1</sup>	0.7	0.9	0.5	0.5	0.5	0.6	0.6
6.1	<i>France</i> .....	8.3	8.7	9.2	9.2	9.2	9.2	9.2
1.6	Italy - coastal areas .....	2.7	2.9	2.9	3.4	3.4	3.4	3.4
2.3	Italy - other areas .....	2.9	2.9	3.0	3.1	3.2	3.4	3.4
3.9	<i>Italy</i> .....	5.6	5.8	5.9	6.4	6.6	6.7	6.8
0.3	<i>Luxembourg</i> .....	0.4	0.4	0.4	0.4	0.4	0.4	0.4
1.6	<i>Netherlands</i> .....	2.4	2.7	2.7	2.8	2.9	3.0	3.0
23.3	<b>Total EUR 6</b>	34.3	35.6	36.9	37.6	37.9	38.3	38.4
0.4	Scotland .....	0.6	0.6	0.6	0.6	0.8	0.8	0.8
3.4	Wales .....	5.5	5.0	5.1	5.3	5.5	5.5	5.5
0.0	Northern England .....	0.0	0.1	0.1	0.1	0.1	0.1	0.1
—	England - other regions ...	—	—	—	—	—	—	—
3.8	<i>United Kingdom</i> .....	6.1	5.7	5.8	5.9	6.4	6.4	6.4
—	<i>Denmark</i> .....	—	—	—	—	—	—	—
—	<i>Ireland</i> .....	—	—	—	—	—	—	—
27.1	<b>Total EUR 9</b>	40.4	41.3	42.7	43.6	44.3	44.7	44.8

<sup>1</sup> See note 2, p. 47.

## SECTIONS - TOTAL

## Production

TABLE 65

## Production and production potential by regions

million tonnes

Actual production 1977	Region	Production potential			Expected production potential			
		1975	1976	1977	1978	1979	1980	1981
1.6	Northern Germany .....	3.0	2.9	3.1	3.7	3.7	3.7	3.7
6.0	North Rhine/Westphalia ...	12.4	12.5	12.5	12.6	12.7	12.3	12.3
1.0	Southern Germany .....	2.1	2.2	1.9	2.0	2.0	2.0	2.0
2.1	Saar .....	4.7	4.6	4.5	4.2	4.2	4.2	4.3
10.8	<i>FR of Germany</i> .....	22.2	22.2	22.0	22.5	22.6	22.2	22.3
2.8	<i>Belgium</i> .....	6.7	6.3	5.6	5.4	5.5	5.8	5.8
4.2	Eastern France .....	7.2	7.4	7.1	6.9	6.6	6.6	6.6
2.0	Northern France .....	1.9	1.9	3.1	3.2	3.4	3.4	3.4
0.5	France - other areas.... } <sup>1</sup>	2.3	2.1	0.8	0.7	0.7	0.8	0.8
6.6	<i>France</i> .....	11.4	11.4	11.0	10.8	10.7	10.8	10.9
1.3	Italy - coastal areas .....	2.2	2.9	2.9	2.9	3.1	3.5	2.7
8.2	Italy - other areas .....	9.9	10.0	10.2	10.4	11.0	11.1	11.4
9.4	<i>Italy</i> .....	12.1	12.9	13.1	13.3	14.1	14.6	14.1
2.2	<i>Luxembourg</i> .....	3.6	4.0	4.0	4.1	4.1	4.0	4.0
0.6	<i>Netherlands</i> .....	0.9	0.9	1.1	1.1	1.2	1.2	1.2
32.5	<b>Total EUR 6</b>	56.9	57.7	56.8	57.2	58.2	58.6	58.3
0.2	Scotland .....	0.3	0.4	0.4	0.5	0.5	0.5	0.5
0.6	Wales .....	0.9	1.0	0.8	0.9	1.1	1.2	1.3
4.8	Northern England .....	6.2	6.3	7.5	7.7	7.9	7.9	7.9
1.4	England - other regions ....	2.4	2.4	1.8	1.9	1.9	1.9	1.9
7.0	<i>United Kingdom</i> .....	9.8	10.1	10.5	11.0	11.4	11.6	11.7
0.2	<i>Denmark</i> .....	0.3	0.3	0.3	0.3	0.3	0.3	0.3
—	<i>Ireland</i> .....	0.1	0.1	0.1	0.1	0.1	0.2	0.2
39.7	<b>Total EUR 9</b>	67.1	68.2	67.7	68.6	69.9	70.7	70.5

<sup>1</sup> See note 2, p. 47.

