

EUROPEAN COAL AND STEEL COMMUNITY

COMMISSION

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

REPORT ON THE 1977 SURVEY

Position as at 1 January 1977

in the nine countries of the Community

AUGUST 1977

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EUROPEAN UNIT OF ACCOUNT

The unit of account used in this report is the European unit of account.¹

The average values of the European unit of account (EUA) used for conversion of figures for the years 1974 to 1977 are given in the table below. Figures for 1977 and after are converted at the value of the European unit of account in national currency as at 1 January 1977, also shown in the table below.

Country	Currency	1974	1975	1976	1977 and after
FR Germany.....	DM	3.08352	3.04939	2.81545	2.66938
Belgium/Luxembourg.....	FB/Flux	46.3994	45.5690	43.1654	40.6600
France	FF	5.73386	5.3923	5.34486	5.61696
Italy	Lit.	775.743	809.545	930.150	989.293
Netherlands.....	Fl.	3.20224	3.13490	2.95515	2.77855
United Kingdom	£	0.509803	0.560026	0.621578	0.662646
Denmark	DKr	7.25927	7.12266	6.76176	6.53960
Ireland.....	£Ir.	0.509803	0.560026	0.621578	0.662646

¹ 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 1977 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 annex to this report.

I — SUMMARY AND CONCLUSIONS

1. The sharp rise in investment activity which, following the oil crisis, became evident in coalmining in the Community from 1974 onwards continued in 1976. The 1975 figure of 564.2 million EUA increased by 40% to a level of 787.8 million EUA. Compared with 1974 investment at current prices has thus doubled. The marked increase in capital expenditure in 1976 in absolute terms compared with 1975 should not be allowed to obscure the fact that the growth rate has slackened. Although there were considerable increases at all main coalfields they were still below those of the previous year. 766.7 million EUA have been set aside in 1978 for projects in progress or decided projects. This amount is only slightly less than the actual amount invested in 1976.

If in 1977, as in 1976, all planned investment, which amounts to 859.0 million EUA—that is including planned but unapproved projects—is implemented, the investment could be above that of 1976 at current prices if not in real terms. The same could apply to investment in 1978. The investment boom which in the past three years has been quite marked should thus be followed by a stabilization of spending at a high level.

As in former years, extraction potential fell in 1976 against the previous year from 265.9 million tonnes to 260.6 million tonnes. Extraction potential based on projects approved or in progress could fall further by 1980 to 254.8 million tonnes (233.2 million tce). If all the projects which are still subject to final approval are carried out, extraction potential in 1980 which is estimated at 261.8 million tonnes (239.6 million tcs) could slightly exceed that of 1976. The extent to which all planned projects are implemented depends mainly on an assessment of sales trends (pig-iron production, new coal-fired power stations) and on questions of financing.

As regards the Community target for the long-term stabilization of production at a level of 250 million tce given in the 'Medium-term guidelines for coal 1975 to 1985', it would appear that the coal industry has taken appropriate measures. On the basis of this survey there are signs that, in the longer term, extraction potential will amount to approximately 240 million tce. The downward trend revealed by the annual surveys during recent years is not evident in this year's survey. This can be seen in the fact that capital expenditure in 1976 has for the first time approached the figure of EUA 500 million/year (at 1973 prices) which was quoted in the medium-term guidelines for coal as being necessary in the long-term, and also that planned investment for 1977 and 1978 could reach this level.

2. At 233.7 million EUA in 1976 investment at current prices for **coking plants** in the Community was approximately the same as in 1975 (233.2 million EUA). Investment was only maintained at the 1975 level in 1976 because of a marked increase at mine-owned and independent coking plants. More investment is planned for 1977 at all sectors of coking plants. Whether the total investment of 280.1 million EUA planned for 1977 will be implemented remains uncertain since there are as yet no signs of any substantial improvement in the situation of the coal industry and in particular of the steel industry, so that new projects could certainly be postponed.

While total production in 1976 compared with 1975 decreased by about 2 million tonnes to 74.4 million tonnes, coke production potential rose by 1.4 million tonnes to about 89.9 million tonnes. Whereas the last survey showed that between 1975 and 1979 production potential for coke might still increase as a result of projects in progress and decided, it is now clear that production potential between 1976 and 1980 will fall by 2 million to 87.9 million tonnes.

The extent to which production potential for coke in the Community will meet the needs of the steel industry depends mainly on developments in pig iron production. The coke stocks, which have increased considerably since 1974 (approximately 18 million tonnes at the end of 1976) in conjunction with the greater production capacity for coke in recent years, should provide an adequate cushion. In the long term, that is to say beyond 1980, the effects of shortages could be felt particularly if planned but still unapproved projects are delayed or cancelled and the rate of plant closure accelerates more rapidly than anticipated, as it has done in the past.

3. The extraction potential of **iron ore mines** in the Community is now expected to register a decline of more than 6 million tonnes, from 65.6 million tonnes to 59.4 million tonnes, between 1976 and 1980. Mines in eastern France are now facing increasingly severe competition from Swedish ores. Further closures are likely in addition to those given in the survey.

4. Despite growing financial problems **steel companies** in the Community invested 3 150 million EUA at current prices in 1976—about 23 EUA per tonne of steel produced compared with 3 330 million EUA in 1975.

While this level of investment is still large in view of the financing requirement it represents, recent rises in capital goods prices have reduced the effective purchasing power of funds for investment. Measured in terms of constant 1970 prices, investment declined from 2 100 million EUA in 1975 to 1 700 million EUA in 1976.

In 1977 investment is expected to decrease further to 2 700 million EUA in terms of current prices and to 1 440 million in terms of constant prices of 1970. This investment at constant prices of 1970 represents only 7 EUA per tonne of crude steel production potential compared with 14 EUA in 1973. The current emphasis of investment programmes on replacement or modernization of existing capacities partly explains why the rate of investment appears low compared to that of steel-producing countries such as Japan which have until recently been expanding capacity on a large scale. However, current levels of investment in the Community may be inadequate both to bring all existing capacities up to a competitive standard of efficiency and to raise the capacities of a number of plants which have not yet reached their optimal size.

Moreover in the absence of a major resurgence in steel prices and production, the large volume of interest and capital repayments associated with the borrowing incurred in the recent period cannot fail to limit the funds available for future investment, even for essential modernization projects.

Given the expected limits on funds available there is a need to improve the marginal efficiency of investment. This places a premium on a close coordination of investment programmes which has as its objective economies of scale both in terms of capital invested and of operating costs. In some instances companies who have chosen to replace an obsolete plant could alternatively have engaged in a project involving increased utilization of the technical capacity of an existing works. Equally as proved by a limited number of recent cases the combination of the work-load of two companies can justify the installation of large low-cost facilities which neither company could justify on its own work-load. Efforts might in the future have to be made to concentrate production of some products on works operating in the most competitive conditions while other works may have to close or undergo a major reconversion.

In some cases, increases in productivity will mean that employment levels will have to stabilize, or even decrease. The creation of new activities outside the ECSC steel sector could help to accelerate the process of rationalization by reabsorbing manpower. Without this rationalization, there is little prospect for any major improvement in the Community's overall competitiveness, even of its modern capacities.

Postponement of new projects, delays in commissioning, and accelerated closures, have reduced the previous estimates of crude steel production potential in 1980 from 220 million tonnes forecast in last year's survey to 214 million tonnes. Production potential in 1976 was 198 million tonnes, hence over the four-year period it will grow by an average 2% p.a.—reflecting some slowdown compared with the 2.7% average of increase of actual production between 1960 and 1976.

The estimates of expected capital expenditure and production potential given by the steel companies in the survey only partially reflect the plans for major restructuring in the traditional steelmaking regions which are currently being discussed at regional, national and Community level. The overall impression given by the replies to the survey is of a consolidation of existing capacities, combined with a hesitation by the companies, in view of uncertain demand forecasts, even to proceed with modernization investments. There appears to be a slight acceleration in some closures of obsolete steelworks, which had already been made known previously as well as a limited number of closures which had not yet been forecast in last year's survey. However a number of projects already in progress which have been delayed for financial reasons will eventually lead to increases in capacity which were originally forecast to occur during the period covered by the survey.

Despite the widespread emphasis of investment programmes in the industry on replacement and modernization, a decision to proceed with a major expansion scheme at a works based on flat products is taken into account in the survey. This considerable expansion of capacity will not be compensated by closures elsewhere. The resultant situation may lead, as often in the present crisis, to a sharing of orders between old and modern capacities and to further delays in the improvement of the overall competitiveness of the Community steel industry. Moreover, similar decisions to expand capacity may only prolong an overcapacity situation. A phasing of projects could result from a closer consultation between companies, governments and the Commission.

According to the new survey production potential for finished products—including coils-finished products—is expected to increase from 160.5 million tonnes in 1976 to 174.5 million tonnes in 1980—an

average annual increase of 2.1% p.a. Section and wire rod production potential, should increase by an average of 2.2% p.a. and flat products production potential by 2.1% p.a. As is the case for crude-steel production potential, delays in commissioning closures and the holding up of work on some projects have had the effect of reducing previous estimates of production potential.

II — THE COALMINING INDUSTRY

1. Capital expenditure

Total investments in 1976

The sharp rise in investment activity which, following the oil crisis, became evident in coalmining in the Community from 1974 onwards continued in 1976.

The 1975 figure of 564.2 million EUA increased by 40% to a level of 787.8 million EUA. Compared with 1974 investment at current prices has thus doubled (see Table 1). This reflects a 'new attitude' to coal, which has assumed a more important role in the energy policy of the Member States, and investment has been or is benefiting from State assistance with the approval of the Commission.

TABLE 1
Actual and estimated capital expenditure
in the coalmining industry 1974-1978

(million EUA)

	Actual expenditure			Estimated expenditure			
				1977		1978	
	1974	1975	1976	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	357.9	564.9	787.8	766.7	859.0	611.6	939.8
At constant prices of 1970	250.5	335.4	412.0	364.6 ¹	408.5 ¹	277.0 ¹	425.6 ¹

¹ For 1977 the assumed inflation rate is 10% and for 1978 5%.

The marked increase in capital expenditure in 1976 in absolute terms compared with 1975 should not be allowed to obscure the fact that the growth rate has slackened. Although there were considerable increases at all main coalfields they were still below those of the previous year. In a number of smaller coalfields such as south Belgium, Centre-Midi and Scotland, capital expenditure is below the level of the previous year. This decline in investment is particularly evident if price increases are taken into account.

Investment per tonne of coal produced

The considerable rise in investment over the past few years is of course also reflected in investment per tonne of coal produced.

Although the total amount in 1976 of 3.13 EUA/tonne was three times the 1973 figure (0.94 EUA/tonne), the total when adjusted to take price increases into account still does not come up to the level achieved during the fifties when market conditions for coal were good.

With the exception of southern Belgium the capital expenditure at current prices per tonne of coal produced has increased in all coalfields since 1973, but to very varying degrees. In the main coal-producing areas of the United Kingdom, Yorkshire and the Midlands, investment rose to above 4 EUA/tonne in 1976. In the Ruhr, in contrast, the largest coalfield in the Community, the level of investment increased to only just over 2 EUA/tonne in 1976, although in 1974 it had been more or less the same as in the United Kingdom, the result being that it is far below the Community average. The figures for the Belgian coalfields and those in the north of France/Pas-de-Calais and Centre-Midi were also below average, as were those in Scotland. On the other hand, capital expenditure was above average in the remaining German coalfields—in particular in Lower Saxony, Lorraine and in the remaining coalfields in the United Kingdom.

Capital expenditure in opencast mining was also higher, but in view of its particular production characteristics, opencast mining cannot be compared with collieries.

Comparison between actual and planned investment

Whereas in the past investment plans for the current year (projects in progress and decided) have as a rule not been fully implemented, the results for 1975 and now 1976 show that for the whole of the Community, spending was higher than envisaged at the beginning of the preceding year (1975: +10%, 1976: +15%). Broadly speaking, all capital expenditure planned for 1976 was carried out, including those which at the beginning of the year had still not been decided on.

This result, as in 1975, is attributable in particular to the fact that capital expenditure at current prices in the United Kingdom was approximately 21% in excess of estimates. In the Ruhr spending was also considerably higher (11%) than planned. An exception was Belgium, however, where only 60% of planned investment was implemented. Elsewhere investments were slightly higher or lower than anticipated.

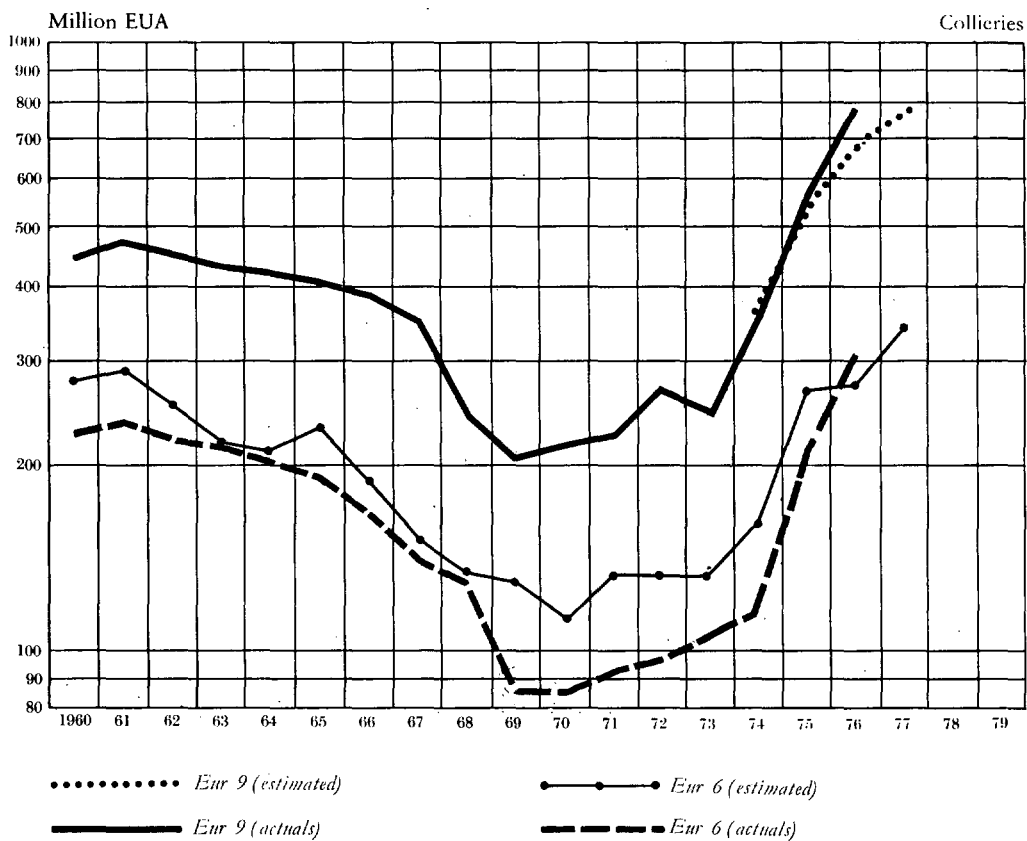
It should, however, be noted that to some extent this increased investment is still attributable to extremely high inflation, particularly in the United Kingdom.

Plans for 1977 and 1978

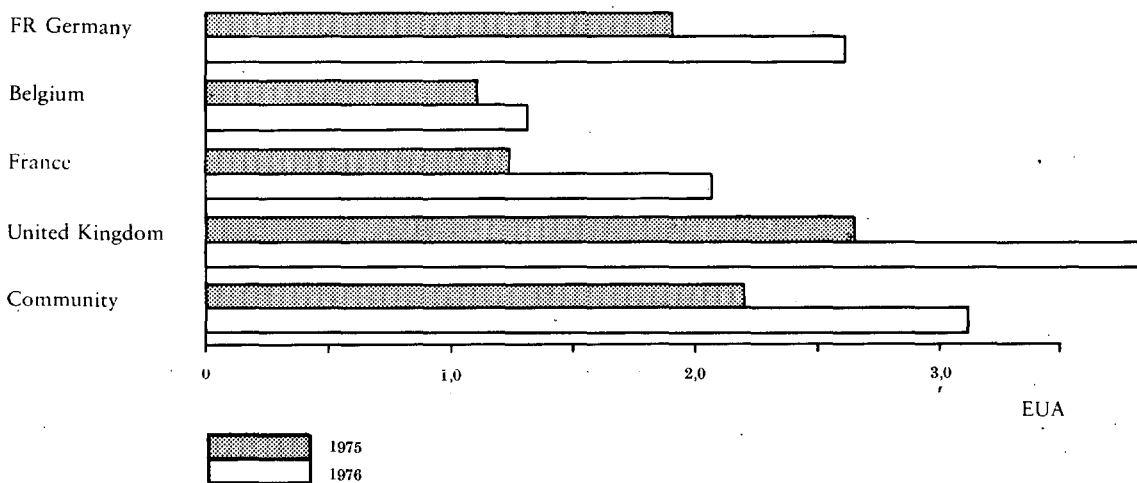
While the level of investment was substantially higher in 1976 than in 1975, the rate of increase slackened and the investment plans of the coalmining companies show that this tendency will continue.

FIGURE 1

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



Capital expenditure per tonne of coal produced in 1975 and 1976



Only 766.7 million EUA have been set aside in 1978 for projects in progress or decided. This amount is only slightly less than the actual amount invested in 1976 (see Table 1). In recent years, even before the oil crisis, the investment planned for the following year was always considerably above that of the preceding year. If in 1977, as in 1976, all planned investment, which amounts to 859.0 million EUA—that is including planned but unapproved projects—is implemented, the investment could at current prices be above that of 1976 even if probably not in real terms. The same could apply to investment in 1978. The investment boom which in the past three years has been quite marked should thus be followed by a stabilization of spending at a high level. Only in a few areas planned investment is for 1977 or 1978 higher than for the preceding year. This is particularly true in the Saar and Lorraine and for 1978 in the Ruhr and Yorkshire. In opencast mining the volume of investment planned for 1977 is also higher.

Breakdown of actual and forecast investment by type of installation

Although investment in underground machinery accounted for the major part of total investment in 1976 as in the past, the increase of only 9% on 1975 was very slight. On the other hand, the extremely high level of investment in shafts and underground workings, evident since 1974, will continue, this being the only instance with the inclusion of haulage and winding equipment where major increases in investment are planned for 1977. This applies in particular to the Member States of the original Community (see Table 2).

TABLE 2
Breakdown of actual and planned capital expenditure on coalmines
in Community by type of installation 1974-1978 ¹

(million EUA)

Type of installation	Actual expenditure			Estimated expenditure (on projects decided or in progress)		
	1974	1975	1976	1977	1978	
Shafts and underground	Eur 6	12.3	22.2	32.0	64.9	61.7
	Eur 9	29.0	87.5	133.6	171.4	157.6
Underground machinery	Eur 6	52.6	83.6	79.5	91.2	41.1
	Eur 9	147.9	223.2	243.8	219.4	177.5
Haulage and winding equipment	Eur 6	8.8	20.3	45.3	28.3	14.6
	Eur 9	12.9	37.3	69.0	48.1	38.2
Screening and washing	Eur 6	27.8	39.9	70.1	71.4	41.7
	Eur 9	36.3	103.4	166.0	145.2	82.9
Other surface installations	Eur 6	27.2	48.3	79.9	86.4	60.4
	Eur 9	123.5	99.3	159.0	163.4	155.0
Total	Eur 6	128.7	214.3	306.8	342.2	219.5
	Eur 9	349.6	550.7	771.4	747.5	611.2

¹ Not including opencast mining.

These facts demonstrate how the coal producers are trying to stabilize production in the long term by developing new reserves. The continued high rate of expansion of preparation plant shows the readiness of the companies to improve quality by rationalization and modernization.

2. Extraction and extraction potential

Extraction in 1976

In 1976 production in the European Community was approximately 4% down on 1975, from 255.9 million to 246.1 million tonnes (see Table 3).

Although consumption in 1976 was slightly higher than in 1975, high stocks and rising imports forced the coal producers in the Community to cut back production and this was achieved partly by short-time working. In addition, there were some closures of pits which could not be worked profitably.

With the exception of the Saar and the Belgian Campine coalfields, where there were slight increases in production, output was lower in all coalfields in the Community. There was, however, a considerable increase in production from 10.4 million tonnes to 11.7 million tonnes in opencast mining in the UK.

Estimated extraction potential between 1977 and 1980

As in the previous years extraction potential fell in 1976 from 265.9 million to 260.6 million tonnes. This development is only likely to continue, however, if there is no further investment other than that which is currently being carried out or has already been approved. In contrast to the data provided by the coal

TABLE 3
Movement of coal extraction potential

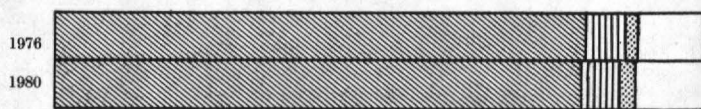
(in million tonnes)

	Extraction ¹		Extraction Potential					
			Actual		Estimated based on projects approved or in progress			
	1975	1976	1975	1976	1977	1978	1979	1980
Community tonnes	255.9	246.1	265.9	260.6	256.7	255.7	256.2	254.8
tce	236.0	225.2	245.3	238.5	234.9	234.0	234.5	233.2
					Estimates based on all planned projects			
tonnes					256.7	257.2	259.4	261.8
tce					234.9	235.4	237.4	239.6

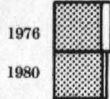
¹ Without small mines and 'licensed mines'.

FIGURE 2
Actual coal extraction potential in 1976
and forecast extraction potential for 1980

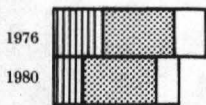
FR GERMANY



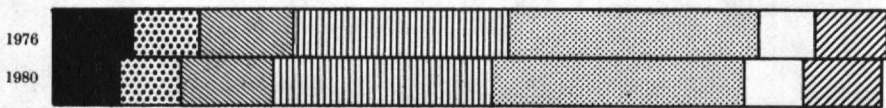
BELGIUM



FRANCE

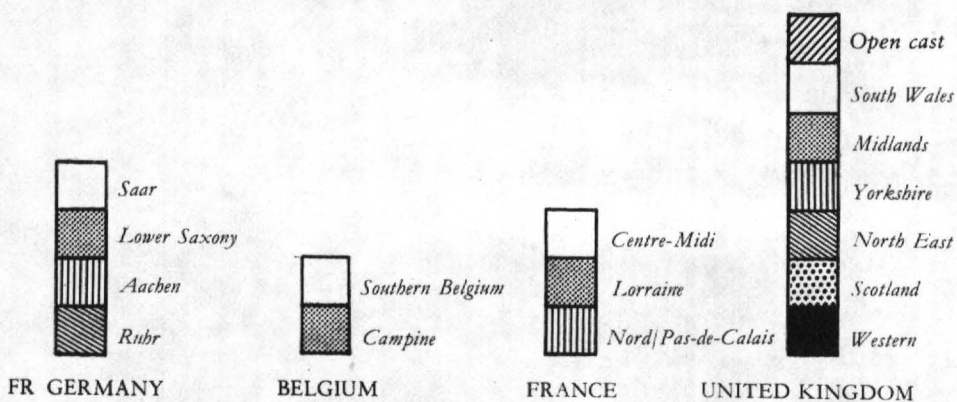


UNITED KINGDOM



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

Million tonnes of net output



producers for the preceding year, there are now signs that the rate of decline in extraction potential will become slower. While last year the anticipated reduction in extraction potential between 1975 and 1979 totalled approximately 9.9 million tonnes, it now totals only 5.8 million tonnes for the period 1976-1980.

If all the projects which are planned but which are still subject to final approval are carried out, extraction potential in 1980 which is estimated at 261.8 million tonnes (239.6 million tce) could slightly exceed that of 1976 (see Table 3). The extent to which all planned projects are implemented depends mainly on an assessment of sales trends (pig-iron production, new coal-fired power stations) and on questions of financing. Long-term energy forecasts leave no doubt that the European coal industry will make a major contribution to energy supplies. Nevertheless, should the current unfavourable situation persist, the decision-making process may not be pushed forward.

The relatively optimistic prospects reflected in the above figures are attributable to the fact that—in contrast to the last survey—extraction potential in most of the coalfields will be slightly higher or approximately the same in 1980 compared with 1976. On the basis only of projects in progress or decided there are plans to increase in the Saar, Lower Saxony, Yorkshire, the Midlands and South Wales and in opencast mining.

In the Ruhr, Aachen, Lorraine and the northern coalfields of the United Kingdom extraction potential will remain approximately constant. Elsewhere reductions in extraction potential will be felt more strongly than was presumed last year.

Viewed on a national basis, extraction potential in Germany in 1980 will be slightly higher than that of 1976 (40.3 million tonnes). In France there will be a reduction of 4.4 million tonnes due to the low productivity of the northern/Pas-de-Calais and Centre-Midi coalfields, and also in Belgium (—0.7 million tonnes) where almost all the pits in the southern coalfield are to be closed by 1980. In the United Kingdom extraction potential will fall slightly (— 1.0 million tonnes) as increases in the main coalmining areas of Yorkshire and the Midlands and in opencast mining will not be sufficient to offset the decline in production capacity in other coalfields. If all the planned projects are carried out in the United Kingdom, including those upon which decisions have not yet been taken, there would be an increase in production capacity in the period up to 1980 of about 5.4 million tonnes compared with 1976.

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* *

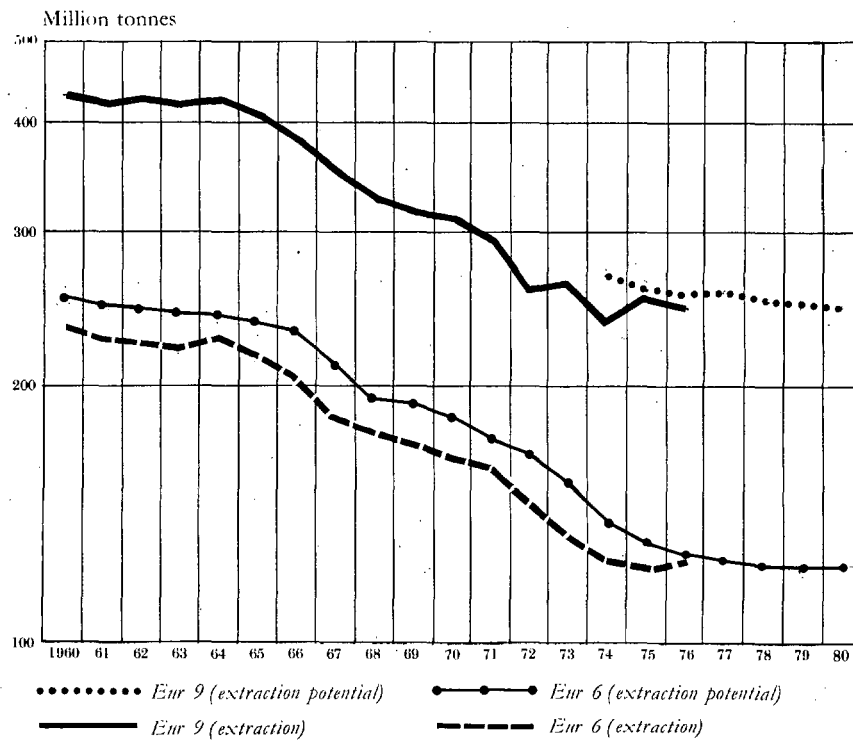
As regards the Community target for the long-term stabilization of production at a level of 250 million tce given in the 'Medium-term guidelines for coal 1975 to 1985',¹ it would appear that the coal industry has taken appropriate measures. Efforts in this area of investment, however, can only bring results in the long term. On the basis of this survey there are signs that in the longer term extraction potential will amount to approximately 240 million tce. The downward trend revealed by the annual surveys during recent years is not evident in this year's survey. This can be seen in the fact that 1976 capital expenditure has for the first time approached the figure of EUA 500 million/year (at 1973 prices) which was quoted in the Medium-term guidelines for coal as being necessary in the long term, and also that planned investment for 1977 and 1978 could reach this level.

In view of the coal reserves in the Community it would be possible to increase production to 250 million tce, but this would depend on the development of new production areas, which, considering the anticipated exhaustion of workable reserves at a number of collieries, would have to be on a sizeable scale.

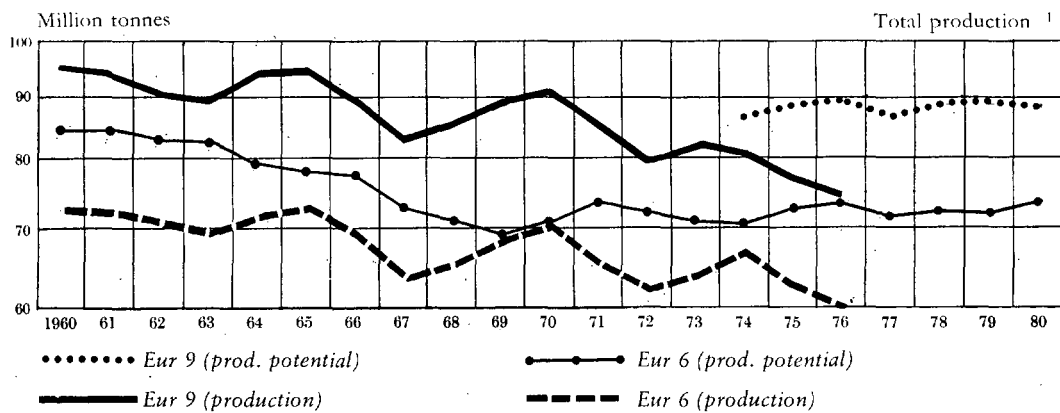
¹ Medium-term guidelines for coal 1975 to 1985, OJ C 22 of 30.1.1975.

Current new workings are by no means sufficient to permit this objective to be achieved, and the known large projects for implementation after 1980, such as Selby (approximately 10 million tonnes) in the United Kingdom and to the north of the Ewald-Fortsetzung colliery on the Ruhr may only contribute to a stabilization of current levels of production.

FIGURE 3
Extraction and extraction potential
Coalmining industry



Production and production potential of coking plants



¹ Mine-owned, steelworks-owned and independent coking plants.

III — COKING AND BRIQUETTING PLANTS

1. Coking plants

1.1. Capital expenditure

At 233.7 million EUA in 1976, investment at current prices for coking plants in the Community was approximately the same as in 1975 (233.2 million EUA). Only 77% of the investment forecast at the beginning of 1976 was actually carried out. This is due in particular to the fact that of the 112.1 million EUA destined for coking plants at steelworks in the North of England only 65.0 million EUA were invested as a result of a revision of plans.

Investment was only maintained at the 1975 level in 1976 because of a marked increase at mine-owned and independent coking plants (see Table 4). In this connection, there was heavier investment in replacement and new construction of batteries in the Ruhr, in Lorraine and in Italy.

Capital expenditure at current prices on steelworks coking plant was approximately 14% down on the 1975 figure after having more or less stagnated in 1975 compared with 1974.

TABLE 4

Breakdown of actual capital spending at mine-owned, independent and steelworks coking plants 1974-1978

(million EUA)

Sector	Actual expenditure			Estimated expenditure (cat. A + B)	
	1974	1975	1976	1977	1978
Mine-owned	35.5	43.1	63.5	81.4	59.0
Independent	4.4	5.9	11.6	12.1	3.5
Steelworks	183.3	184.2	158.6	186.6	158.7
Total	223.2	233.2	233.7	280.1	221.2

If allowance is made for price increases, two contrasting developments at coking plants are evident from 1974 onwards.

While investment at constant prices in mine-owned coking plant increased considerably over the last two years—as a result of the need to replace a larger proportion of obsolete plant—in the steelworks coking plant it fell, owing to the difficult financial situation in the industry. Nevertheless investment per tonne produced has in recent years been much higher for steelworks plants than for mine-owned plants.

More investment is planned for 1977 at all coking plants. In Lorraine, in particular, higher investment will result from ongoing replacement programmes at mine-owned coking plants. On the Ruhr and the Saar investments are also expected to be above the level of previous years. At steelworks coking plant much higher investment is planned not only for 1977 but also for 1978 in particular in Wales, where modernization and expansion projects are being carried out. As in recent years, the continuing high level of investment in the steel industry in the North of England will mean that approximately two-thirds of all investment in steelworks coking plants will continue to be accounted for by the United Kingdom.

Whether the total investment of 280.1 million EUA planned for 1977 will be implemented remains uncertain since there are as yet no signs of any substantial improvement in the situation of the coal industry and in particular of the steel industry, so that new projects could certainly be postponed.

If the percentage of planned investment actually implemented is no higher than it was in 1976, investment in 1977 could fall short of the 1976 level at current prices and in real terms.

1.2. Production potential

While total production in 1976 compared with 1975 decreased by about 2 million tonnes to 74.4 million tonnes, coke production potential rose by 1.4 million tonnes to about 89.9 million tonnes (see Table 5).

Despite the fact that production potential at independent coking plants declined by 0.5 million tons and at mine-owned plants there was virtually no change (+0.1 million tonnes), an increase in production potential was made possible by the expansion of capacities of steelworks coking plants in Italy (+0.6 million tonnes), Germany (+0.7 million tonnes) and in the United Kingdom (+0.8 million tonnes).

TABLE 5
Development of production potential of coking plant

(million tonnes)

Coking plant		Production			Production potential						
					Actual		Forecast				
		1960	1975	1976	1960	1975	1976	1977	1978	1979	1980
Mine-owned	Eur 6	50.2	32.5	29.6	54.4	34.5	34.6	33.2	33.1	33.1	34.2
	Eur 9	56.9	37.2	34.2	*	39.2	39.3	37.9	37.5	37.2	37.5
Independent	Eur 6	3.9	3.0	2.4	4.2	3.6	3.2	3.2	3.2	3.2	3.2
	Eur 9	6.0	3.8	3.1	*	4.5	4.0	3.7	3.7	3.7	3.7
Iron- and steelworks	Eur 6	19.8	27.1	28.0	22.2	34.5	35.3	35.3	35.9	35.5	35.4
	Eur 9	32.3	35.4	37.1	*	44.8	46.6	45.4	47.9	47.9	46.7
Total	Eur 6	73.9	62.6	60.0	80.8	72.6	73.3	71.7	72.2	71.8	72.8
	Eur 9	95.2	76.4	74.4	*	88.5	89.9	87.0	89.1	88.8	87.9

* Figures not available.

Whereas the last survey showed that between 1975 and 1979 production potential for coke might still increase as a result of projects in progress and decided, it is now clear that production potential between 1976 and 1980 will fall by 2 million to 87.9 million tonnes. This drop is mainly due to a revision of plans for expansion in the North of England so that the planned production potential of steelworks coking plant will more or less remain the same whereas the last survey showed an increase. It will thus not be possible to offset the reduction at mine-owned coking plants and independent coking plants planned between now and 1980.

If all planned investment projects, including those still subject to a final decision, were to be carried out, production potential at both steelworks coking plants and mine-owned coking plants could be increased in 1980 and beyond, provided that old plants are not closed down earlier than anticipated. There are plans, in particular in the United Kingdom, for the expansion of mine-owned coking plant, while in France and Belgium there is an emphasis on the expansion of steelworks coking plant.

Overall it is likely that the trend towards more intensive expansion of steelworks coking plants at the expense of mine-owned coking plants and independent coking plants will continue.

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The extent to which production potential for coke in the Community will meet the needs of the steel industry depends mainly on developments in pig-iron production. The coke stocks, which have increased considerably since 1974 (approx. 18 million tonnes at the end of 1976) in conjunction with the greater production capacity for coke in recent years, should provide an adequate cushion, particularly since the estimated pig-iron production for 1977 of about 98 million tonnes is still far below the level of 1974 (111.8 million tonnes). In the long term, that is to say beyond 1980, the effects of shortages could be felt particularly if planned but still unapproved projects are delayed or cancelled and the rate of plant closure accelerates more rapidly than anticipated, as it has done in the past.

2. Briquetting plants

Investment in **coal briquetting plants** amounted to 3.2 million EUA in 1976. Currently 0.8 million EUA are earmarked for 1977. This investment is intended only for replacement and some improvements to quality.

In view of the contracting demand from households, there will be production cutbacks and closures in the Nord/Pas-de-Calais, Aachen and Centre-Midi regions and in the United Kingdom, which will reduce capacity from 8.3 million tonnes in 1976 to 6.3 million tonnes in 1980.

In 1976 5.3 million EUA were invested in **lignite briquetting plants** and 7.5 million EUA are to be invested in 1977. In spite of higher investment compared with the coal briquetting plants a reduction in production potential is also expected from some 4.8 million tonnes in 1976 to 3.9 million tonnes in 1980.

IV — IRON-ORE MINES

Capital expenditure on iron-ore mines in the Community fell from 33.6 million EUA in 1975 to 31.1 million EUA in 1976. Expenditure per tonne of crude ore extracted in 1976 was 0.56 EUA as against 0.54 EUA in 1975.

In 1977 total expenditure is expected to decrease to 22.7 million EUA.

The Lorraine orefield continues to account for the bulk of total investment spending.

According to the survey this will not, however, prevent a considerable decrease in extraction potential in eastern France from 52.5 million tonnes in 1976 to 48.2 million tonnes in 1980. Faced with the continuing recession on the steel market, with the conversion of a number of steelworks from the LD-AC process to the LD process and the subsequent reduction in the offer prices of Swedish phosphoric ore, and finally with the depreciation in the value of the Swedish crown, it is even possible that further mine closures will be announced. An eventual stabilization of potential at the level of the ore requirements of the steel companies owning the mines may, however, be possible.

On other orefields a gradual decline on extraction potential is predicted over the period of the survey, except in the United Kingdom where the installation of additional extraction equipment at ore mine will lead to a small increase in extraction potential.

Total Community extraction potential should therefore decrease from 65.6 million tonnes in 1976 to 59.4 million tonnes in 1980.

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The extraction potential of iron-ore mines in the Community is now expected to register a decline of nearly 6 million tonnes between 1976 and 1980. Mines in eastern France are now facing increasingly severe competition from Swedish ores. Further closures are likely in addition to those given in the survey.

V — IRON AND STEEL INDUSTRY

1. Capital expenditure

1.1. Capital expenditure in 1976

Capital expenditure in the Community iron and steel industry in 1976 amounted to 3 154 million EUA at current prices compared with 3 332 million in 1975. This represents an investment of 23.5 EUA per tonne of steel produced compared with 26 EUA in 1975.

Only the United Kingdom, Germany and Luxembourg registered any overall increase in investment spending over 1975 levels: expenditure in the Netherlands declined by 40% and in France and Belgium by 20%. Integrated coastal works in the Community accounted for 33% of the total investment in the industry in 1976 compared with 35% in 1975 and 39% in 1974. 50% of total spending on LD steelworks and 42% of spending on iron-making was made at these works. As forecast in last year's survey steel companies in the United Kingdom accounted for 30% of total investment. Their spending in 1976 was 938 million EUA as against 845 million in 1975. German steel enterprises were the next largest investors—their capital expenditure amounted to 792 million EUA—25% of the Community total.

TABLE 6
Capital expenditure per tonne of crude steel produced 1970-1977

(EUA at constant prices of 1970)

	1970	1971	1972	1973	1974	1975	1976	1977 fore- cast
Community	15.4	21.5	21.4	16.9	13.5	16.3	12.7	10.7

At current prices the total capital expenditure in the Community of 3 154 million EUA in 1976 was nearly 5% lower than the forecast of 3 310 million made in the investment survey carried out a year ago. Owing to rises in capital goods prices and changes in the value of currencies in terms of units of account the

real volume of investment is estimated to have declined by about 17% between 1975 and 1976 from 2 054 million EUA to 1 706 million at constant prices of 1970. In terms of prices 1970 investment per tonne produced fell from 16.3 EUA to 12.7 EUA in 1976.

1.2. Capital expenditure forecast for 1977

Estimates by the companies indicate that at current prices total expenditure could fall from 3 154 million EUA in 1976 to 2 655 million EUA in 1977. Measured in terms of constant prices of 1970 and assuming that the companies' estimates contain no built-in allowances for inflation during future years, total investment in 1977 should fall from 1 706 million EUA in 1976 to 1 436 million EUA in 1977. Expenditure is expected to decrease in all countries except Luxembourg and Ireland.