<b>FLAT PRODUCTS <sup>1</sup></b>
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<b>Production</b>
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TABLE 66

## Production and production potential by regions

million tonnes

Actual production 1977	Region	Production potential			Expected production potential			
		1975	1976	1977	1978	1979	1980	1981
2.3	Northern Germany .....	3.7	3.9	4.1	4.1	4.1	4.1	4.1
10.1	North Rhine/Westphalia ...	17.3	18.4	19.1	19.5	19.5	19.6	19.6
1.7	Southern Germany .....	2.9	2.9	3.0	3.0	3.0	3.0	3.0
0.8	Saar .....	2.2	2.3	2.6	2.6	2.6	2.6	2.6
14.8	FR of Germany .....	26.1	27.3	28.8	29.1	29.1	29.3	29.3
4.6	Belgium .....	7.6	7.7	8.0	8.2	8.2	8.2	8.2
4.3	Eastern France .....	6.4	6.5	6.4	6.2	6.3	6.3	6.3
4.0	Northern France .....	5.4	5.6	6.7	6.7	6.7	6.7	6.7
0.7	France - other areas .... } <sup>2</sup>	1.9	2.2	1.7	2.0	2.0	2.0	2.1
9.0	France .....	13.7	14.3	14.7	15.0	15.0	15.0	15.1
3.8	Italy - coastal areas .....	7.4	7.7	7.5	8.5	8.5	8.5	8.5
3.2	Italy - other areas .....	4.4	4.6	4.8	4.9	5.1	5.2	5.2
7.1	Italy .....	11.8	12.3	12.3	13.4	13.6	13.7	13.7
1.1	Luxembourg .....	1.9	1.9	1.9	1.9	1.9	2.0	2.0
2.2	Netherlands .....	3.5	3.8	3.9	4.0	4.1	4.2	4.2
38.8	<b>Total EUR 6</b>	<b>64.6</b>	<b>67.4</b>	<b>69.6</b>	<b>71.6</b>	<b>71.9</b>	<b>72.4</b>	<b>72.5</b>
0.8	Scotland .....	1.2	1.3	1.3	1.4	1.7	1.6	1.6
3.7	Wales .....	6.0	5.4	6.0	6.0	6.2	6.2	6.2
1.4	Northern England .....	1.9	2.2	2.2	2.4	2.4	2.4	2.4
0.9	England - other regions ....	1.5	1.4	1.5	1.5	1.5	1.5	1.5
6.9	United Kingdom .....	10.6	10.3	11.0	11.3	11.8	11.8	11.8
0.3	Denmark .....	0.3	0.5	0.6	0.6	0.6	0.6	0.6
—	Ireland .....	—	—	—	—	—	—	—
46.0	<b>Total EUR 9</b>	<b>75.5</b>	<b>78.2</b>	<b>81.2</b>	<b>83.5</b>	<b>84.3</b>	<b>84.8</b>	<b>84.9</b>

<sup>1</sup> Except coils-finished products.<sup>2</sup> See note 2, p. 47.

<b>TOTAL FINISHED ROLLED PRODUCTS <sup>1</sup></b>
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Production

TABLE 67  
Production and production potential by regions

*million tonnes*

Actual pro- duction 1977	Region	Production potential			Expected production potential			
		1975	1976	1977	1978	1979	1980	1981
3.9	Northern Germany .....	6.8	6.8	7.2	7.7	7.7	7.7	7.7
16.1	North Rhine/Westphalia ...	29.7	30.8	31.6	32.1	32.2	31.9	31.9
2.6	Southern Germany .....	4.9	5.0	4.9	5.0	5.0	5.0	5.0
2.9	Saar .....	6.8	6.9	7.1	6.8	6.8	6.8	7.0
25.6	<i>FR of Germany</i> .....	48.2	49.6	50.8	51.6	51.7	51.5	51.6
7.4	<i>Belgium</i> .....	14.3	14.0	13.7	13.6	13.7	13.9	13.9
8.5	Eastern France .....	13.6	13.9	13.5	13.1	12.9	12.9	12.9
6.0	Northern France .....	7.3	7.4	9.8	9.9	10.1	10.2	10.2
1.2	France - other areas .... } <sup>2</sup>	4.2	4.4	2.5	2.7	2.7	2.8	2.9
15.7	<i>France</i> .....	25.1	25.7	25.8	25.8	25.7	25.8	25.9
5.1	Italy - coastal areas .....	9.7	10.6	10.4	11.4	11.6	12.0	11.2
11.4	Italy - other areas .....	14.3	14.6	15.0	15.4	16.1	16.3	16.6
16.5	<i>Italy</i> .....	24.0	25.2	25.4	26.8	27.7	28.3	27.8
3.3	<i>Luxembourg</i> .....	5.5	5.9	5.9	6.0	6.0	6.0	6.0
2.8	<i>Netherlands</i> .....	4.4	4.8	5.0	5.1	5.2	5.3	5.4
71.2	Total EUR 6	121.5	125.1	126.6	128.9	130.0	130.8	130.6
1.0	Scotland .....	1.5	1.7	1.7	1.9	2.2	2.1	2.1
4.3	Wales .....	6.9	6.5	6.8	6.9	7.3	7.5	7.5
6.2	Northern England .....	8.1	8.4	9.6	10.1	10.3	10.4	10.4
2.3	England - other regions ....	3.9	3.8	3.3	3.4	3.4	3.4	3.4
13.9	<i>United Kingdom</i> .....	20.4	20.3	21.5	22.3	23.2	23.4	23.4
0.6	<i>Denmark</i> .....	0.6	0.8	0.9	0.9	0.9	0.9	0.9
0.0	<i>Ireland</i> .....	0.1	0.1	0.1	0.1	0.1	0.2	0.2
85.7	Total EUR 9	142.6	146.4	149.1	152.2	154.2	155.3	155.2

<sup>1</sup> Except coils-finished products.

<sup>2</sup> See note 2, p. 47.

FINISHED ROLLED PRODUCTS
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Production

TABLE 68

Actual and expected rates of growth of production potential for finished steel products

Products	Actual production			Production potential				
	1960 (mil- lion ton- nes	Average annual move- ment %	1977 (mil- lion ton- nes	1973 (mil- lion ton- nes	Average annual move- ment %	1977 (mil- lion ton- nes	Average annual move- ment %	1981 (mil- lion ton- nes
Heavy and light sections, incl. tube rounds and squares .....	28.4	1.3	29.5	47.9	1.0	50.1	0.6	51.3
Wire rod .....	6.9	3.1	10.2	14.3	5.3	17.6	2.1	19.1
Total sections	35.3	1.7	39.7	62.2	2.0	67.7	1.1	70.5
Hoop for tubemaking .....	6.5	1.0	6.4	10.5	3.4	12.0	0.6	12.3
Plate of 3 mm and over <sup>1</sup> .....	10.9	1.9	12.1	21.0	4.3	24.9	1.3	26.2
Hot-rolled sheet under 3 mm <sup>1</sup> .....	3.5 <sup>(2)</sup>	-4.9	0.4	1.1	8.1	1.5	1.6	1.6
Cold-rolled sheet under 3 mm <sup>1</sup> .....	11.0 <sup>(2)</sup>	7.5	27.1	37.0	3.6	42.7	1.5	44.8
Total flats	31.9	2.9	46.0	69.6	3.9	81.2	1.3	84.9
Total finished rolled products <sup>1</sup>	67.2	2.3	85.7	131.8	3.1	149.1	1.1	155.2
Coils-finished products .....	*	*	10.0	4.7	33.2	14.8	—	15.2
Grand total EUR	*	*	95.7	136.5	4.6	163.9	1.0	170.4

<sup>1</sup> Exclusive of coils rating as end products.

<sup>2</sup> Estimated breakdown of hot and cold rolled sheet < 3 mm.

\* Figures not available.

<b>RATE OF UTILIZATION OF PRODUCTION POTENTIAL</b>
--

Production

TABLE 69  
Movement by stages in production since <sup>1</sup>

Sectors	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977
Pig iron.....	94.3	90.9	85.5	81.0	88.2	83.8	77.0	79.2	84.8	89.7	85.4	76.6	79.9	84.4	87.5	64.8	66.7	61.5
Crude steel ...	95.6	91.7	87.3	83.4	90.0	84.3	78.7	80.0	85.9	88.8	86.1	76.1	81.0	86.0	86.9	66.1	67.8	62.8
Finished products <sup>2</sup> ....	89.6	87.2	82.9	78.9	83.9	75.9	69.5	68.9	73.2	80.4	78.3	69.3	71.1	78.4	78.6	57.6	60.3	57.5

<sup>1</sup> Up to and including 1972, Community in its original form only.