This general reduction in expenditure reflects the lack of commitment to any major expansion programmes which, as the reports on previous surveys have emphasized, might have been started on in the wake of the exceptionally good trading conditions in 1974. More recently, due to the further deterioration of the companies' financial situation, a number of modernization programmes have also been postponed. The table below shows the value of total investment decisions notified to the Commission between 1969 and 1976 under the ECSC prior notification procedure. At least in the six countries of the Community in its original form, the value of investment decisions since the last boom year of 1974 were considerably below that in the two years 1969 and 1970 during which decisions were taken to build new, or expand existing, coastal steelworks.¹

TABLE 7
Value of total investment decisions notified to the Commission 1969-1977

(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.....	—	—	—	—	—	—	—	—	—
1 st quarter.....	44	—	76	45	—	—	165	57	222
2 nd quarter.....	89	8	15	71	113	—	296	1 422	1 718

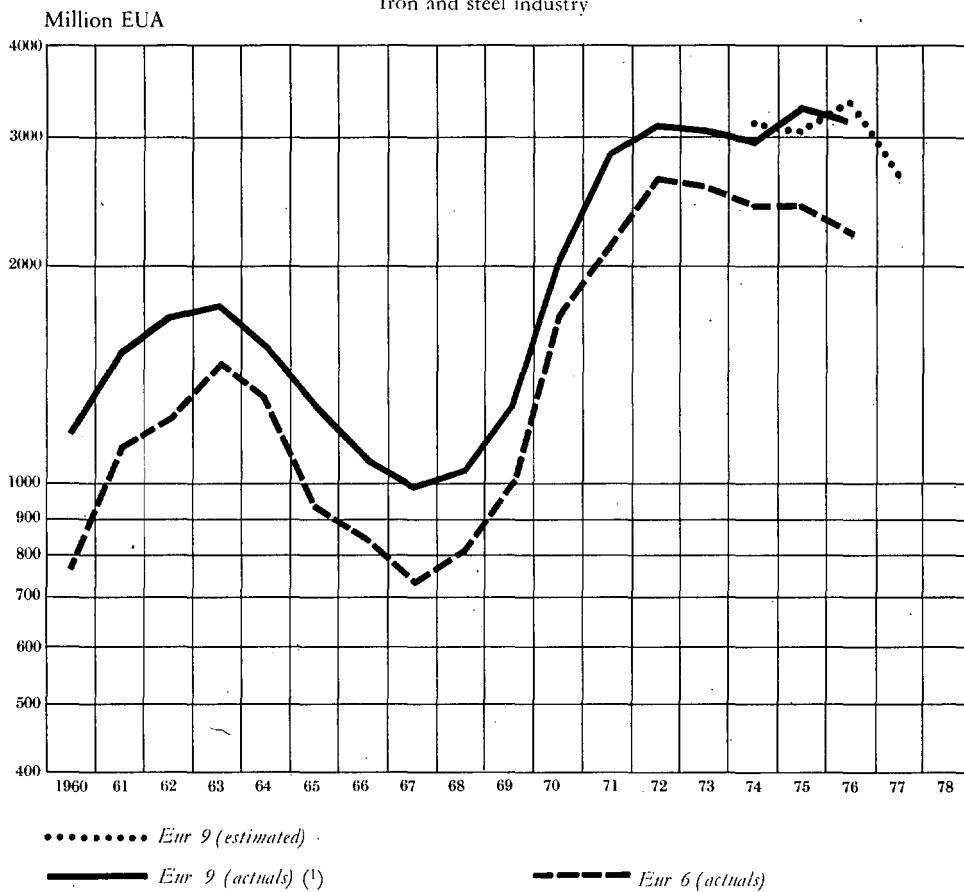
* Not available.

¹ For list of integrated coastal works, see footnote Table 12.

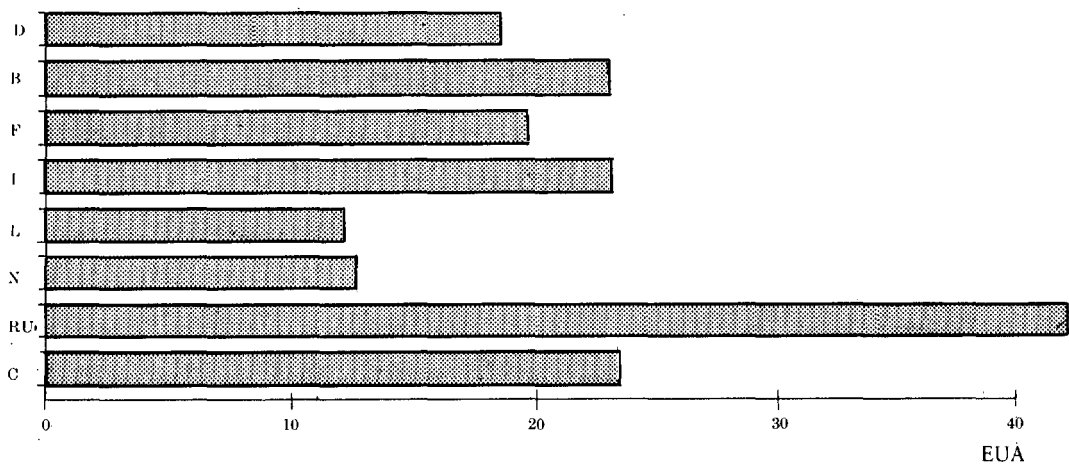
FIGURE 4

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

Iron and steel industry



Capital expenditure per ton of crude steel produced in 1976



(1) 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.

It is true that in the United Kingdom the British Steel Corporation has made a major effort to carry out some of the most important projects included in its original Ten Year Development Strategy.

Nevertheless with the exception of the expansion of tinplate and stainless steelmaking capacities, the emphasis of the unprecedented level of investment in the United Kingdom has been on replacing, modernizing and restructuring the large number of works which the Corporation had inherited from the private steel companies and at accelerating a process of renewal which had taken place in other countries over a much longer time period.

A newly-announced project of major importance in the United Kingdom is the scheme to increase the capacity of a works based on flat products. In the absence of compensating closures of obsolete plant elsewhere this project could lead to a considerable increase in production potential by the early 1980s.

In the private sector of the British steel industry several new mini-mills have recently being commissioned and a number of companies are also completing extensive modernization of their steelworks and rolling mills.

On the Continent many companies who had already postponed their plans for major capacity expansion are now confronted with the need to restructure their facilities.

The investments forecast by the companies in 1977 are however still aimed at maintaining their capacities at existing levels and include:

- (1) In eastern France, North Rhine/Westphalia and Luxembourg, the modernization and partial replacement of blast-furnace capacities.
- (2) In eastern France and the Saar, the replacement of open-hearth and conventional and OBM-converted Basic Bessemer steelworks by four oxygen blown steelworks.
- (3) In Luxembourg the replacement of obsolete Basic Bessemer capacities by extensions to oxygen blown steelworks.
- (4) In North Rhine/Westphalia, northern and central France, the replacement of obsolete open-hearth works by electric steelworks.
- (5) In northern and coastal Italy, North Rhine/Westphalia and northern France, modernization and/or improvements to casting facilities and rolling mills.

Finally in Ireland, reconstruction of an electric steelworks with continuous casting, and a light section mill to replace existing facilities.

Four projects for the construction of direct reduction plants which are announced in the survey should provide the Community additional experience of the technology of direct reduction. The first of the four plants to be commissioned will be at Hunterston in Scotland based on the Midrex process, the second will be at Jarrow in the north-east of England, the third is a pilot plant to be constructed at Piombino, Italy and the fourth, which has been considerably delayed, is also to be installed on the Italian coast. A further plant in northern Germany has now been decided on.

Judging by the returns to the survey, the restructuring of the steel industry in some traditional steel producing regions of the Community is only having a slow impact on the nature and level of investment. In Belgium, all investment projects which were not yet well advanced have been suspended until completion of a study of the restructuring possibilities. In France, some planned schemes have recently been approved; however, the future of some items of plant is still uncertain. Equally in the Saar, a decision in principle to rationalize pig-iron production has only recently been taken.

In these circumstances, and in view of the need to arrange extensive outside credit for the proposed schemes it seems improbable that the investment projects required by restructuring proposals could be started on before the end of 1977. In addition in some cases a substantial rationalization of facilities could be achieved without any significant investment. The level of total investment in 1977 could therefore be lower than the survey estimates of 2 655 million EUA at current prices or 1 436 million EUA at constant prices of 1970.

TABLE 8
Capital expenditure per tonne of crude-steel production potential 1973-1977

(EUA per tonne at constant prices of 1970)

	1973	1974	1975	1976	1977 forecast
Community	14.6	11.7	10.7	8.6	7.1

If investment in the Community industry remains at this level, it could prove to be insufficient to keep the performance of works in the Community abreast of those of its major competitors in Japan, the USA and in a number of developing countries. As Table 8 shows investment per tonne of crude steel production potential should decline between 1973 and 1977 from 14 to 7 EUA at constant prices of 1970. At the start of the period major investments were being made in expansion schemes which by the end of the period have reached the stage of commissioning. The emphasis of current investment on modernization and replacement explains at least partially why this investment per tonne has decreased. However, the total production potential in service has increased from 175 million tonnes in 1975 to 205 million tonnes in 1977, and within this total a considerable amount of capacity remains in need of extensive modernization. The forecast level of investment in 1977 may therefore be well below that required.

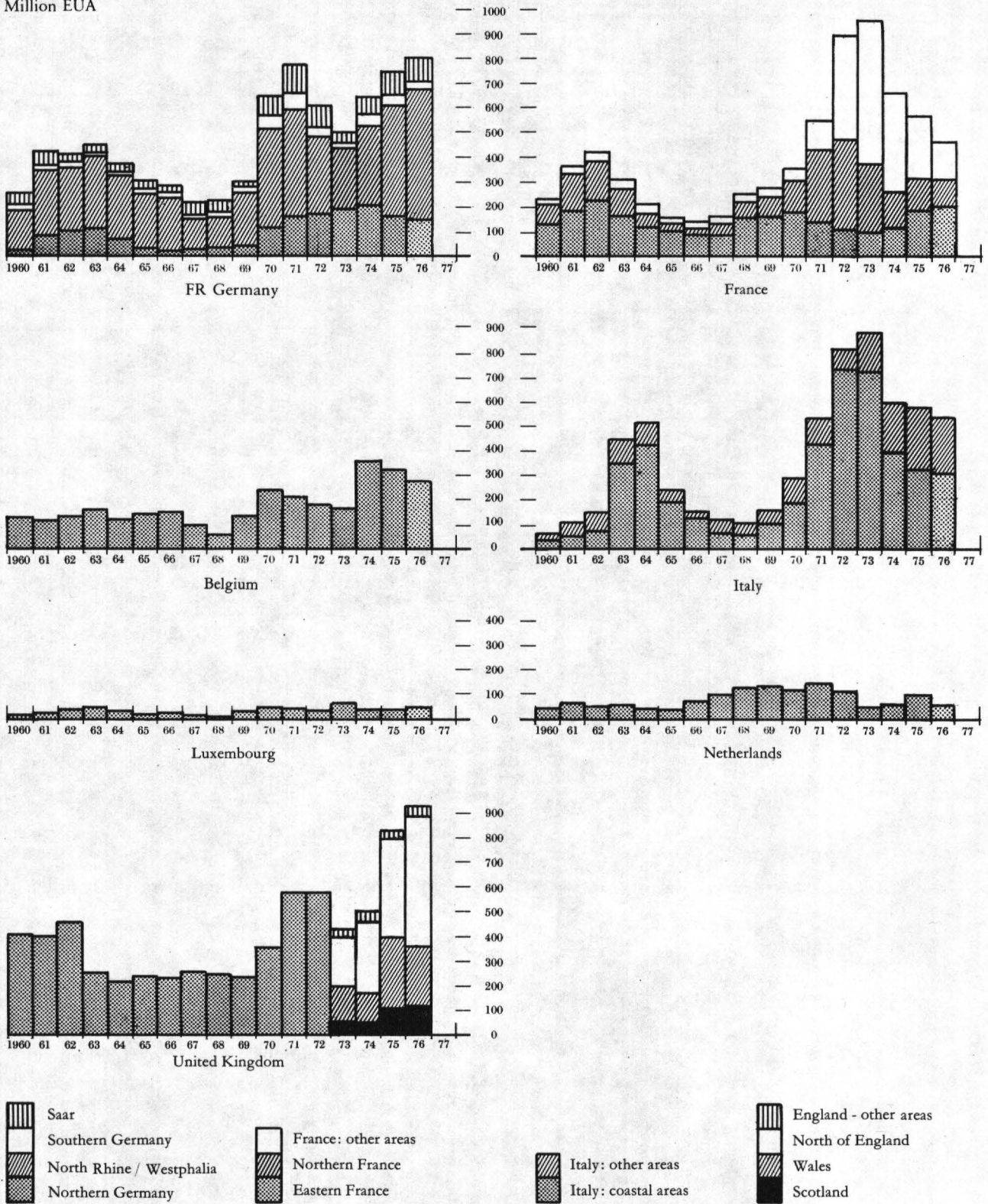
The fact that in present circumstances this low level of investment cannot be increased because of financial constraints places greater emphasis on improving the marginal efficiency of the capital invested.

Where appropriate to market and technical conditions a reduction in the number of sites in the Community on which steel products are produced could result in a more concentrated and efficient investment effort. Joint ventures rather than simple replacement or expansion at existing sites could also yield economies of scale both in terms of investment and operating costs. In this context, a number of modern works in the Community and particularly those based on flat products have not yet reached the productive capacity which is considered to be optimal. Most works with hot strip mills have for example a crude steel production potential of 3.5 million tonnes or less whereas their Japanese counterparts are mostly operating works with capacities of 6 million tonnes. A lack of coordination of the expansion of these works in the Community could aggravate the problem of overcapacity. Efforts might have to be concentrated on those works operating in the most competitive conditions while other works might have to be closed or undergo a major reconversion.

FIGURE 5

Capital expenditure in the iron and steel industry

Million EUA



2. Production and production potential

2.1. Rate of utilization of production potential in 1976

Apart from a shortlived upswing in demand in the early months of the year, the Community steel market in 1976 remained generally weak. Competition from third country producers also became fiercer in both domestic and export markets and Community producers lost ground. Imports increased from 7.9 million tonnes in 1975 to 12.8 million tonnes in 1976. They accounted for as much as 11% of total steel consumption compared with 7% in 1975. At the same time exports declined from 26.7 million tonnes in 1975 to 21.2 million tonnes in 1976. Production of crude steel within the Community during the year therefore reached a total of 134.1 million tonnes, only 7% higher than the 1975 level and still over 21 million tonnes below production in 1974.

TABLE 9
Rates of utilization of Community production potential for pig iron,
crude steel and finished products 1974-1976

	1974	1975	1976
Pig iron	87	65	66
Crude steel	87	66	68
Finished products	79	58	61

(%)

NB: Further details of rates of utilization are contained in Table 60 in the Annex to this report.

Rates of utilization of steelworks remained low; the slight overall increase in production levels was almost completely offset by further additions to capacity made during the year. Their average rate of utilization was 68% as against 66% in 1975 and 87% in 1974.

The rate of utilization of crude steel capacities was lowest in Luxembourg—55% and Denmark 59%—reflecting principally the specialization of production in those countries respectively in section products and heavy plate, those finished products for which demand, particularly on export markets, was most sluggish. In the United Kingdom, however, the average rate of utilization of crude steel capacities was as much as 76%—well above the 68% average for the Community as a whole. Market conditions being broadly comparable throughout the Community, this result is explained principally by an unprecedented increase during the year in stocks of semi-finished and finished products.

The varying rates of utilization recorded for steelworks based on different production processes were influenced by a number of factors:

- at 66% the rate of utilization of oxygen blown steelworks was depressed by the commissioning of 9.5 million tonnes of new plant during the course of the year;
- closure of over 3 million tonnes of capacity sustained the overall rate of utilization of open-hearth steelworks at a level of 68%—about the same level as in 1975;
- the high rate of utilization of electric steelworks of 77% reflects on the one hand the relatively more active demand for special—as opposed to ordinary steels—and on the other hand the cost advantage of using a process based on scrap which remained relatively cheap to other steelmaking raw materials.

In general the rate of utilization of individual steelmaking capacities seems to have been linked with the level of activity amongst the finished products mills which they supplied. Some works or groups of works based on more than one steelmaking process appear to have favoured operation of more modern LD and electric capacities rather than Basic Bessemer and open-hearth capacities.

However, in those cases where the relative costs of steelmaking processes might have influenced the allocation of orders between steelworks and could have led to plant closures, a number of companies were prevented from carrying out such a policy because of its possible adverse effects on employment.

In 1976 the average rate of utilization of finished products potential did increase slightly from 58% to 61% but it was still considerably below its 1974 level of 79%. Production potential for plate was—52%—very heavily underutilized. Cold rolling mill capacities on the other hand were utilized to 65% compared with 53% in 1975 and 76% in 1974.

2.2. Expected production potential 1976-80

Sinter, pellets and sponge iron

Four projects for direct reduction plants which have already been mentioned in discussion of the survey of capital expenditure should increase total Community production potential for sponge iron from its level of 0.7 million tonnes in 1976 to 2.4 million tonnes in 1980.

Production potential for sinter and pellets should increase over the same period from 171.3 million tonnes to 189.7 million tonnes. Most of the increase in sinter capacities is due to the commissioning of new facilities upstream from large blast-furnaces on the north-east coast of England and in Wales, Belgium and North Rhine/Westphalia.

Pig-iron and crude steel

Compared with last year's returns the survey shows that most steel companies in the Community have made very few changes to their estimates of pig-iron and crude-steel production potential for the four years ahead; the new estimates of production potential in 1980 of 151.6 million tonnes for pig iron and 214.0 million tonnes for crude steel represent a slight decrease over the estimates made in the last survey for 1979 of 151.6 and 215.8 million tonnes respectively.

This decrease appears to be due to the following factors:

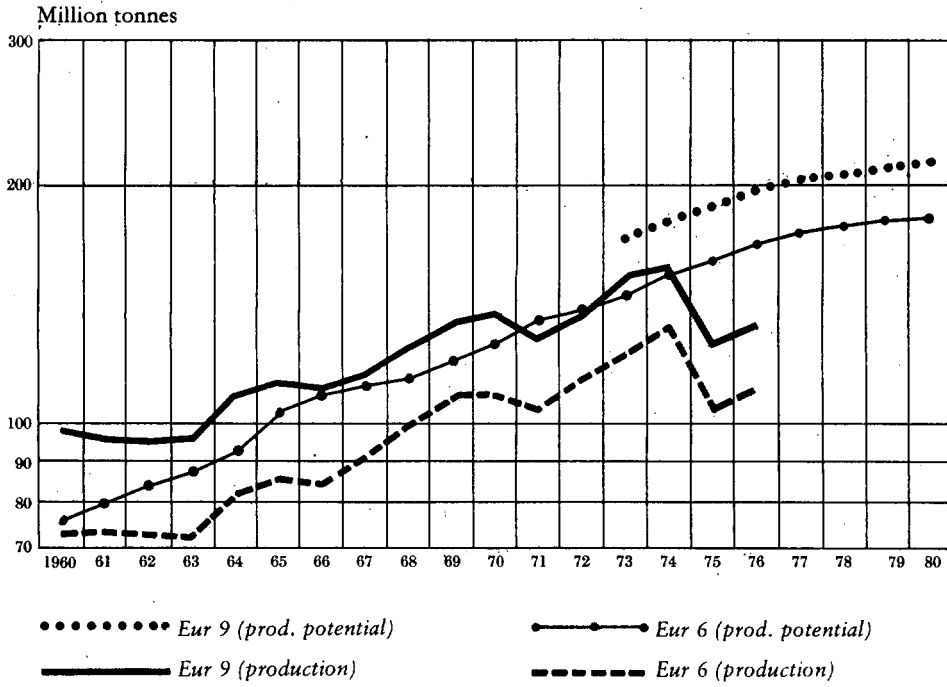
- (1) There were a few closures of steelworks in 1976, principally in Belgium and France, which were not forecast in the 1976 report; other closures took place earlier than expected.
- (2) Since the 1976 survey, only a limited number of new projects has been decided on, even projects aiming to modernize obsolete capacities. These projects would lead on completion to some net increase in production potential.
- (3) In Belgium, the temporary halt on new investment pending the completion of a plan for restructuring the industry has led to a decrease in the expected crude steel production potential in 1980 to 20.2 million tonnes compared with the 21.8 million tonnes forecast in last year's survey.
- (4) Because of financial constraints, a number of steel companies have had to delay completion of their investment projects. Increases in capacity which were originally planned for 1977 and 1978 are now scheduled for one or two years later.

These factors indicate, as the industry enters its third year of severe recession, that the previous estimate of a crude-steel production potential of 220.4 million tonnes in 1980 will not now be met. The revised estimates for 1980, given in the 1976 survey report, were based on the assumption that a certain number of

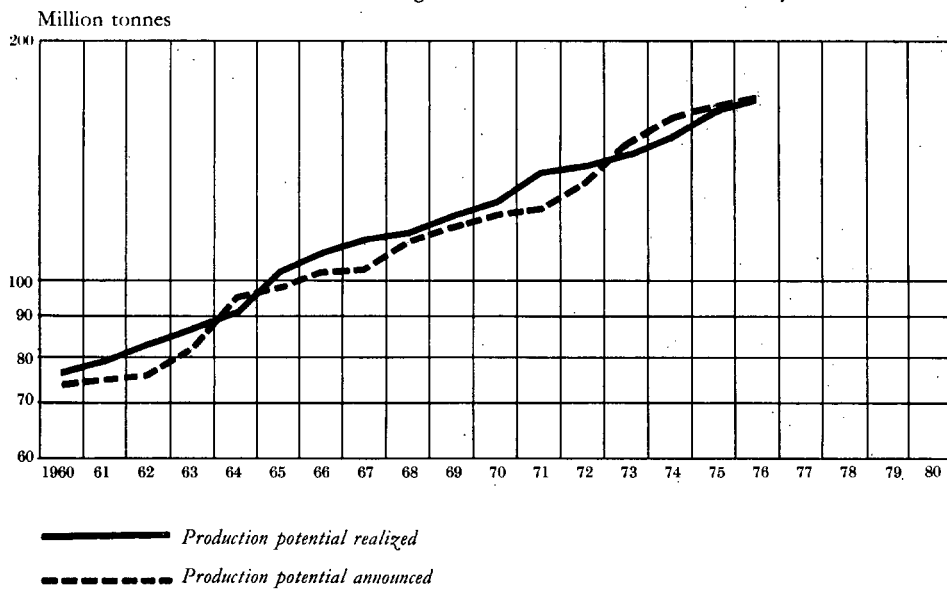
FIGURE 6

Actual production and production potential of the iron and steel industry

Crude steel



Community crude steel production potential announced and realized in the six original Member States of the Community



¹ i.e. production potential announced by the enterprises four years in advance

projects which are now still awaiting decisions would have been decided on during the course of 1976. Based on the new estimates for crude steel given in the current survey, Community production potential should increase from 197.7 million tonnes in 1976 to 214 million tonnes—giving an annual average increase in potential of 2%—the lowest rate of increase ever recorded in an ECSC Investment Survey. Between 1960 and 1976 the trend rate of increase of actual production was considerably higher—at 2.7% p.a. Nevertheless, despite this obvious deceleration in the development of capacities, there is no indication from the survey that radical solutions for restructuring, such as major closures, are now being contemplated.

Continuous casting

According to the new survey, the production potential of **continuous casting** plants in the Community should increase from 42.6 million tonnes in 1976 to 57.7 million tonnes in 1980. Theoretically it should be possible to cast 27% of maximum possible crude-steel production on a continuous basis compared with 22% in 1976. The commissioning of a number of new plants in North Rhine/Westphalia, coastal and inland Italy, the Saar, southern France and Denmark led to a remarkable increase in potential between 1975 and 1976 of over 9 million tonnes. The continuous casting installations which are expected to be commissioned during the period 1976-1980, include in order of the size of the capacity increases, plants in North Rhine/Westphalia, coastal and inland Italy, northern England, northern France, Wales and Scotland.

TABLE 10
Ratio of continuous casting production potential to crude-steel production potential
in 1976 and 1980

Country	1976	1980
FR Germany	29.2	32.7
Belgium	7.7	17.1
France	17.7	21.0
Italy	36.0	44.2
Luxembourg	—	—
Netherlands	—	—
United Kingdom	11.4	20.6
Denmark	53.5	53.5
Ireland	—	100.0
Community	21.6	27.0

The increasing proportion of steel which is being continuously cast has an important effect on steel capacity because the savings in yield—estimated at an average 17.5%—are effectively increasing the maximum possible production of steel in terms of semi-finished products. The expected amount of

continuous casting production potential in the Community in 1980 of 57.7 million tonnes should on the basis of 17.5% savings have an associated steel production potential equivalent to 67.8 million tonnes in terms of ingots. Steel production potential in terms of ingot equivalent will therefore be over 10 million tonnes higher in 1980 than the figure of 214 million tonnes indicated in the survey as the production potential for crude steel.

Crude steel by process

The new survey shows little change from last year in the expected shares of each steel process in total crude steel production potential over the next four years. In 1980 oxygen-blown processes should account for about 71% of total potential, electric steel 21%, open-hearth steel 6%, and Basic Bessemer 2%.

TABLE 11
Share of each steelmaking process in total crude-steel production potential
in 1973, 1976 and 1980

Crude steel	1973		1976		1980	
	m. tonnes	%	m. tonnes	%	m. tonnes	%
Basic Bessemer	14.9	8	7.3	4	3.4	2
Open-hearth	28.9	17	20.4	10	11.9	6
Electric	26.4	15	36.0	18	44.5	21
Oxygen-blown	104.3	60	134.0	68	154.1	71
<i>of which</i> : OBM converted from Basic Bessemer	(4.0)	(2)	(9.4)	(5)	(5.5)	(3)
Total crude steel	174.5	100	197.7	100	214.0	100

These proportions, which correspond closely to the estimate for 1979 given in the 1976 survey, nevertheless include the following differences. Due to a slight acceleration of closures, **Basic Bessemer** production potential should decline to 3.6 million tonnes in 1979 compared with the estimate of 4.1 million tonnes given in last year's survey. Plans also exist for the closure of a further 2.9 million tonnes of capacity, although no final decisions had been taken at 1 January 1977. Some decisions taken in the last few months could mean that by the early 1980s no conventionally blown Basic Bessemer converters will remain in service. As last year's report emphasized, however, the conversion of Basic Bessemer capacities to the OBM process may, for both economic and environmental reasons, only offer a temporary solution to the problem of modernization of the steelworks concerned. In the current survey, it is expected that there will still be 5.5 million tonnes of converted capacity in service in 1980. Decisions which have not yet been taken could reduce this figure somewhat further to 3.4 million tonnes by the early 1980s. A decisive improvement in the competitiveness of the companies operating such plants is still conditional upon restructuring measures which have not yet been decided on.

The production potential for **open-hearth steel** is expected to decline to about the same levels in 1979 and 1980 that were indicated in the 1976 survey—that is, 13 million tonnes and 12 million tonnes respectively. There have been delays in the commissioning of new oxygen-blown steelworks which will replace open-hearth steelworks in Scotland, Wales and coastal Italy. The associated closures have therefore been postponed. Between 1976 and 1979 there is therefore now likely to be about 1 million tonnes p.a. more open-hearth capacity in service than originally envisaged. The effect of these delays on the total for the Community considerably outweighs that of the acceleration of some closure plans in northern and eastern France, North Rhine/Westphalia and Ireland.

The new estimates of **electric steel** production potential are slightly higher for 1979 and 1980 than was forecast in last year's survey. Potential is now expected to increase from 36.0 million tonnes in 1976 to 44.5 million tonnes in 1980, an annual average increase of 5.4%. In general the increase continues to reflect the modernization and expansion of works based on section products.

New elements in this year's survey returns covering electric steelworks appear to be:

- a further increase in capacity in North Rhine/Westphalia and France due to extensions to capacity for special steels and replacement of open-hearth steelworks;
- a revision of the production potential of a new large steelworks in the private sector of the British industry in South Wales, which had been considerably underestimated by the company concerned in previous surveys;
- the installation of additional capacities at a works in northern England making high-grade carbon steels.

The expected development of **top-blown oxygen steel** production potential continues along the same lines as seen in previous surveys. The increase in potential expected between 1976 and 1980 which will raise production potential from 110.4 million tonnes to 120.2 million tonnes is mainly due to:

- extensions to iron and steelmaking capacity at the British Steel Corporation's five major steelmaking centres which are aimed to replace obsolete facilities elsewhere;
- projects designed to increase the utilization of the technical capacity of coastal steelworks in northern and southern Germany and North Rhine/Westphalia;
- extensions to two steelworks in Luxembourg, designed to replace Basic Bessemer capacities.

By 1980 there should be seven new **OBM and LWS** steelworks in service compared with four in 1976. The production potential of new OBM and LWS works should therefore increase from 2.4 million tonnes in 1976 to 11.5 million tonnes in 1980. A recent decision taken to build an OBM steelworks in eastern France should increase the total potential of new OBM steelworks to 13.3 million tonnes by 1980. The production potential of other OBM steelworks which have been converted from Basic Bessemer works should, as pointed out above, decline from 9.4 million tonnes in 1976 to 5.5 million tonnes in 1980.

The production potential of integrated coastal works

The table below shows the trend in the share of integrated coastal steelworks in the total of expected Community production potential for pig iron, crude steel, continuous casting and finished products. It shows that between 1973 and 1976 when a number of new coastal works were being commissioned there was a significant increase in the proportion accounted for by coastal works. Between 1976 and 1980,

however, the increase in the share is less marked: over the period the production potential of most of the works concerned will have reached a level which can only be increased by major investments in the plants concerned.

TABLE 12
Share of integrated coastal works¹ in total Community
production potential 1973-1980

(%)

	1973	1976	1980
Pig iron	30	38	41
Crude steel	24	29	32
Continuous casting	26	29	31
Coils	48	54	54

¹ Bremen, IJmuiden, Sidmar, Dunkirk, Mondeville, Fos, Cornigliano, Piombino, Bagnoli, Taranto, Port Talbot, Llanwern, Scunthorpe, Redcar, Teesside, Ravenscraig. 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.

The following table reemphasizes, using growth rates, how production potential at coastal works is expected to increase less rapidly, in relative and absolute terms, over the next four years than in the past. It is noticeable, however, that the growth of crude-steel production potential between 1976 and 1980 is still expected to be more rapid at integrated coastal works than at other works.

TABLE 13
Growth of crude-steel production potential at integrated coastal works
and at other works 1973-1980

(Annual average growth p.a.)

	1973-1976	1976-1980
Integrated coastal steelworks	10.9	2.5
Other steelworks	2.0	1.4
Total Community steelworks	4.1	2.1

Coils

Community production potential for coils is expected to increase from 63 million tonnes in 1976 to 69.8 million tonnes in 1980. During the period a new mill is being brought into service in southern Belgium.

Several schemes are in progress at Scottish and Welsh works aimed at improving plant upstream and downstream from hot wide strip mills. These schemes will result in the addition of nearly 2 million tonnes of potential during the period.

Finally a new hot wide strip mill is to go into service in a new works in the private sector of the British steel industry in South Wales.

Finished products

According to the survey Community production potential for finished products, including coils-finished products, should increase from 160.5 million tonnes in 1976 to 174.5 million tonnes in 1980.

This amounts to an average annual increase of 2.1% for the period 1976-1980 compared with those in previous surveys of 2.8% for the period 1975-1979 and 3.7% for the period 1974-1978.

The expected increase in heavy and light sections capacity in the Community between 1976 and 1980—at an average 1.6% p.a.—which will raise production potential from 51.6 to 55 million tonnes, is explained by the following developments:

- commissioning, at a later date than announced in previous surveys, of a new mill in coastal Italy;
- increases in the capacity of existing light section mills in northern England and in inland Italy;
- commissioning of new light section mills in inland Italy;
- increases in existing heavy section mill capacities in north-east England and North Rhine/Westphalia.

In all other regions there is a general stabilization of heavy and light section potential at its 1976 level. In Belgium and northern France there are also some slight decreases expected following closures to be carried out as part of a rationalization of sections production at a number of works.

Between 1976 and 1980 Community production potential for wire rod is expected to increase at an average 3.8% p.a. from 16.7 million tonnes in 1976 to 19.4 million tonnes, a figure which according to the 1976 survey would have already been reached in 1979. Work on the installation of a new mill in Belgium has been held up and the commissioning of new mills in northern England and Wales has been subject to delays. An increase of the previous forecast, however, is recorded for southern Germany and inland Italy.

There is scarcely any change forecast in the production potential for hot strip and strip for tubemaking—from just under 12 million tonnes in 1976 to just over 12 million tonnes in 1980; however production potential for plate should increase by an average 2.6% p.a. from 23.7 million tonnes in 1976 to 26.3 million tonnes in 1980. The estimates of production potential announced by the survey for the years between 1976 and 1980 show some decrease over the estimate of last year's survey. This is due to a new postponement of an expansion project in northern France and to a change due to market considerations in the mix of production potential for products made from coils at two works in Belgium.

The Community production potential for cold-rolled sheet is expected to increase by as little as an average 1.6% p.a. over the period of the new survey, rising from 41.3 million tonnes in 1976 to 44.0 million tonnes in 1980. Projects in progress in northern France, Wales, coastal and inland Italy should lead to modest increases in production potential in these regions.

2.3. Size of production units in the Community in 1980

The results of an analysis of the average production potential for the year 1980 are contained in the four tables below.

Some care needs to be taken in interpreting the results especially also in so far as the size of a works is not necessarily an indication of how modern it is. In addition works based on the production of special steels or rebars do not require or justify large-scale operations.

However the following figures, which give some idea of the expected average scale of a Community works, appear to be of interest for the development of an investment strategy for the Community:

- the 88 works reporting a production potential for pig iron have an average production per works of 1.7 million tonnes p.a.—equivalent to the output, based on rich ores, of one 8 metre blast-furnace;
- the average production potential of the 61 oxygen-blown steelworks in the Community is 2.5 million tonnes;
- the 375 works reporting a production potential for finished products have on average a production potential of 400 000 finished tonnes.

TABLE 14
Production potential of Community iron and steelworks in 1980
— Pig iron, crude steel and continuous casting

Product	Number of works reporting	Expected total production potential	Average production potential per works
		million tonnes	million tonnes
Pig iron	88	151.6	1.7 or 4,700 t/day
Basic Bessemer steel.....	4	3.4	0.9
Open-hearth steel	27	11.9	0.4
Electric steel	268	42.8 ¹	0.2
Oxygen-blown steels.....	61	154.0	2.5
Total crude steel	313²	212.3¹	0.7
Continuous casting.....	146	57.5	0.4

¹ Excluding independent steel foundries.

² NB: Some works have more than one steelworks using different production processes.

The sixteenth table giving results of the analysis shows the distribution of the crude steel production potential of the 26 works with hot wide strip mills. Only 5 of the 26 works are based on steelworks producing more than 5 million tonnes that is to say, near to or more than the 6 million tonnes considered by many experts to be the optimal size for a works based on flat products.

TABLE 15
 Expected production potential of Community iron and steelworks in 1980
 — Coils and finished products

Product	Number of works reporting	Expected total production potential	Average production potential per works for the product concerned
		million tonnes	million tonnes
Flat products:			
Coils	28	69.5	2.5
Hot strip and strip for tube	61	12.3	0.2
Plate \geq 3 mm	65	26.3	0.4
Cold rolled sheet	126	43.9	0.3

TABLE 16
 The size of steel works at works based on hot wide strip mills in 1980

(Number of works)

Total ¹	Less than 1 million tonnes	1-2 million tonnes	2-3 million tonnes	3-4 million tonnes	4-5 million tonnes	Over 5 million tonnes
26	3	4	4	7	3	5

¹ Excludes small mills with an annual production potential of less than 10 000 tonnes.

TABLE 17
 Expected production potential for plate \geq 3 mm from quarto mills in the Community in 1980

Total ¹ number of works	Less than 100 000 tonnes	100 001-200 000 tonnes	200 001-400 000 tonnes	400 001-1 000 000 tonnes	Over 1 000 000 tonnes
34	17	4	5	5	3

¹ Excludes 12 works with mills with an annual production potential of less than 10 000 tonnes.

Scope and definitions

Statistical tables

IMPORTANT NOTE:

Because of rounding, some columns of figures in the tables do not agree with the totals in the decimal place.

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SCOPE AND DEFINITIONS

I — Scope of survey

The survey is based on figures supplied by ECSC enterprises which in 1976 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 1977 (Category A);
- Projects approved but not yet in progress on 1 January 1977 (Category B);
- Other projects planned to be started between 1 January 1977 and 31 December 1980 (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 1976 of 1.1 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 1976.

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 machinery and equipment.

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 ¹
Iron and steel industry	81.8	83.9	85.3	87.4	91.8	100	108.0	112.1	117.1	142.7	162.2	184.9 ¹
Coal industry.....	82.6	85.0	85.7	87.8	92.0	100	108.6	114.7	121.4	142.9	168.2	191.2 ¹

¹ Estimated.

IV — Interpretation of capital expenditure figures for 1975 and 1976

It should be borne in mind that even at current prices the figures given in this report for capital expenditure in 1975 and 1976 may differ from those in the 1976 report. There are three main reasons for this:

- (i) first, for 1975, enterprises may revise their figures in the light of the completion of their final annual accounts;
- (ii) secondly, for 1976, actual spending by the enterprises may often depart from the expenditure estimates submitted at 1 January of that year;
- (iii) thirdly, again for 1976, 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:	Departments of Ardennes, Aube, Doubs, Haute-Marne, Marne, Meurthe-et-Moselle, Meuse, Vosges, Territoire de Belfort, Haute-Saône, Moselle, Bas-Rhin, Haut-Rhin;
Northern France:	Departments of Aisne, Nord, Oise, Pas-de-Calais, Seine, Région parisienne, Seine-et-Marne, Somme;
Northern England:	(steel-producing regions only): North, 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 region of North-Rhine/Westphalia.

HARD COAL COLLIERIES

Investments

TABLE 1
Capital expenditure by coalfields

million EUA

Coalfield	Actual expenditure			Estimated expenditure ³				
				on Jan. 1— 1977 for		on Jan. 1. 1976 for 1976 A+B	1977	
	1974	1975	1976	A+B	A+B+C		A+B	A+B+C
Ruhr ¹	89.7	126.4	173.1	149.9	179.3	182.0	135.9	244.2
Aachen ²	5.9	8.9	29.3	25.6	23.3	23.3	5.2	15.8
Lower Saxony	2.7	17.9	18.3	18.1	18.4	21.1	2.1	12.6
Saar	8.7	25.0	31.2	32.6	52.2	68.0	29.3	53.4
<i>FR of Germany</i>	107.0	178.2	251.9	226.2	273.2	294.4	172.5	326.0
Campine	3.5	6.9	8.4	14.8	15.9	15.9	—	16.6
Southern Belgium	1.2	1.5	1.0	0.9	0.6	0.6	0.2	0.2
<i>Belgium</i>	4.7	8.4	9.4	15.7	16.5	16.5	0.2	16.8
Nord/Pas-de-Calais	4.7	6.0	7.8	7.8	6.9	6.9	6.9	• 6.9
Lorraine	9.5	17.4	34.0	35.0	40.6	40.6	36.4	36.4
Centre-Midi	2.8	4.3	3.7	3.9	5.0	5.0	3.5	3.5
<i>France</i>	17.0	27.7	45.5	46.7	52.5	52.5	46.8	46.8
Total EUR 6	128.7	214.3	306.8	288.6	342.2	363.4	219.5	389.6
Scotland	14.0	17.6	17.3	15.3	14.3		14.3	
North East	30.3	34.7	53.5	45.9	38.3		24.8	
Yorkshire	56.4	96.5	154.4	119.9	156.5		185.1	
Midlands and Kent	73.2	116.7	145.7	115.7	118.8		104.4	
Western	27.7	36.9	49.4	40.0	36.7		32.3	
South Wales	19.3	34.0	44.3	42.9	40.7		30.8	
Opencast mining	8.3	13.5	16.4	19.1	19.2	21.7	0.4	14.5
<i>United Kingdom</i>	229.2	349.9	481.0	398.8	424.5	495.6	392.1	550.2
Total EUR 9	357.9	564.2	787.8	687.4	766.7	859.0	611.6	939.8

¹ Without the expenses of the Ruhr part of EBV.

² Includes the expenses of the Ruhr part of EBV.