<sup>2</sup> Except coils finished products.

TABLE 70

By stages of production and countries 1977

RATE OF UTILIZATION OF PRODUCTION POTENTIAL
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Production

in %

Country	Pig iron	Basic Bessemer and other	OBM, LWS	Open hearth	Electric	LD, Kaldo and other	Crude steel total	Continuous casting	Coils	Heavy sections	Light sections	Wire rod	Hoop and skip	Plate $\geq$ 3 mm	Cold-reduced sheet < 3 mm	Finished rolled products Total (excl. coils finished products)	Pro memoria finished rolled products - Total	
																	1975	1976
FR of Germany .....	56.9	—	54.5	60.9	68.4	55.6	57.6	64.4	67.9	51.1	46.3	50.5	53.2	41.4	58.5	52.4	53.9	54.2
Belgium .....	56.8	—	32.4	21.9	59.0	65.2	58.8	52.2	63.0	74.6	36.0	48.2	31.4	47.8	66.0	54.2	51.1	55.4
France .....	66.8	46.6	74.1	71.3	69.8	67.8	66.4	78.4	75.3	57.4	61.4	61.1	54.3	54.6	66.4	61.0	60.7	64.4
Italy .....	66.8	0	—	53.7	75.4	65.2	68.6	68.5	54.6	50.5	80.2	69.5	50.9	52.3	67.1	65.0	60.3	65.4
Luxembourg .....	55.6	0	74.7	—	65.0	61.5	52.4	—	71.5	54.6	44.7	62.4	50.3	66.3	67.7	53.1	56.4	53.9
Netherlands .....	56.0	—	—	—	90.9	58.4	59.8	—	59.5	93.3	57.5	49.3	42.7	46.1	61.1	55.6	58.6	58.7
<b>Total EUR 6</b>	<b>60.3</b>	<b>36.4</b>	<b>56.9</b>	<b>59.0</b>	<b>72.4</b>	<b>60.8</b>	<b>61.5</b>	<b>67.1</b>	<b>65.6</b>	<b>56.4</b>	<b>58.0</b>	<b>56.3</b>	<b>52.0</b>	<b>46.9</b>	<b>63.1</b>	<b>56.2</b>	<b>56.3</b>	<b>58.8</b>
United Kingdom .....	70.3	—	—	63.3	70.1	74.4	70.9	57.0	67.9	62.0	70.4	66.9	60.5	60.1	66.4	64.4	64.7	70.9
Denmark .....	—	—	—	62.3	55.0	—	58.2	53.4	—	—	60.6	—	—	56.8	—	58.7	81.6	63.9
Ireland .....	—	—	—	—	51.6	—	51.6	—	—	76.9	23.4	—	—	—	—	31.1	40.8	61.1
<b>Total EUR 9</b>	<b>61.5</b>	<b>36.4</b>	<b>56.9</b>	<b>60.7</b>	<b>71.5</b>	<b>62.4</b>	<b>62.8</b>	<b>65.8</b>	<b>65.8</b>	<b>56.3</b>	<b>59.5</b>	<b>58.1</b>	<b>53.1</b>	<b>48.5</b>	<b>63.6</b>	<b>57.5</b>	<b>57.6</b>	<b>60.6</b>
EUR 9 - P.M. 1975	64.9	59.2	62.8	66.7	74.3	64.7	66.2	62.9	55.4	63.7	60.8	55.3	49.9	62.9	53.1	57.6		
1976	66.6	56.1	63.1	68.0	76.6	66.4	67.8	63.8	67.9	60.8	62.2	62.6	59.6	52.2	64.5	60.6		

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The attached report has been prepared on the results of the 1978 survey of investments in the Community coal and steel industries. The survey, which is conducted annually, collects information on actual and forecast capital expenditure and production potential of coal and steel enterprises.

The introductory chapter summarizes the results of the survey and the conclusions on them.

Subsequent chapters of the report examine in detail the results of the survey for each producing sector, namely:

- the coalmining industry;
- coking and briquetting plants;
- iron ore mines;
- iron and steel industry.

The annex to the report contains a statement of the definitions under which the survey was carried out, together with tables giving a complete analysis of the results of the survey, including tables of capital expenditure and production potential by region and by category of plant for all sectors and categories of coal and steel products falling within the ECSC Treaty.