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

HARD COAL

Investment

TABLE 2
Capital expenditure per tonne of coal produced 1973-1976

EUA tonne at current prices and current exchange rates

Regions	1973	1974	1975	1976
Ruhr	0.86	1.15	1.65	2.19
Aachen	1.17	1.02	1.56	5.14
Lower Saxony	2.04	1.42	9.94	9.15
Saar	0.70	0.98	2.84	3.35
<i>FR of Germany</i>	0.89	1.13	1.92	2.62
Campine	0.57	0.57	1.15	1.38
Southern	1.00	0.60	1.00	1.00
<i>Belgium</i>	0.69	0.58	1.12	1.32
<i>Netherlands</i>	0.14	—	—	—
Nord/Pas-de-Calais	0.66	0.52	0.78	1.07
Lorraine	0.92	1.04	1.74	3.40
Centre-Midi	0.23	0.58	0.91	0.80
<i>France</i>	0.68	0.74	1.24	2.08
<i>Italy</i>	—	—	—	—
Scotland	0.79	1.61	1.78	1.86
Northern	1.08	2.35	2.34	3.99
Yorkshire	1.10	2.01	2.95	4.98
Midlands and Kent	0.86	2.32	3.10	4.02
Western	2.08	2.54	3.00	4.26
South Wales	1.26	2.60	3.95	5.60
Opencast	0.32	0.90	1.30	1.40
<i>United Kingdom</i>	1.06	2.11	2.77	3.97
Community	0.94	1.52	2.26	3.20

HARD COAL

Extraction

TABLE 3

Extraction and extraction potential by coalfields

million tonnes t = t)

Actual extraction 1976	Coalfield	Extraction potential			Expected extraction potential			
		1974	1975	1976	1977	1978	1979	1980
79.0	Ruhr	87.3	85.7	81.7	80.0	79.6	80.4	81.1
5.7	Aachen	7.0	6.0	5.9	5.8	5.8	5.8	5.8
2.0	Lower Saxony	2.7	1.9	2.1	2.2	2.3	2.4	2.4
9.3	Saar	9.8	10.1	10.2	10.5	10.9	10.9	10.9
96.0	<i>FR of Germany</i>	106.8	103.7	99.9	98.5	98.6	99.5	100.2
6.1	Campine	9.1	8.0	7.2	7.3	7.3	7.3	7.4
1.0	Southern Belgium	2.7	1.7	1.4	1.2	0.6	0.6	0.5
7.1	<i>Belgium</i>	11.8	9.7	8.6	8.5	7.9	7.9	7.9
—	<i>Netherlands</i> (Limburg)	1.0	—	—	—	—	—	—
7.3	Nord/Pas-de-Calais	9.2	7.8	7.5	6.5	5.8	5.2	4.5
10.0	Lorraine	10.0	10.6	11.2	10.0	11.0	11.0	11.0
4.6	Centre-Midi	4.4	4.8	4.7	4.1	3.9	3.6	3.5
21.9	<i>France</i>	23.6	23.2	23.4	20.6	20.7	19.8	19.0
—	<i>Italy</i>	—	—	—	—	—	—	—
125.0	Total EUR 6	143.2	136.6	131.9	127.6	127.2	127.2	127.1
9.3	Scotland	*	10.2	10.3	9.9	9.8	9.8	9.4
13.4	Northern	*	15.0	14.3	14.0	13.9	13.9	13.9
31.0	Yorkshire	*	34.0	33.1	33.5	33.5	33.4	34.2
36.2	Midlands and Kent	*	37.7	38.4	38.3	38.7	39.1	38.9
11.6	Western	*	13.1	12.4	12.6	11.2	11.1	10.3
7.9	South Wales	*	8.8	8.5	8.8	9.0	9.1	9.2
11.7	Opencast	*	10.5	11.7	12.0	12.4	12.6	11.8
121.1	<i>United Kingdom</i>	130.0	129.3	128.7	129.1	128.5	129.0	127.7
246.1	Total EUR 9	273.2	265.9	260.6	256.7	255.7	256.2	254.8

* Figures not available.

TABLE 4
Capital expenditure by coalfields

STEELWORKS-OWNED,
MINE-OWNED
AND INDEPENDENT
COKING PLANTS

Investment
million EUA

Area	Actual expenditure			Estimated expenditure		
	1974	1975	1976	1976	on Jan. 1, 1976 for	
					1977	1978
Mine-owned coking plants						
Ruhr ¹	18.1	17.9	27.9	28.3	31.9	23.3
Aachen ²	6.6	6.9	4.0	4.2	2.0	0.8
Saar	2.7	1.8	3.4	3.8	7.3	3.3
<i>FR of Germany</i>	27.4	26.6	35.3	36.3	41.2	27.4
Nord/Pas-de-Calais	1.1	1.7	2.6	2.7	2.4	3.2
Lorraine	3.7	12.8	23.8	32.0	32.2	16.3
Centre-Midi	0.4	0.2	0.0	0.0	0.1	—
<i>France</i>	5.2	14.7	26.4	34.7	34.7	19.5
Total EUR 6	32.6	41.3	61.7	71.0	75.9	46.9
<i>United Kingdom</i>	2.9	1.8	1.8	4.1	5.5	12.1
Total EUR 9	35.5	43.1	63.5	75.1	81.4	59.0
Independent coking plants						
<i>Belgium and Netherlands</i>	0.9	1.3	1.5	2.2	0.3	—
<i>Italy</i>	1.3	4.6	10.1	15.6	11.8	3.5
Total EUR 6	2.2	5.9	11.6	17.8	12.1	3.5
<i>United Kingdom</i>	2.2	—	—	—	—	—
Total EUR 9	4.4	5.9	11.6	17.8	12.1	3.5
Steelworks-owned coking plants						
<i>FR of Germany</i>	16.1	6.2	2.2	5.3	6.0	6.6
<i>Belgium and Netherlands</i>	12.7	18.1	14.8	13.2	14.9	6.5
<i>France</i>	32.2	15.1	17.6	15.7	22.4	20.4
<i>Italy</i>	34.3	27.9	22.1	28.0	27.1	25.5
Total EUR 6	95.3	67.3	56.7	62.2	70.4	59.0
Scotland	3.1	0.0	4.8	7.1	7.2	4.9
Wales	8.9	11.0	31.4	29.5	68.7	82.4
Northern England	75.3	105.1	65.0	112.1	39.4	12.2
England - other areas	0.7	0.8	0.7	1.4	0.9	0.2
<i>United Kingdom</i>	88.0	116.9	101.9	150.1	116.2	99.7
Total EUR 9	183.3	184.2	158.6	212.3	186.6	158.7
Grand total EUR 6	130.1	114.5	130.0	151.0	158.4	109.4
Grand total EUR 9	223.2	233.2	233.7	305.2	280.1	221.2

1 Without the expenses of the Ruhr part of EBV.
2 Includes the expenses of the Ruhr part of EBV.

COKE

Production

TABLE 5

Production and production potential by regions

million tonnes

Actual production 1976	Region	Production potential			Expected production potential			
		1974	1975	1976	1977	1978	1979	1980
	Mine-owned coking plants							
20.5	Ruhr	24.1	24.1	23.6	22.3	22.3	22.3	23.5
2.0	Aachen	2.1	1.3	2.0	2.0	2.0	2.0	2.0
1.4	Saar	1.5	1.5	1.5	1.5	1.5	1.5	1.5
23.9	<i>FR of Germany</i>	27.7	26.9	27.1	25.8	25.8	25.8	27.0
3.3	Nord/Pas-de-Calais	4.8	4.8	4.8	4.3	4.3	4.3	4.3
2.0	Lorraine	2.4	2.3	2.3	2.6	2.5	2.5	2.5
0.4	Centre-Midi	0.6	0.5	0.5	0.5	0.5	0.5	0.5
5.7	<i>France</i>	7.8	7.6	7.6	7.4	7.3	7.3	7.3
29.6	Total EUR 6	35.5	34.5	34.6	33.2	33.1	33.1	34.2
4.6	<i>United Kingdom</i>	4.5	4.7	4.7	4.7	4.4	4.1	3.3
34.2	Total EUR 9	40.0	39.2	39.3	37.9	37.5	37.2	37.5
	Independent coking plants							
0.6	<i>Belgium and Netherlands</i> ..	1.0	1.0	0.6	0.6	0.6	0.6	0.6
1.8	<i>Italy</i>	2.5	2.6	2.6	2.6	2.6	2.6	2.6
2.4	Total EUR 6	3.5	3.6	3.2	3.2	3.2	3.2	3.2
0.7	<i>United Kingdom</i>	1.0	0.9	0.8	0.5	0.5	0.5	0.5
3.1	Total EUR 9	4.5	4.5	4.0	3.7	3.7	3.7	3.7
	Steelworks-owned coking plants							
8.1	<i>FR of Germany</i>	8.4	8.9	9.6	9.6	9.6	9.6	9.6
8.2	<i>Belgium and Netherlands</i> ..	10.2	10.3	10.2	10.3	10.6	10.3	10.2
5.5	<i>France</i>	5.9	6.9	6.7	6.4	6.7	6.6	6.6
6.2	<i>Italy</i>	6.9	8.4	9.0	9.0	9.0	9.0	9.0
28.0	Total EUR 6	31.4	34.5	35.5	35.3	35.9	35.5	35.4
1.0	Scotland	1.1	1.1	1.2	1.4	1.6	1.7	1.3
3.2	Wales	3.3	3.5	3.9	3.7	3.8	3.7	3.8
3.9	Northern England	4.9	4.7	5.1	4.0	5.7	6.1	5.4
0.9	England - other regions	1.1	1.0	0.9	0.9	0.9	0.9	0.8
9.1	<i>United Kingdom</i>	10.4	10.3	11.1	10.1	12.0	12.4	11.3
37.1	Total EUR 9	41.8	44.8	46.6	45.4	47.9	47.9	46.7
60.0	Grand total EUR 6	70.4	72.6	73.3	71.7	72.2	71.8	72.8
74.4	Grand total EUR 9	86.3	88.5	89.9	87.0	89.1	88.8	87.9

HARD COAL BRIQUETTES

Production

TABLE 6

Production and production potential by regions

million tonnes

Actual production 1976	Region	Production potential			Expected production potential			
		1974	1975	1976	1977	1978	1979	1980
0.6	Ruhr.....	1.0	0.8	0.8	0.8	0.8	0.8	0.8
0.6	Aachen.....	1.2	1.1	1.0	0.9	0.9	0.9	0.9
0.2	Lower Saxony.....	0.7	0.7	0.7	0.7	0.7	0.7	0.7
1.4	FR Germany.....	2.9	2.6	2.5	2.4	2.4	2.4	2.4
0.1	Belgium.....	0.8	0.6	0.3	0.3	0.3	0.3	0.2
1.6	Nord/Pas-de-Calais.....	2.7	2.7	2.7	2.0	1.7	1.7	1.7
0.5	Centre-Midi.....	0.8	0.8	0.8	0.8	0.8	0.8	0.3
0.5	Independent plants.....	0.8	0.8	0.8	0.8	0.8	0.8	0.8
2.6	France.....	4.3	4.3	4.3	3.6	3.3	3.3	2.8
4.1	Total EUR 6	8.0	7.5	7.1	6.3	6.0	6.0	5.4
1.2	United Kingdom.....	1.4	1.2	1.2	1.1	1.1	1.0	0.9
5.3	Total EUR 9	9.4	8.7	8.3	7.4	7.1	7.0	6.3

BROWN COAL BRIQUETTES

Production

TABLE 7

Production and production potential for BKB (brown coal briquettes)

million tonnes

Actual production 1976	Region	Production potential			Expected production potential			
		1974	1975	1976	1977	1978	1979	1980
4.4	Total EUR 6	6.2	5.8	4.8	4.3	4.2	4.1	3.9

TABLE 8
Capital expenditure by country

IRON ORE MINING

Investment

million EUA

Country	Actual expenditure			Estimated expenditure (projects in progress, and approved)		
				on Jan. 1, 1976 for 1976	on Jan. 1, 1977 for	
	1974	1975	1976	1977	1978	
FR of Germany.....	4.8	4.8	5.9	6.8	3.2	—
Belgium.....	0.0	0.0	—	—	—	—
France.....	20.7	26.8	23.4	24.1	16.8	13.0
Italy.....	0.0	0.2	0.3	0.1	0.4	0.2
Luxembourg.....	2.2	1.0	1.2	1.7	0.8	0.0
Total EUR 6	27.7	32.9	30.8	32.7	21.2	13.2
United Kingdom.....	0.5	0.7	0.3	0.5	1.5	90.9
Total EUR 9	28.2	33.6	31.1	33.2	22.7	14.1

IRON ORE MINING

Extraction

TABLE 9
Capital expenditure in the iron-ore industry 1974-1978

million EUA

Sectors	Actual expenditure			Estimated expenditure (cat. A + B)	
	1974	1975	1976	1977	1978
Extraction of ore.....	21.7	28.4	26.4	18.0	13.1
Mine-based preparations of ore.....	0.4	0.9	0.3	0.5	0.1
Miscellaneous surface.....	6.0	4.3	4.4	4.2	0.9
Total	28.2	33.6	31.1	22.7	14.1

IRON ORE MINING

Extraction

TABLE 10
Extraction and extraction potential by country

million tonnes

Country	Extraction		Extraction potential				
	1975	1976	1976	1977	1978	1979	1980
<i>FR of Germany</i>	4.3	3.0	3.5	3.4	2.0	2.2	2.2
<i>Belgium</i>	0.1	—	—	—	—	—	—
<i>France</i>	50.1	45.5	52.5	49.4	50.0	49.6	48.2
<i>Italy</i>	0.7	0.6	0.7	0.7	0.7	0.7	0.7
<i>Luxembourg</i>	2.3	2.1	2.9	1.9	1.9	1.9	1.7
Total EUR 6	57.5	51.3	59.6	55.4	54.6	54.4	52.8
<i>United Kingdom</i>	4.5	4.6	6.0	6.3	6.5	6.5	6.6
Total EUR 9	62.0	55.9	65.6	61.7	61.1	61.0	59.4

IRON AND STEEL INDUSTRY

Total Investment

TABLE 11
Capital expenditure by regions

million EUA

Region	Actual expenditure			Estimated expenditure (projects in progress, and approved)		
				on Jan. 1, 1976 for	on Jan. 1, 1977 for	
	1974	1975	1976	1976	1977	1978
Northern Germany	231.3	172.3	169.4	161.9	132.2	42.2
North Rhine/Westphalia	337.1	438.1	523.7	506.1	446.0	291.5
Southern Germany	34.1	38.8	22.2	19.4	24.4	9.4
Saar	57.2	92.0	76.3	75.8	60.9	79.6
<i>FR of Germany</i>	659.7	741.1	791.5	763.2	663.5	422.6
<i>Belgium</i>	375.7	349.1	279.5	281.2	138.7	63.7
Eastern France	112.5	192.3	205.0	172.4	165.2	137.9
Northern France	161.2	135.1	115.2	121.2	108.0	33.5
France - other areas	388.1	247.1	140.7	183.1	81.5	38.2
<i>France</i>	661.8	574.4	460.9	476.7	354.7	209.5
Italy - coastal areas	398.6	349.4	337.9	420.8	352.5	266.3
Italy - other areas	212.0	247.6	206.5	186.8	158.6	98.8
<i>Italy</i>	610.6	597.1	544.4	607.6	511.1	365.1
<i>Luxembourg</i>	49.0	50.7	56.6	69.5	124.3	69.0
<i>Netherlands</i>	68.0	111.2	67.0	75.1	51.0	28.2
Total EUR 6	2 424.8	2 423.6	2 199.8	2 273.3	1 843.1	1 158.2
Scotland	64.6	90.3	106.7	117.5	118.2	58.3
Wales	125.8	301.3	265.5	282.1	264.9	419.3
Northern England	292.3	409.8	522.1	594.6	384.7	214.8
England - other areas	41.7	43.1	43.9	31.1	26.1	8.2
<i>United Kingdom</i>	524.4	844.6	938.2	1 025.3	793.9	700.5
<i>Denmark</i>	40.3	48.1	15.6	11.0	8.4	—
<i>Ireland</i>	—	15.2	0.1	—	9.6	30.2
Total EUR 9	2 989.5	3 331.5	3 153.7	3 309.6	2 655.0	1 888.8
Total EUR 9 at constant 1970 prices	2 095.3	2 054.3	1 705.7	2 040.4	1 435.9	1 021.5

IRON AND STEEL INDUSTRY

Total investment

TABLE 12
Capital expenditure by type of installation

million EUA

Type of installation	Actual expenditure			Estimated expenditure (cat. A + B)	
	1974	1975	1976	1977	1978
Plant for production of:					
Pig iron	742.1	782.7	802.4	748.3	570.2
Steel	521.2	613.6	575.6	526.9	351.9
Rolled products	1 260.0	1 406.0	1 269.7	966.2	732.4
General services	466.3	529.3	506.1	413.6	234.3
Total	2 989.5	3 331.5	3 153.7	2 655.0	1 888.8
Total at constant 1970 prices	2 095.3	2 054.3	1 705.7	1 435.9	1 021.5

IRON AND STEEL INDUSTRY ESTIMATED / ACTUAL CAPITAL EXPENDITURE

Investment

TABLE 13
Capital expenditure in 1976 by stages in production

million EUA

Stage in production	Estimates (1)	Actual amounts spent (2)	Agreement with estimates % (3) = (2) : (1)
Pig iron	916.8	802.4	87.5
Crude steel	527.7	575.6	109.1
Rolling mills	1 284.6	1 269.7	98.8
General services	580.3	506.1	87.2
Total iron and steel industry	3 309.6	3 153.7	95.3

IRON AND STEEL INDUSTRY ESTIMATED / ACTUAL CAPITAL EXPENDITURE

Investment

TABLE 14
Expected capital expenditure in 1976 by countries

Region	Estimated national currency ¹	Achieved national currency ²	Rate of achievement % at current prices (3) = (2) : (1)
	<i>DM (millions)</i>	<i>DM (millions)</i>	
Northern Germany	494.4	476.9	96.5
North Rhine/Westphalia	1 546.0	1 474.4	95.4
Southern Germany	59.3	62.3	105.1
Saar	231.6	215.0	92.8
<i>FR Germany - Total</i>	2 331.4	2 228.6	95.6
	<i>FB (millions)</i>	<i>FB (millions)</i>	
<i>Belgium</i>	2 955.2	2 063.6	69.8
	<i>FF (millions)</i>	<i>FF (millions)</i>	
Eastern France	899.0	1 095.6	121.9
Northern France	632.9	615.6	97.3
France - other regions	955.6	752.1	78.7
<i>France - Total</i>	2 487.6	2 463.3	99.0
	<i>Lit. (milliards)</i>	<i>Lit. (milliards)</i>	
Italy - coastal regions	335.6	314.3	93.6
Italy - other regions	148.9	192.1	129.0
<i>Italy - Total</i>	484.5	506.4	104.5
	<i>Flux (millions)</i>	<i>Flux (millions)</i>	
<i>Luxembourg</i>	3 200.8	2 440.8	76.3
	<i>Fl. (million)</i>	<i>Fl. (million)</i>	
<i>Netherlands</i>	235.3	197.9	84.1
	<i>£ (millions)</i>	<i>£ (millions)</i>	
<i>United Kingdom</i>	590.5	583.1	98.7
	<i>DKr (millions)</i>	<i>DKr (millions)</i>	
<i>Denmark</i>	79.2	105.3	132.9
	<i>£ (millions)</i>	<i>£ (millions)</i>	
<i>Ireland</i>	—	0.1	—
Community	<i>millions EUA</i> 3 309.6	<i>millions EUA</i> 3 153.7	95.3

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

TABLE 15

Total investment

Capital expenditure by type of installations

million EUA

Sectors	Actual expenditure			Estimated expenditure (cat. A + B)	
	1974	1975	1976	1977	1978
Steelworks coking plants	223.2	184.2	158.6	186.6	158.7
Burden preparation and direct reduction	219.9	214.1	224.0	192.6	184.4
Blast-furnace	299.0	384.4	419.7	369.1	227.1
Total	742.1	782.7	802.4	748.3	570.2

BLAST FURNACES

Investment

TABLE 16
Capital expenditure by regions

million EUA

Region	Actual expenditure			Estimated expenditure (projects in progress, and approved)		
				on Jan. 1, 1976 for	on Jan. 1, 1977 for	
	1974	1975	1976	1976	1977	1978
Northern Germany	9.3	9.8	37.1	35.5	41.5	8.6
North Rhine/Westphalia	53.4	85.4	115.6	115.3	90.8	31.2
Southern Germany	2.1	0.3	2.0	1.8	0.5	0.5
Saar	20.5	6.9	10.7	10.8	4.7	5.6
<i>FR of Germany</i>	85.3	102.4	165.5	163.4	137.5	45.8
<i>Belgium</i>	40.0	35.4	17.3	13.2	13.4	3.9
Eastern France	29.9	59.9	53.9	46.7	28.5	18.2
Northern France	10.1	3.5	5.1	4.9	6.2	—
France - other areas	38.4	17.5	11.0	6.3	0.3	0.1
<i>France</i>	78.4	80.9	69.9	57.9	35.0	18.3
Italy - coastal areas	50.6	50.0	83.5	95.0	60.7	31.6
Italy - other areas	1.5	1.3	0.7	0.3	0.5	0.2
<i>Italy</i>	52.1	51.3	84.2	95.3	61.2	31.8
<i>Luxembourg</i>	1.3	5.3	2.2	4.4	47.0	56.0
<i>Netherlands</i>	5.3	12.1	6.8	9.2	6.1	3.5
Total EUR 6	262.4	287.5	345.9	343.4	300.1	159.2
Scotland	4.3	2.6	9.6	4.4	12.3	11.0
Wales	17.1	22.5	32.6	51.8	17.8	35.5
Northern England	9.2	69.7	28.8	61.2	37.6	19.8
England - other areas	6.0	2.1	2.9	3.6	1.3	1.5
<i>United Kingdom</i>	36.6	97.0	73.8	121.0	69.0	67.8
<i>Denmark</i>	—	—	—	—	—	—
<i>Ireland</i>	—	—	—	—	—	—
Total EUR 9	299.0	384.4	419.7	464.4	369.1	227.1

**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, 1976 for	on Jan. 1, 1977 for	
	1974	1975	1976	1976	1977	1978
Northern Germany	35.3	15.8	44.9	45.3	57.9	11.9
North Rhine/Westphalia	82.7	99.8	126.9	135.0	125.0	86.0
Southern Germany	2.4	1.1	2.7	2.3	0.5	0.5
Saar	21.6	8.5	11.0	11.4	4.8	6.1
<i>FR of Germany</i>	142.0	125.1	185.5	194.0	188.2	104.5
<i>Belgium</i>	82.7	90.8	65.8	75.5	39.9	11.2
Eastern France	34.7	82.0	89.7	72.7	54.7	40.2
Northern France	17.6	7.9	9.7	8.7	7.7	0.1
France - other areas	96.4	41.7	23.4	24.3	6.4	5.4
<i>France</i>	148.7	131.6	122.8	105.7	68.8	45.7
Italy - coastal areas	118.8	97.6	110.8	151.2	106.1	69.4
Italy - other areas	1.5	1.3	6.1	0.3	0.5	0.2
<i>Italy</i>	120.3	98.9	116.9	151.5	106.6	69.6
<i>Luxembourg</i>	9.8	7.6	3.9	8.1	49.2	57.2
<i>Netherlands</i>	9.1	23.3	18.9	19.6	12.4	6.9
Total EUR 6	512.6	477.2	513.7	554.4	465.1	295.0
Scotland	11.9	41.4	67.6	33.8	71.2	23.9
Wales	56.2	62.6	92.6	113.3	105.7	137.8
Northern England	154.1	198.2	123.3	208.3	101.0	111.7
England - other areas	7.3	3.2	5.3	7.0	5.3	1.8
<i>United Kingdom</i>	229.5	305.4	288.7	362.4	283.2	275.2
<i>Denmark</i>	—	—	—	—	—	—
<i>Ireland</i>	—	—	—	—	—	—
Total EUR 9	742.1	782.7	802.4	916.8	748.3	570.2

STEELWORKS

Investment

TABLE 18

Capital expenditure according to production process

million EUA

Process	Actual expenditure			Estimated expenditure (cat. A + B)	
	1974	1975	1976	1977	1978
Basic Bessemer	3.5	1.3	0.2	0.0	0.0
OBM, LWS and similar	39.6	49.8	81.3	100.1	97.9
Open-hearth	7.4	14.6	40.6	26.2	16.0
Electric furnace.....	241.3	296.0	216.5	194.8	69.8
LD, Kaldo, etc.....	229.4	251.9	237.2	205.8	168.2
Total	521.2	613.6	575.6	526.9	351.9

OPEN HEARTH STEELWORKS

Investment

TABLE 19
Capital expenditure by regions

million EUA

Region	Actual expenditure			Estimated expenditure (projects in progress, and approved)		
				on Jan. 1, 1976 for	on Jan. 1, 1977 for	
	1974	1975	1976	1976	1977	1978
Northern Germany	0.6	1.7	1.4	1.6	0.8	0.2
North Rhine/Westphalia	3.5	6.8	35.8	22.9	19.8	10.7
Southern Germany	0.2	0.4	0.2	0.1	0.0	—
Saar	0.0	0.0	0.0	0.0	0.0	—
<i>FR of Germany</i>	4.3	9.0	37.4	24.6	20.6	10.9
<i>Belgium</i>	0.1	—	—	—	—	—
Eastern France	0.4	0.7	1.2	0.2	—	—
Northern France	0.2	0.3	0.2	0.5	0.8	—
France - other areas	0.7	1.0	—	0.1	—	—
<i>France</i>	1.3	2.1	1.4	0.8	0.8	—
Italy - coastal areas	—	0.2	0.3	—	0.1	—
Italy - other areas	0.9	2.4	0.6	0.4	0.3	0.2
<i>Italy</i>	0.9	2.6	0.9	0.4	0.4	0.2
<i>Luxembourg</i>	—	—	—	—	—	—
<i>Netherlands</i>	—	—	—	—	—	—
Total EUR 6	6.6	13.6	39.7	25.8	21.7	11.1
Scotland	0.1	0.1	—	0.0	—	—
Wales	0.7	0.7	0.6	0.3	—	—
Northern England	—	0.1	—	—	0.0	—
England - other areas	0.0	0.1	0.1	0.8	4.4	4.9
<i>United Kingdom</i>	0.8	1.0	0.7	1.1	4.4	4.9
<i>Denmark</i>	—	0.0	0.1	—	—	—
<i>Ireland</i>	—	—	—	—	—	—
Total EUR 9	7.4	14.6	40.6	26.9	26.2	16.0

ELECTRIC FURNACE STEELWORKS
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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, 1976 for	on Jan. 1, 1977 for	
	1974	1975	1976	1976	1977	1978
Northern Germany	27.8	13.5	7.7	7.3	4.3	1.3
North Rhine/Westphalia	3.7	11.1	18.4	14.0	28.7	12.1
Southern Germany	4.5	9.2	2.8	2.4	4.9	1.7
Saar	—	0.8	5.2	4.3	1.2	0.4
<i>FR of Germany</i>	35.9	34.6	34.0	28.0	39.0	15.4
<i>Belgium</i>	5.1	7.8	14.6	11.3	12.9	1.8
Eastern France	3.8	4.2	3.3	3.6	1.8	1.1
Northern France	8.9	11.7	6.4	3.5	12.2	3.3
France - other areas	29.7	20.3	11.1	17.4	13.9	6.1
<i>France</i>	42.5	36.2	20.7	24.5	27.8	10.5
Italy - coastal areas	9.3	8.7	24.6	15.9	12.5	8.8
Italy - other areas	73.1	94.4	62.0	50.8	45.8	19.1
<i>Italy</i>	82.5	103.2	86.6	66.7	58.3	27.9
<i>Luxembourg</i>	—	—	0.0	0.0	0.1	0.0
<i>Netherlands</i>	—	1.8	—	—	0.0	—
Total EUR 6	166.0	183.5	155.8	130.5	138.0	55.7
Scotland	15.3	5.3	1.6	2.3	1.2	—
Wales	1.6	27.5	19.7	36.1	23.1	9.5
Northern England	21.4	25.6	32.3	34.7	26.6	1.0
England - other areas	13.3	10.5	2.1	4.3	3.4	0.6
<i>United Kingdom</i>	51.6	68.9	55.8	77.4	54.3	11.1
<i>Denmark</i>	23.7	28.8	4.8	4.7	1.5	—
<i>Ireland</i>	—	14.8	0.1	—	1.0	3.0
Total EUR 9	241.3	296.0	216.5	212.6	194.8	69.8

TABLE 21
Capital expenditure by regions

**LD, KALDO AND
OTHER STEELWORKS**

Investment

million EUA

Region	Actual expenditure			Estimated expenditure (projects in progress, and approved)		
	1974	1975	1976	on Jan. 1, 1976 for	on Jan. 1, 1977 for	
				1976	1977	1978
Northern Germany	6.7	9.0	28.3	24.4	18.8	2.9
North Rhine/Westphalia	41.9	54.1	41.1	36.5	29.2	18.3
Southern Germany	—	—	—	—	—	—
Saar	8.6	2.6	1.0	1.1	15.5	39.7
<i>FR of Germany</i>	57.2	65.6	70.3	62.0	63.5	60.9
<i>Belgium</i>	30.7	25.2	18.6	20.9	8.2	14.2
Eastern France	3.4	3.3	4.4	4.4	2.8	1.7
Northern France	5.9	5.4	2.3	4.5	3.9	0.9
France - other areas	46.7	26.7	21.5	25.8	12.4	4.7
<i>France</i>	56.0	35.4	28.2	34.7	19.2	7.4
Italy - coastal areas	33.7	14.1	16.8	12.2	18.3	15.0
Italy - other areas	1.2	—	—	0.1	—	—
<i>Italy</i>	34.9	14.1	16.8	12.3	18.3	15.0
<i>Luxembourg</i>	3.9	18.3	31.3	33.5	33.1	5.0
<i>Netherlands</i>	25.8	42.9	16.7	20.3	12.3	6.7
Total EUR 6	208.5	201.5	182.1	183.7	154.6	109.2
Scotland	5.4	25.5	12.4	11.0	7.6	9.8
Wales	13.4	10.5	2.5	2.7	7.4	32.7
Northern England	1.5	13.8	40.1	22.0	36.3	16.5
England - other areas	0.6	0.6	0.1	0.1	0.1	—
<i>United Kingdom</i>	20.9	50.4	55.1	35.8	51.3	59.0
<i>Denmark</i>	—	—	—	—	—	—
<i>Ireland</i>	—	—	—	—	—	—
Total EUR 9	229.4	251.9	237.2	219.5	205.8	168.2

TABLE 22
Capital expenditure

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

Investment

million EUA

Total EUR 9	39.6	49.8	81.3	66.1	100.1	97.9
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STEELWORKS TOTAL

Investment

TABLE 23
Capital expenditure by regions

million EUA

Region	Actual expenditure			Estimated expenditure (projects in progress, and approved)		
				on Jan. 1, 1976 for	on Jan. 1, 1977 for	
	1974	1975	1976	1976	1977	1978
Northern Germany	35.2	24.2	37.3	33.3	23.8	4.4
North Rhine/Westphalia	49.1	71.9	95.3	73.8	77.7	41.1
Southern Germany	10.1	19.6	8.9	7.0	8.9	3.0
Saar	12.7	21.6	24.9	16.8	28.0	42.3
<i>FR of Germany</i>	107.1	137.4	166.5	130.9	138.4	90.9
<i>Belgium</i>	65.0	45.0	59.0	55.1	21.4	16.1
Eastern France	11.0	15.8	29.0	18.1	52.9	67.6
Northern France	15.0	17.8	9.2	8.7	17.1	4.2
France - other areas	77.2	49.1	32.6	43.3	26.3	10.9
<i>France</i>	103.2	82.6	70.8	70.1	96.2	82.7
Italy - coastal areas	43.0	24.3	51.6	44.8	66.9	53.3
Italy - other areas	75.4	96.8	62.6	51.6	46.1	19.3
<i>Italy</i>	118.4	121.1	114.2	96.4	113.0	72.6
<i>Luxembourg</i>	4.5	19.1	31.8	33.8	33.1	5.0
<i>Netherlands</i>	25.8	44.7	16.7	20.3	12.3	6.7
Total EUR 6	424.0	449.7	459.1	406.6	414.4	273.9
Scotland	20.8	30.8	14.0	13.9	8.8	9.8
Wales	15.6	38.7	22.8	39.2	30.4	42.2
Northern England	22.9	39.5	72.5	57.8	62.9	17.5
England - other areas	14.0	11.1	2.3	5.2	7.9	5.5
<i>United Kingdom</i>	73.3	120.2	111.6	116.1	110.0	75.0
<i>Denmark</i>	23.9	28.8	4.9	5.0	1.5	—
<i>Ireland</i>	—	14.8	0.1	—	1.0	3.0
Total EUR 9	521.2	613.6	575.6	527.7	526.9	351.9

ROLLING MILLS TOTAL

Investment

TABLE 24
Capital expenditure by type of mill

Type of mill	Actual expenditure			Estimated expenditure (cat. A + B)	
	1974	1975	1976	1977	1978
	Blooming and slabbing mills	106.6	136.7	171.2	132.4
Continuous casting plants	246.9	263.1	178.4	188.3	171.6
Total section mills	285.5	322.4	292.4	218.8	168.6
Total flat product mills	490.6	548.4	482.9	326.1	279.9
Miscellaneous (including coating lines)	130.4	135.4	144.8	100.6	33.7
Total	1 260.0	1 406.0	1 269.7	966.2	732.4

million EUA

CONTINUOUS CASTING PLANTS

Investment

TABLE 25
Capital expenditure by regions

million EUA

Region	Actual expenditure			Estimated expenditure (projects in progress, and approved)		
				on Jan. 1, 1976 for	on Jan. 1, 1977 for	
	1974	1975	1976	1976	1977	1978
Northern Germany	17.2	6.1	0.3	2.0	0.4	3.1
North Rhine/Westphalia	61.4	67.6	28.8	33.8	23.1	37.0
Southern Germany	0.2	0.4	2.1	1.7	0.7	0.4
Saar	4.5	19.2	0.8	0.7	6.4	16.5
<i>FR of Germany</i>	83.3	93.3	31.9	38.2	30.6	56.9
<i>Belgium</i>	25.4	40.3	34.1	33.7	29.8	17.5
Eastern France	7.3	2.7	0.7	1.1	0.4	0.0
Northern France	11.3	14.0	15.4	21.5	13.7	1.8
France - other areas	26.7	22.6	0.7	16.0	5.1	3.9
<i>France</i>	45.3	39.2	16.8	38.6	19.2	5.7
Italy - coastal areas	37.6	14.6	7.2	22.4	34.8	37.8
Italy - other areas	22.1	25.4	27.8	20.5	15.2	1.5
<i>Italy</i>	59.7	40.0	35.0	42.9	50.0	39.2
<i>Luxembourg</i>	—	—	—	—	—	—
<i>Netherlands</i>	—	—	—	—	—	—
Total EUR 6	213.7	212.8	117.8	153.4	129.5	119.3
Scotland	7.1	2.2	8.3	0.2	20.4	16.0
Wales	1.4	18.5	7.8	13.0	7.1	28.2
Northern England	4.9	9.6	40.1	30.2	30.1	6.4
England - other areas	6.7	3.9	1.4	1.8	0.7	0.0
<i>United Kingdom</i>	20.1	34.2	57.7	45.2	58.2	50.6
<i>Denmark</i>	13.1	16.2	3.0	2.8	—	—
<i>Ireland</i>	—	—	—	—	0.5	1.7
Total EUR 9	246.9	263.2	178.4	201.4	188.3	171.6

BLOOMING AND SLABBING MILLS
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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, 1976 for	on Jan. 1, 1977 for	
	1974	1975	1976	1976	1977	1978
Northern Germany	8.0	5.7	0.5	0.7	2.6	0.0
North Rhine/Westphalia	18.2	22.1	48.8	16.7	17.9	12.7
Southern Germany	0.5	0.8	0.6	0.3	1.6	0.2
Saar	0.1	4.2	4.7	4.8	2.0	—
<i>FR of Germany</i>	26.8	32.8	54.6	22.5	24.1	13.0
<i>Belgium</i>	7.8	9.1	4.9	7.0	0.8	0.9
Eastern France	10.3	14.2	15.7	19.6	7.4	2.4
Northern France	0.3	0.3	0.6	1.5	0.5	—
France - other areas	16.9	12.8	0.8	2.1	0.5	0.1
<i>France</i>	27.6	27.3	17.1	23.2	8.4	2.5
Italy - coastal areas	10.0	5.3	2.2	6.5	5.5	0.4
Italy - other areas	2.7	12.1	4.0	5.0	2.6	0.6
<i>Italy</i>	12.7	17.4	6.3	11.5	8.0	1.0
<i>Luxembourg</i>	11.5	8.4	6.0	9.3	10.8	0.1
<i>Netherlands</i>	8.4	5.0	3.8	3.5	1.0	0.6
Total EUR 6	94.8	99.9	92.7	77.0	53.1	17.9
Scotland	0.7	1.2	0.1	0.8	0.1	—
Wales	4.4	5.7	3.1	7.8	24.1	38.3
Northern England	6.5	28.7	74.7	93.2	54.7	22.4
England - other areas	0.2	1.2	0.6	0.5	0.3	—
<i>United Kingdom</i>	11.8	36.8	78.5	102.3	79.3	60.7
<i>Denmark</i>	—	—	—	—	—	—
<i>Ireland</i>	—	0.0	—	—	—	—
Total EUR 9	106.6	136.7	171.2	179.3	132.4	78.6

SECTION MILLS

Investment

TABLE 27
Capital expenditure by sector

million EUA

Sectors	Actual expenditure			Estimated expenditure (cat. A + B)	
	1974	1975	1976	1977	1978
Heavy and medium section mills	82.9	142.5	132.2	108.3	71.3
Small bar mills	68.9	44.3	62.7	51.5	26.4
Wire rod mills	133.7	135.6	97.5	59.0	70.9
Total section mills	285.5	322.4	292.4	218.8	168.6

SECTION MILLS

Investment

TABLE 28
Capital expenditure by regions

million EUA

Region	Actual expenditure			Estimated expenditure (projects in progress, and approved)		
				on Jan. 1, 1976 for	on Jan. 1, 1977 for	
	1974	1975	1976	1976	1977	1978
Northern Germany	32.9	31.5	14.8	12.6	11.4	10.2
North Rhine/Westphalia	7.6	24.4	45.0	34.9	47.7	30.0
Southern Germany	3.4	1.8	0.3	0.3	5.4	2.4
Saar	3.5	3.5	1.0	1.5	1.8	—
<i>FR of Germany</i>	47.5	61.2	61.1	49.3	66.4	42.6
<i>Belgium</i>	43.7	37.7	29.3	34.2	7.0	1.3
Eastern France	13.0	31.4	30.9	24.7	11.0	13.8
Northern France	5.0	2.4	15.0	19.4	25.2	16.0
France - other areas	39.3	13.0	5.0	8.1	6.9	2.8
<i>France</i>	57.3	46.9	50.9	52.3	43.1	32.7
Italy - coastal areas	12.2	34.9	43.6	47.5	35.7	27.4
Italy - other areas	30.6	37.8	32.8	28.3	30.7	44.5
<i>Italy</i>	42.8	72.7	76.4	75.8	66.4	71.9
<i>Luxembourg</i>	12.7	5.3	3.1	7.3	6.4	0.4
<i>Netherlands</i>	0.3	1.7	0.4	0.7	0.7	0.4
Total EUR 6	204.3	225.4	221.2	219.6	189.9	149.2
Scotland	1.1	1.0	2.2	1.0	1.0	0.8
Wales	15.2	21.7	11.6	16.9	4.8	—
Northern England	56.6	55.8	32.2	35.3	12.6	7.7
England - other areas	7.1	16.8	25.0	10.2	3.5	0.6
<i>United Kingdom</i>	80.0	95.3	70.9	63.4	21.9	9.1
<i>Denmark</i>	1.2	1.7	0.3	1.2	3.8	—
<i>Ireland</i>	—	0.1	—	—	3.3	10.3
Total EUR 9	285.5	322.4	292.4	284.2	218.8	168.6

FLAT PRODUCT MILLS

Investment

TABLE 29
Capital expenditure by sectors

million EUA

Sectors	Actual expenditure			Estimated expenditure (cat. A + B)	
	1974	1975	1976	1977	1978
Hot wide strip mills.....	209.5	208.5	127.5	75.7	149.4
Hoop and strip mills.....	36.1	14.3	10.8	29.0	10.1
Plate and universal mills.....	52.1	102.7	113.6	69.5	32.7
Hot sheet mills.....	0.1	1.6	0.3	0.1	—
Cold strip mills.....	192.8	221.2	230.6	151.9	87.7
Total flat product mills	490.6	548.4	482.9	326.1	279.9

FLAT PRODUCT MILLS

Investment

TABLE 30
Capital expenditure by regions

million EUA

Region	Actual expenditure			Estimated expenditure (projects in progress, and approved)		
	1974	1975	1976	on Jan. 1, 1976 for	on Jan. 1, 1977 for	
				1976	1977	1978
Northern Germany	53.2	59.0	41.3	38.7	24.0	10.5
North Rhine/Westphalia	63.4	56.6	60.6	78.7	43.2	37.7
Southern Germany	12.2	9.8	1.4	1.3	2.5	1.6
Saar	3.8	17.7	17.4	25.3	0.6	1.1
<i>FR of Germany</i>	132.6	143.0	120.6	144.0	70.3	50.9
<i>Belgium</i>	90.5	80.9	48.8	41.1	19.0	13.1
Eastern France	10.5	10.9	9.3	8.7	14.9	5.5
Northern France	61.9	54.4	40.9	34.3	25.0	6.2
France - other areas	48.7	35.7	44.0	40.3	10.4	3.2
<i>France</i>	121.1	100.9	94.3	83.3	50.3	14.8
Italy - coastal areas	59.8	52.1	40.2	41.9	53.8	46.6
Italy - other areas	32.8	32.7	31.9	33.4	21.0	10.6
<i>Italy</i>	92.6	84.8	72.0	75.3	74.8	57.2
<i>Luxembourg</i>	0.8	0.4	0.6	2.1	12.4	6.3
<i>Netherlands</i>	3.5	4.4	6.7	3.1	7.1	4.0
Total EUR 6	441.1	414.4	343.0	348.9	233.9	146.3
Scotland	11.0	7.7	8.7	9.7	7.3	0.2
Wales	23.0	98.4	66.1	53.1	52.5	124.8
Northern England	13.7	25.8	56.2	56.9	30.0	8.5
England - other areas	1.5	1.5	2.8	0.8	0.8	0.0
<i>United Kingdom</i>	49.2	133.3	133.9	120.5	90.7	133.6
<i>Denmark</i>	0.3	0.7	5.9	1.2	1.5	—
<i>Ireland</i>	—	—	—	—	—	—
Total EUR 9	490.6	548.4	482.9	470.6	326.1	279.9

HOT WIDE STRIP MILLS

Investment
(already included in
capital expenditure for
flat product mills: Table 30)

TABLE 31
Capital expenditure by regions

Region	Actual expenditure			Estimated expenditure (projects in progress, and approved)		
				on Jan. 1, 1976 for 1976	on Jan. 1, 1977 for	
	1974	1975	1976	1976	1977	1978
Northern Germany	48.6	46.9	16.3	13.9	5.1	2.6
North Rhine/Westphalia	25.1	19.7	13.7	16.5	9.5	13.6
Southern Germany	—	—	—	—	—	—
Saar	—	—	—	—	—	—
<i>FR of Germany</i>	73.7	66.5	30.0	30.4	14.5	16.2
<i>Belgium</i>	52.9	56.2	36.4	22.6	10.6	4.8
Eastern France	1.7	2.0	1.1	1.4	1.0	1.0
Northern France	4.6	0.7	0.9	0.8	0.2	—
France - other areas	26.3	7.2	19.0	14.3	—	—
<i>France</i>	32.6	9.9	20.9	16.5	1.2	1.0
Italy - coastal areas	24.0	6.7	2.4	5.0	4.1	0.8
Italy - other areas	2.9	6.5	7.2	7.5	7.7	5.6
<i>Italy</i>	26.9	13.2	9.6	12.5	11.8	6.3
<i>Luxembourg</i>	0.1	0.1	—	0.1	0.0	—
<i>Netherlands</i>	1.9	2.5	1.7	1.0	0.9	0.5
Total EUR 6	188.1	148.3	98.6	83.1	39.0	28.9
Scotland	6.7	1.8	0.7	2.2	0.2	—
Wales	9.5	53.3	22.0	6.5	34.5	119.7
Northern England	5.2	5.1	6.2	5.7	2.0	0.9
England - other areas	—	—	—	—	—	—
<i>United Kingdom</i>	21.4	60.2	28.9	14.4	36.7	120.6
<i>Denmark</i>	—	—	—	—	—	—
<i>Ireland</i>	—	—	—	—	—	—
Total EUR 9	209.5	208.5	127.5	97.5	75.7	149.4

million EUA

ROLLING MILLS TOTAL

Investment

TABLE 32
Capital expenditure by regions

million EUA

Region	Actual expenditure			Estimated expenditure (projects in progress, and approved)		
				on Jan. 1, 1976 for	on Jan. 1, 1977 for	
	1974	1975	1976	1976	1977	1978
Northern Germany	115.2	108.0	57.4	54.5	38.5	23.8
North Rhine/Westphalia	160.9	197.1	225.6	199.6	153.8	127.0
Southern Germany	16.9	14.0	5.4	4.7	12.4	5.2
Saar	13.3	47.6	27.7	34.8	12.2	20.1
<i>FR of Germany</i>	306.3	366.7	316.0	293.6	216.9	176.1
<i>Belgium</i>	182.8	175.8	119.0	125.4	62.7	34.2
Eastern France	46.4	61.7	59.1	56.0	36.9	22.2
Northern France	99.1	86.0	82.1	90.1	71.6	25.3
France - other areas	168.6	105.3	67.0	87.5	36.9	15.7
<i>France</i>	314.2	253.1	208.2	233.6	145.4	63.2
Italy - coastal areas	140.9	117.3	98.6	129.4	140.6	112.2
Italy - other areas	95.7	114.5	101.5	97.2	76.2	63.6
<i>Italy</i>	236.6	231.8	200.1	226.6	216.8	175.8
<i>Luxembourg</i>	25.9	14.1	10.0	19.0	30.4	6.7
<i>Netherlands</i>	12.4	11.6	11.1	7.6	9.9	5.5
Total EUR 6	1 078.2	1 053.1	864.5	905.8	682.2	461.5
Scotland	19.9	12.1	19.4	11.7	28.8	16.9
Wales	48.4	175.6	133.5	120.3	105.9	195.0
Northern England	82.3	121.6	212.8	227.9	133.3	46.3
England - other areas	16.6	24.9	30.2	13.8	5.4	0.7
<i>United Kingdom</i>	167.2	334.1	395.9	373.7	273.4	258.9
<i>Denmark</i>	14.6	18.5	9.2	5.1	6.9	—
<i>Ireland</i>	—	0.3	0.0	—	3.8	12.0
Total EUR 9	1 260.0	1 406.0	1 269.7	1 284.6	966.2	732.4

**STEELWORKS-OWNED
POWER-GENERATING
PLANTS AND DISTRIBUTION
NETWORKS**

Investment

TABLE 33
Capital expenditure by regions

million EUA

Region	Actual expenditure			Estimated expenditure (projects in progress, and approved)		
				on Jan. 1, 1976 for 1976	on Jan. 1, 1977 for	
	1974	1975	1976	1977	1978	
Northern Germany	21.7	8.5	9.2	8.9	4.4	0.2
North Rhine/Westphalia	11.7	17.0	28.8	22.2	20.5	10.2
Southern Germany	2.7	1.0	0.9	1.4	0.7	0.1
Saar	0.9	0.5	0.9	0.5	0.5	0.2
<i>FR of Germany</i>	37.0	26.9	39.7	33.0	26.0	10.7
<i>Belgium</i>	11.4	11.7	13.7	13.5	5.1	1.9
Eastern France	4.5	12.0	9.6	10.4	9.0	4.1
Northern France	3.9	4.3	1.6	1.3	2.8	0.6
France - other areas	11.8	28.7	6.5	6.4	3.2	1.4
<i>France</i>	20.2	45.0	17.7	18.1	15.0	6.0
Italy - coastal areas	14.1	13.7	26.4	9.0	13.2	6.1
Italy - other areas	17.3	10.6	8.3	11.6	12.7	7.6
<i>Italy</i>	31.4	24.3	34.7	20.6	26.0	13.7
<i>Luxembourg</i>	0.4	0.4	0.2	0.6	1.0	0.0
<i>Netherlands</i>	5.2	9.4	4.8	5.3	1.7	1.0
Total EUR 6	105.6	117.6	110.7	91.1	74.8	33.3
Scotland	0.0	1.7	0.6	0.0	0.6	0.1
Wales	0.1	—	—	0.0	—	—
Northern England	5.5	12.0	61.3	16.0	23.6	6.3
England - other areas	1.5	0.7	1.3	2.2	1.4	—
<i>United Kingdom</i>	7.1	14.5	63.1	18.2	25.6	6.4
<i>Denmark</i>	—	—	—	—	—	—
<i>Ireland</i>	—	—	—	—	—	—
Total EUR 9	112.7	132.1	173.8	109.3	100.4	39.7

MISCELLANEOUS (IRON- AND STEELWORKS)

Investment

TABLE 34
Capital expenditure by regions

million EUA

Region	Actual expenditure			Estimated expenditure (projects in progress, and approved)		
				on Jan. 1, 1976 for 1976	on Jan. 1, 1977 for	
	1974	1975	1976	1976	1977	1978
Northern Germany	24.0	15.9	20.6	19.9	7.7	1.9
North Rhine/Westphalia	32.8	52.4	47.1	75.4	69.0	27.2
Southern Germany	2.0	3.1	4.3	3.9	1.9	0.6
Saar	8.9	13.8	11.8	12.4	15.5	10.9
<i>FR of Germany</i>	67.7	85.1	83.9	111.6	94.1	40.5
<i>Belgium</i>	33.8	25.8	21.9	11.8	9.5	0.4
Eastern France	15.7	20.9	17.7	15.2	11.7	3.8
Northern France	25.5	19.0	12.6	12.4	8.8	3.3
France - other areas	34.0	22.3	11.1	21.6	8.7	4.9
<i>France</i>	75.2	62.2	41.4	49.2	29.3	11.9
Italy - coastal areas	81.6	96.6	50.5	86.5	25.6	25.4
Italy - other areas	22.0	24.5	28.0	25.9	23.1	8.2
<i>Italy</i>	103.6	121.0	78.6	112.4	48.7	33.5
<i>Luxembourg</i>	8.4	9.6	10.6	8.0	10.5	0.1
<i>Netherlands</i>	15.5	22.3	15.4	22.2	14.6	8.1
Total EUR 6	304.2	326.0	251.8	315.2	206.6	94.5
Scotland	11.9	4.2	5.3	58.1	8.8	7.5
Wales	5.5	24.4	16.6	9.1	23.0	44.2
Northern England	27.5	38.5	52.4	84.7	63.9	33.0
England - other areas	2.3	3.2	4.8	3.0	6.0	0.3
<i>United Kingdom</i>	47.2	70.3	79.0	154.9	101.7	85.0
<i>Denmark</i>	1.8	0.8	1.4	0.9	—	—
<i>Ireland</i>	—	0.1	—	—	4.8	15.2
Total EUR 9	353.2	397.2	332.2	471.0	313.2	194.7

GENERAL SERVICES (IRON AND STEEL- WORKS) TOTAL

Investment

TABLE 35
Capital expenditure by regions

million EUA

Region	Actual expenditure			Estimated expenditure (projects in progress, and approved)		
				on Jan. 1, 1976 for	on Jan. 1, 1977 for	
	1974	1975	1976	1976	1977	1978
Northern Germany	45.7	24.3	29.8	28.8	12.0	2.1
North Rhine/Westphalia	44.5	69.3	75.9	97.7	89.5	37.4
Southern Germany	4.7	4.1	5.2	5.3	2.6	0.7
Saar	9.7	14.3	12.7	12.8	16.0	11.1
<i>FR of Germany</i>	104.5	112.0	123.6	144.6	120.1	51.3
<i>Belgium</i>	45.3	37.4	35.5	25.3	14.6	2.2
Eastern France	20.3	32.9	27.3	25.5	20.7	7.9
Northern France	29.5	23.3	14.2	13.8	11.7	3.9
France - other areas	45.8	51.0	17.7	28.0	11.9	6.2
<i>France</i>	95.6	107.2	59.1	67.3	44.3	17.9
Italy - coastal areas	95.8	110.2	76.9	95.4	38.8	31.4
Italy - other areas	39.4	35.1	36.3	37.6	35.8	15.8
<i>Italy</i>	135.2	145.3	113.3	133.0	74.7	47.2
<i>Luxembourg</i>	8.8	10.0	10.8	8.6	11.6	0.1
<i>Netherlands</i>	20.7	31.7	20.2	27.6	16.3	9.1
Total EUR 6	410.1	443.6	362.5	406.4	281.4	127.8
Scotland	12.0	6.0	5.9	58.2	9.4	7.6
Wales	5.6	24.4	16.6	9.2	23.0	44.2
Northern England	33.0	50.5	113.6	100.5	87.5	39.3
England - other areas	3.8	4.0	6.1	5.1	7.4	0.3
<i>United Kingdom</i>	54.4	84.8	142.2	173.0	127.3	91.3
<i>Denmark</i>	1.8	0.8	1.4	0.9	—	—
<i>Ireland</i>	—	0.1	—	—	4.8	15.2
Total EUR 9	466.3	529.3	506.1	580.3	413.6	234.3

SINTER AND SPONGE IRON

Production

TABLE 36

Production and production potential by regions

million tonnes

Actual production	Region	Production potential			Expected production potential			
		1974	1975	1976	1977	1978	1979	1980
1976								
118.3	Total EUR 6	143.1	148.6	151.5	156.3	157.5	160.2	162.3
133.8	Total EUR 9	163.2	170.9	172.0	180.4	186.2	190.5	192.7

PIG IRON

Production

TABLE 37

Production and production potential by regions

million tonnes

6.0	Northern Germany	8.9	9.4	9.4	9.4	10.2	10.2	10.2
20.7	North Rhine/Westphalia ...	29.1	29.3	31.2	32.4	32.8	33.0	33.0
0.8	Southern Germany	1.3	1.3	1.4	1.4	1.4	1.4	1.4
4.4	Saar	6.7	7.3	7.5	7.7	7.7	7.7	8.3
31.8	FR of Germany	46.0	47.3	49.5	50.9	52.1	52.4	52.9
10.0	Belgium	14.4	15.5	15.9	15.9	16.2	16.6	16.7
10.3	Eastern France	13.9	14.0	14.1	14.5	14.5	14.7	14.7
6.1	Northern France	8.9	9.6	9.1	9.0	9.5	9.6	9.6
2.6	France - other areas	2.4	3.9	4.3	4.4	4.4	4.4	4.4
19.0	France	25.2	27.5	27.5	27.8	28.3	28.6	28.6
11.5	Italy - coastal areas	13.3	16.3	16.9	16.9	17.0	17.1	17.3
0.3	Italy - other areas	0.5	0.5	0.3	0.3	0.3	0.3	0.3
11.7	Italy	13.8	16.8	17.2	17.2	17.3	17.4	17.6
3.8	Luxembourg	5.7	6.3	6.9	6.8	6.7	6.7	6.7
4.3	Netherlands	5.0	5.0	6.3	7.0	7.0	7.0	7.0
80.6	Total EUR 6	110.1	118.4	123.2	125.5	127.6	128.7	129.6
1.3	Scotland	1.9	1.9	1.9	2.0	2.6	3.0	2.6
4.5	Wales	5.3	5.4	6.0	6.2	6.7	6.9	6.6
6.8	Northern England	8.2	8.9	8.9	8.4	9.5	10.6	10.5
1.4	England - other regions ...	2.2	2.2	2.0	2.0	1.8	1.7	1.8
14.0	United Kingdom	17.6	18.4	18.8	18.6	20.7	22.2	21.5
—	Denmark	—	—	—	—	—	—	—
—	Ireland	—	—	—	—	—	—	—
94.6	Total EUR 9	127.7	136.8	142.0	144.1	148.3	150.8	151.0

STEEL - TOTAL

Production

TABLE 38

Production and production potential by regions

million tonnes

Actual production 1976	Region	Production potential			Expected production potential			
		1974	1975	1976	1977	1978	1979	1980
7.9	Northern Germany	11.0	11.8	11.6	11.6	12.5	12.5	12.5
27.4	North Rhine/Westphalia ...	38.4	39.6	42.4	42.8	42.9	43.6	43.6
2.2	Southern Germany	2.8	2.9	3.2	3.4	3.7	3.9	3.9
5.0	Saar	8.2	8.6	8.7	9.1	9.2	9.2	9.5
42.4	<i>FR of Germany</i>	60.4	62.9	65.8	66.9	68.3	69.2	69.4
12.1	<i>Belgium</i>	17.8	19.0	18.5	19.4	20.0	20.7	20.2
11.2	Eastern France	15.6	15.6	15.6	15.4	15.1	15.9	16.1
7.7	Northern France	11.0	11.8	10.9	10.6	11.2	11.5	11.7
4.4	France - other areas	3.9	6.3	6.8	7.1	7.4	7.5	7.5
23.2	<i>France</i>	30.5	33.7	33.3	33.1	33.8	34.9	35.3 ¹
12.7	Italy - coastal areas	15.3	18.2	19.3	19.3	19.7	20.1	20.5
10.8	Italy - other areas	13.6	14.5	14.4	15.2	15.9	16.3	16.4
23.4	<i>Italy</i>	28.9	32.7	33.7	34.4	35.6	36.5	37.0
4.6	<i>Luxembourg</i>	6.7	7.5	8.2	8.2	8.2	8.2	8.4
5.2	<i>Netherlands</i>	6.1	6.3	7.7	8.4	8.4	8.4	8.5
111.0	Total EUR 6	150.4	162.1	167.2	170.4	174.4	177.9	178.8
1.9	Scotland	3.2	2.9	3.3	3.2	3.6	3.6	3.8
6.3	Wales	7.8	7.4	8.1	9.4	10.0	10.0	9.8
11.3	Northern England	13.3	13.0	14.2	13.8	15.9	16.4	16.8
2.7	England - other regions	3.5	3.7	3.7	3.6	3.4	3.3	3.4
22.3	<i>United Kingdom</i>	27.8	27.0	29.2	30.0	32.9	33.4	33.7
0.7	<i>Denmark</i>	0.6	0.7	1.2	1.2	1.2	1.2	1.2
0.1	<i>Ireland</i>	0.1	0.1	0.1	0.1	0.1	0.2	0.2
134.1	Total EUR 9	178.9	189.9	197.7	201.7	208.5	212.7	214.0

¹ Certain decisions taken since the date of the survey in the framework of the current restructuring of the French steel industry could reduce French crude steel production potential in 1980 to a level of about 33 m. tonnes.

CRUDE STEEL

Production

TABLE 39
Comparison of the forecasts of crude steel production potential
given in recent surveys

million tonnes

Year of inquiry	Production potential estimated							
	1973	1974	1975	1976	1977	1978	1979	1980
1972 Eur 6	148.8	157.5	164.0					
1973 Eur 6	146.1	155.7	164.1	167.9				
1974 Eur 6	144.9	153.5	163.0	170.3	173.3			
	Eur 9	174.5	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

CRUDE STEEL

Production

TABLE 40
Crude steel production potential according to steelmaking process

million tonnes

Process	Production		Production potential					
	1960	1976	1972	1976	1977	1978	1979	1980
Basic Bessemer Eur 6	35.9	4.1	19.2	7.3	5.1	3.7	3.6	3.4
	Eur 9	37.6	4.1	—	7.3	5.1	3.7	3.6
OBM and similar processes Eur 6	—	7.4	5.4	11.8	13.7	15.8	18.7	17.0
	Eur 9	—	7.4	—	11.8	13.7	15.8	18.7
Open-hearth Eur 6	27.5	9.5	20.3	14.1	13.0	11.1	9.5	9.1
	Eur 9	48.7	13.9	—	20.4	19.0	15.8	13.1
Electric furnace Eur 6	7.6	20.4	19.2	27.4	29.0	30.8	32.4	32.8
	Eur 9	9.3	27.5	—	36.0	39.0	41.9	44.0
LD, Kaldo, etc Eur 6	1.8	69.6	75.6	106.6	109.6	112.9	113.7	116.5
	Eur 9	2.2	81.1	—	122.2	124.9	131.3	133.3
Total Eur 6	72.8	111.0	139.7	167.2	170.4	174.4	177.9	178.8
	Eur 9	97.8	134.1	—	197.7	201.7	208.5	212.7

CRUDE STEEL

Production

TABLE 41
Shares of the different steelmaking processes in 1960, 1976, 1980

%

Process	Actual production		Production potential	
	1960	1976	1976	1980 estimated share
Basic Bessemer	38.5	3.1	3.7	1.6
OBM and similar processes.....	—	5.5	6.0	7.9
Open-hearth	49.7	10.4	10.3	5.6
Electric furnace.....	9.5	20.5	18.2	20.8
LD, Kaldo, etc.....	2.3	60.5	61.8	64.1
Total	100.0	100.0	100.0	100.0

BASIC BESSEMER STEEL

Production

TABLE 42
Production and production potential by regions

million tonnes

Actual production 1976	Region	Production potential			Expected production potential			
		1974	1975	1976	1977	1978	1979	1980
—	Northern Germany	—	—	—	—	—	—	—
—	North Rhine/Westphalia ...	—	—	—	—	—	—	—
—	Southern Germany	—	—	—	—	—	—	—
0.6	Saar	1.9	1.0	0.7	—	—	—	—
0.6	FR of Germany	1.9	1.0	0.7	—	—	—	—
0.2	Belgium	2.6	2.2	0.5	—	—	—	—
2.4	Eastern France	5.2	4.3	3.7	3.4	2.9	2.7	2.6
—	Northern France	—	—	—	—	—	—	—
0.3	France - other areas	0.5	0.5	0.5	0.4	—	—	—
2.7	France	5.7	4.8	4.2	3.8	2.9	2.7	2.6
—	Italy - coastal areas	—	—	—	—	—	—	—
—	Italy - other areas	—	—	—	—	—	—	—
—	Italy	—	—	—	—	—	—	—
0.5	Luxembourg	2.1	2.5	2.0	1.3	0.9	0.9	0.9
—	Netherlands	—	—	—	—	—	—	—
4.1	Total EUR 6	12.3	10.5	7.3	5.1	3.7	3.6	3.4
—	Total EUR 9	—	—	—	—	—	—	—

OPEN HEARTH STEEL

Production

TABLE 43

Production and production potential by regions

million tonnes

Actual production 1976	Region	Production potential			Expected production potential			
		1974	1975	1976	1977	1978	1979	1980
0.9	Northern Germany	1.4	1.3	1.0	1.0	1.0	1.0	1.0
4.4	North Rhine/Westphalia ...	7.8	7.8	6.7	6.6	6.6	6.3	6.3
0.4	Southern Germany	0.6	0.6	0.5	0.5	0.5	0.6	0.6
0.4	Saar	0.6	0.6	0.6	0.6	0.4	0.4	0.1
6.1	<i>FR of Germany</i>	10.4	10.3	8.7	8.7	8.5	8.4	8.0
0.1	<i>Belgium</i>	0.3	0.3	0.3	0.3	0.1	0.1	0.1
0.5	Eastern France	1.4	1.0	0.8	0.3	0.3	0.3	0.3
0.7	Northern France	1.5	1.4	0.8	0.5	0.3	0.3	0.2
0.2	France - other areas	0.4	0.3	0.3	0.1	—	—	—
1.3	<i>France</i>	3.3	2.7	1.8	0.9	0.6	0.6	0.5
1.5	Italy - coastal areas	2.5	2.4	2.5	2.5	1.4	0.1	0.1
0.4	Italy - other areas	1.9	1.5	0.7	0.5	0.4	0.2	0.2
2.0	<i>Italy</i>	4.4	3.9	3.2	3.0	1.8	0.3	0.3
—	<i>Luxembourg</i>	—	—	—	—	—	—	—
0.0	<i>Netherlands</i>	0.1	0.1	0.1	0.1	0.1	0.1	0.1
9.5	Total EUR 6	18.5	17.3	14.1	13.0	11.1	9.5	9.1
0.7	Scotland	1.9	1.3	1.5	1.3	0.5	0.3	0.2
2.4	Wales	3.1	2.8	2.9	2.8	2.4	2.0	1.5
0.4	Northern England	1.1	0.8	0.6	0.6	0.6	—	—
0.5	England - other regions	1.3	1.0	0.7	0.7	0.7	0.7	0.6
4.0	<i>United Kingdom</i>	7.4	5.9	5.8	5.4	4.2	3.0	2.3
0.4	<i>Denmark</i>	0.5	0.5	0.5	0.5	0.5	0.5	0.5
—	<i>Ireland</i>	0.1	0.1	—	—	—	—	—
13.9	Total EUR 9	26.5	23.7	20.4	19.0	15.8	13.1	11.9

ELECTRIC FURNACE STEEL

Production

TABLE 44

Production and production potential by regions

million tonnes

Actual production 1976	Region	Production potential			Expected production potential			
		1974	1975	1976	1977	1978	1979	1980
1.1	Northern Germany	1.2	1.3	1.5	1.5	1.5	1.6	1.6
2.7	North Rhine/Westphalia ...	3.7	3.5	3.8	3.9	3.9	4.3	4.3
1.1	Southern Germany	1.1	1.3	1.5	1.8	1.8	1.8	1.8
0.4	Saar	0.5	0.5	0.4	0.5	0.5	0.5	0.5
5.3	<i>FR of Germany</i>	6.5	6.6	7.2	7.6	7.7	8.2	8.2
0.5	<i>Belgium</i>	0.8	0.8	0.8	0.8	1.0	1.3	1.3
1.0	Eastern France	1.1	1.3	1.3	1.3	1.3	1.3	1.3
0.7	Northern France	0.7	0.7	0.9	1.0	1.2	1.4	1.4
1.6	France - other areas	1.8	2.3	2.2	2.4	2.5	2.5	2.5
3.3	<i>France</i>	3.6	4.3	4.4	4.7	5.0	5.2	5.2
0.6	Italy - coastal areas	0.4	0.5	0.9	0.9	1.2	1.4	1.7
10.2	Italy - other areas	11.5	12.8	13.5	14.5	15.2	15.8	15.9
10.8	<i>Italy</i>	11.9	13.3	14.4	15.4	16.5	17.3	17.6
0.1	<i>Luxembourg</i>	0.1	0.1	0.1	0.1	0.1	0.1	0.1
0.3	<i>Netherlands</i>	0.4	0.4	0.4	0.4	0.4	0.4	0.4
20.4	Total EUR 6	23.3	25.5	27.4	29.0	30.8	32.4	32.8
0.4	Scotland	0.3	0.4	0.5	0.6	0.6	0.6	0.6
0.5	Wales	0.5	0.5	0.5	1.7	2.1	2.3	2.4
4.6	Northern England	4.5	4.9	5.3	5.4	6.1	6.2	6.2
1.2	England - other regions	0.7	1.2	1.5	1.5	1.5	1.6	1.7
6.8	<i>United Kingdom</i>	6.0	7.0	7.8	9.2	10.3	10.7	10.8
0.3	<i>Denmark</i>	—	0.1	0.7	0.7	0.7	0.7	0.7
0.1	<i>Ireland</i>	0.1	0.1	0.1	0.1	0.1	0.2	0.2
27.5	Total EUR 9	29.4	32.7	36.0	39.0	41.9	44.0	44.5

LD, KALDO AND OTHER STEELS

Production

TABLE 45

Production and production potential by regions

million tonnes

Actual pro- duction	Region	Production potential			Expected production potential			
		1974	1975	1976	1977	1978	1979	1980
1976								
6.0	Northern Germany	8.5	9.1	9.1	9.1	10.0	10.0	10.0
20.3	North Rhine/Westphalia ...	26.9	28.1	31.9	32.4	32.4	32.9	32.9
—	Southern Germany	—	—	—	—	—	—	—
2.3	Saar	4.0	4.9	5.0	5.0	5.0	5.0	6.3
28.6	FR of Germany	39.4	42.1	46.0	46.5	47.4	47.9	49.2
9.8	Belgium	12.5	13.7	14.0	14.7	15.0	15.5	15.7
4.0	Eastern France	4.9	5.2	5.3	5.3	5.2	4.6	4.6
5.9	Northern France	7.9	8.8	8.8	8.8	9.7	9.9	10.2
2.3	France - other areas	1.3	3.2	3.8	4.2	5.0	5.0	5.0
12.2	France	14.1	17.2	17.9	18.3	19.9	19.4	19.7
10.5	Italy - coastal areas	12.3	15.3	15.8	15.8	16.0	16.1	16.2
0.2	Italy - other areas	0.2	0.2	0.3	0.3	0.3	0.3	0.3
10.7	Italy	12.5	15.5	16.1	16.1	16.2	16.3	16.5
3.5	Luxembourg	3.8	4.3	5.5	6.2	6.6	6.6	7.4
4.8	Netherlands	5.6	5.8	7.2	7.9	7.9	7.9	8.0
69.6	Total EUR 6	87.9	98.6	106.6	109.6	112.9	113.7	116.5
0.8	Scotland	1.0	1.2	1.2	1.3	2.5	2.7	3.0
3.4	Wales	4.2	4.1	4.6	4.9	5.5	5.7	5.9
6.3	Northern England	7.8	7.3	8.2	7.8	9.2	10.2	10.6
1.0	England - other regions	1.4	1.5	1.5	1.3	1.2	1.0	1.1
11.5	United Kingdom	14.4	14.1	15.6	15.4	18.4	19.7	20.6
—	Denmark	—	—	—	—	—	—	—
—	Ireland	—	—	—	—	—	—	—
81.1	Total EUR 9	102.3	112.7	122.2	124.9	131.3	133.3	137.1

BOTTOM BLOWN STEELS (OBM, LWS, ETC.)

TABLE 46

Production and production potential
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Production

million tonnes

7.4	Total EUR 9	8.4	10.1	11.8	13.7	15.8	18.7	16.9
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CONTINUOUS CASTING PLANTS

Production

TABLE 47

Production and production potential by regions

million tonnes

Actual production 1976	Region	Production potential			Expected production potential			
		1974	1975	1976	1977	1978	1979	1980
2.7	Northern Germany	2.3	3.3	3.8	3.8	3.8	3.8	3.8
6.7	North Rhine/Westphalia ...	6.2	7.7	10.5	11.5	12.1	13.0	13.0
1.1	Southern Germany	1.2	1.3	1.7	2.0	2.1	2.2	2.2
1.5	Saar	2.0	2.0	3.2	3.2	3.2	3.2	3.6
12.0	<i>FR of Germany</i>	11.7	14.3	19.2	20.5	21.2	22.3	22.7
0.7	<i>Belgium</i>	0.4	0.8	1.4	2.8	3.1	3.3	3.5
0.2	Eastern France	0.1	0.3	0.4	0.4	0.4	0.4	0.4
3.0	Northern France	3.4	4.0	4.1	4.2	4.7	5.0	5.4
1.0	France - other areas	0.2	0.7	1.4	2.0	2.1	1.9	1.6
4.2	<i>France</i>	3.7	5.0	5.9	6.6	7.2	7.3	7.4
2.5	Italy - coastal areas	1.6	4.0	4.9	5.3	6.6	6.7	7.1
5.3	Italy - other areas	3.8	6.0	7.2	7.9	8.8	9.3	9.3
7.8	<i>Italy</i>	5.4	10.0	12.1	13.2	15.4	15.9	16.3
—	<i>Luxembourg</i>	—	—	—	—	—	—	—
—	<i>Netherlands</i>	—	—	—	—	—	—	—
24.7	Total EUR 6	21.2	30.1	38.7	43.0	46.8	48.8	50.1
0.2	Scotland	0.1	0.6	0.6	0.7	0.8	1.0	1.6
—	Wales	—	0.0	0.1	1.1	1.3	1.3	1.3
1.3	Northern England	1.0	1.7	1.7	1.8	2.5	3.2	3.3
0.6	England - other regions	0.6	0.9	0.9	1.0	0.9	0.7	0.8
2.2	<i>United Kingdom</i>	1.7	3.2	3.3	4.6	5.4	6.2	6.9
0.3	<i>Denmark</i>	—	0.1	0.7	0.7	0.7	0.7	0.7
—	<i>Ireland</i>	—	—	—	—	—	0.2	0.2
27.2	Total EUR 9	22.9	33.4	42.6	48.3	52.8	55.8	57.7

COILS

Production

TABLE 48
Production and production potential by regions

million tonnes

Actual production 1976	Region	Production potential			Expected production potential			
		1974	1975	1976	1977	1978	1979	1980
3.7	Northern Germany	5.9	6.3	6.3	6.7	6.7	6.7	6.7
9.8	North Rhine/Westphalia ...	12.7	12.7	13.1	13.5	13.5	13.5	13.5
—	Southern Germany	—	—	—	—	—	—	—
—	Saar	—	—	—	—	—	—	—
13.5	<i>FR of Germany</i>	18.6	19.0	19.3	20.2	20.2	20.2	20.2
4.9	<i>Belgium</i>	6.7	7.4	7.5	8.8	8.8	9.0	9.2
2.8	Eastern France	3.2	3.3	3.3	3.5	3.5	3.5	3.5
4.4	Northern France	5.8	6.1	6.1	6.2	6.7	6.7	6.7
1.6	France - other areas	1.3	2.2	2.8	3.0	3.0	3.0	3.0
8.8	<i>France</i>	10.3	11.6	12.2	12.7	13.2	13.2	13.2
5.6	Italy - coastal areas	6.9	10.3	10.3	10.5	10.6	10.6	10.6
0.6	Italy - other areas	0.9	0.7	0.8	0.9	1.0	1.0	1.0
6.3	<i>Italy</i>	7.8	11.0	11.1	11.4	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
3.2	<i>Netherlands</i>	4.3	4.4	5.0	5.2	5.2	5.2	5.2
37.1	Total EUR 6	48.3	54.0	55.7	58.8	59.6	59.8	60.0
0.7	Scotland	1.0	1.2	0.9	0.9	1.3	1.4	1.5
4.4	Wales	6.1	5.2	5.3	6.3	6.6	6.8	6.8
0.6	Northern England	0.9	0.9	1.1	1.1	1.3	1.4	1.4
—	England - other regions	—	—	—	—	—	—	—
5.7	<i>United Kingdom</i>	8.0	7.3	7.3	8.2	9.2	9.6	9.8
—	<i>Denmark</i>	—	—	—	—	—	—	—
—	<i>Ireland</i>	—	—	—	—	—	—	—
42.7	Total EUR 9	56.3	61.3	63.0	67.1	68.7	69.4	69.8

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

Production

TABLE 49

Production and production potential by regions

million tonnes

Actual pro- duction 1976	Region	Production potential			Expected production potential			
		1974	1975	1976	1977	1978	1979	1980
1.3	Northern Germany	2.2	2.3	2.2	2.3	2.3	2.3	2.3
4.6	North Rhine/Westphalia ...	8.8	8.8	8.9	9.0	9.1	9.2	9.2
0.9	Southern Germany	1.7	1.7	1.8	1.8	1.8	1.8	1.8
1.6	Saar	2.9	3.1	3.0	3.1	3.1	3.1	3.2
8.5	<i>FR of Germany</i>	15.6	15.9	16.0	16.1	16.2	16.4	16.5
2.6	<i>Belgium</i>	5.9	5.7	5.4	4.8	5.0	5.2	5.2
3.1	Eastern France	4.5	4.5	4.6	4.7	4.7	4.7	4.7
1.1	Northern France	1.4	1.5	1.5	1.4	1.3	1.4	1.4
0.9	France - other areas	1.4	1.6	1.6	1.5	1.6	1.6	1.6
5.1	<i>France</i>	7.3	7.6	7.7	7.7	7.6	7.7	7.7
1.6	Italy - coastal areas	1.9	1.9	2.6	2.7	3.1	3.2	3.4
6.3	Italy - other areas	7.8	8.4	8.3	8.6	9.0	9.3	9.4
7.9	<i>Italy</i>	9.7	10.3	10.9	11.3	12.1	12.5	12.8
1.7	<i>Luxembourg</i>	2.9	3.1	3.5	3.5	3.5	3.5	3.5
0.3	<i>Netherlands</i>	0.4	0.4	0.4	0.5	0.5	0.5	0.5
26.2	Total EUR 6	41.8	43.0	43.8	43.9	45.0	45.9	46.4
0.2	Scotland	0.5	0.4	0.4	0.4	0.4	0.4	0.4
0.5	Wales	0.4	0.5	0.7	0.8	0.8	0.8	0.8
3.0	Northern England	4.4	4.2	4.1	4.3	4.5	4.7	4.7
1.6	England - other regions ...	2.4	2.3	2.2	2.1	2.1	2.1	2.2
5.4	<i>United Kingdom</i>	7.7	7.4	7.3	7.6	7.9	8.1	8.1
0.2	<i>Denmark</i>	0.3	0.3	0.3	0.3	0.3	0.3	0.3
0.1	<i>Ireland</i>	0.1	0.1	0.1	0.1	0.1	0.2	0.2
31.8	Total EUR 9	49.9	50.8	51.6	52.0	53.3	54.5	55.0

WIRE ROD

Production

TABLE 50
Production and production potential by regions

Actual production 1976	Region	Production potential			Expected production potential			
		1974	1975	1976	1977	1978	1979	1980
0.4	Northern Germany	0.6	0.7	0.7	0.7	0.7	0.7	0.7
2.0	North Rhine/Westphalia ...	3.5	3.6	3.6	3.6	3.6	3.7	3.7
0.4	Southern Germany	0.3	0.4	0.4	0.4	0.5	0.6	0.6
0.8	Saar	1.3	1.6	1.6	1.6	1.6	1.6	1.6
3.5	<i>FR of Germany</i>	5.7	6.3	6.3	6.3	6.4	6.6	6.6
0.7	<i>Belgium</i>	0.9	0.9	0.9	1.1	1.1	1.1	1.5
1.6	Eastern France	2.7	2.8	2.8	2.9	2.9	3.0	3.0
0.2	Northern France	0.3	0.3	0.4	0.4	0.5	0.5	0.5
0.4	France - other areas	0.6	0.7	0.6	0.6	0.7	0.7	0.7
2.3	<i>France</i>	3.6	3.8	3.7	4.0	4.0	4.1	4.2
0.2	Italy - coastal areas	0.3	0.3	0.3	0.3	0.3	0.4	0.5
1.1	Italy - other areas	1.5	1.5	1.7	1.8	2.0	2.1	2.1
1.3	<i>Italy</i>	1.8	1.8	2.0	2.1	2.3	2.5	2.6
0.4	<i>Luxembourg</i>	0.5	0.5	0.5	0.5	0.5	0.5	0.5
0.3	<i>Netherlands</i>	0.5	0.5	0.5	0.5	0.5	0.5	0.5
8.4	Total EUR 6	13.0	13.8	14.0	14.6	14.8	15.3	16.0
—	Scotland	—	—	—	—	—	—	—
0.3	Wales	0.4	0.4	0.4	0.4	0.6	0.6	0.6
1.6	Northern England	1.8	2.0	2.2	2.5	2.6	2.6	2.6
0.1	England - other regions	0.1	0.1	0.2	0.2	0.2	0.2	0.2
2.0	<i>United Kingdom</i>	2.3	2.5	2.7	3.1	3.4	3.4	3.4
—	<i>Denmark</i>	—	—	—	—	—	—	—
—	<i>Ireland</i>	—	—	—	—	—	—	—
10.4	Total EUR 9	15.3	16.3	16.7	17.7	18.2	18.7	19.4

million tonnes

HOOP AND STRIP FOR TUBE MAKING

Production

TABLE 51
Production and production potential by regions

million tonnes

Actual pro- duction 1976	Region	Production potential			Expected production potential			
		1974	1975	1976	1977	1978	1979	1980
0.3	Northern Germany	0.2	0.2	0.4	0.4	0.4	0.4	0.4
2.1	North Rhine/Westphalia ...	3.4	3.2	3.4	3.5	3.5	3.5	3.5
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
2.6	<i>FR of Germany</i>	4.0	3.8	4.2	4.3	4.3	4.3	4.3
0.2	<i>Belgium</i>	0.3	0.3	0.3	0.3	0.3	0.3	0.3
1.1	Eastern France	1.5	1.5	1.6	1.6	1.5	1.6	1.6
0.1	Northern France	0.2	0.2	0.2	0.2	0.2	0.2	0.2
0.1	France - other areas	0.2	0.4	0.4	0.5	0.5	0.5	0.5
1.3	<i>France</i>	1.9	2.1	2.2	2.3	2.3	2.4	2.4
0.4	Italy - coastal areas	0.8	0.9	0.9	0.9	0.9	0.9	0.9
0.4	Italy - other areas	0.7	0.7	0.8	0.8	0.8	0.8	0.8
0.8	<i>Italy</i>	1.5	1.6	1.7	1.7	1.7	1.7	1.7
0.7	<i>Luxembourg</i>	1.1	1.2	1.2	1.2	1.2	1.2	1.2
0.2	<i>Netherlands</i>	0.3	0.3	0.4	0.4	0.4	0.4	0.4
5.8	Total EUR 6	9.1	9.3	10.1	10.3	10.4	10.4	10.4
—	Scotland	—	—	—	—	—	—	—
0.1	Wales	0.2	0.2	0.2	0.3	0.3	0.4	0.3
0.4	Northern England	0.5	0.4	0.5	0.5	0.5	0.5	0.5
0.8	England - other regions	1.1	1.2	1.1	1.1	1.1	1.1	1.1
1.3	<i>United Kingdom</i>	1.8	1.8	1.8	1.9	1.9	1.9	1.9
—	<i>Denmark</i>	—	—	—	—	—	—	—
—	<i>Ireland</i>	—	—	—	—	—	—	—
7.1	Total EUR 9	10.9	11.1	11.9	12.2	12.3	12.3	12.3

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

Production

TABLE 52

Production and production potential by regions

million tonnes

Actual production	Region	Production potential			Expected production potential			
		1974	1975	1976	1977	1978	1979	1980
1976								
0.6	Northern Germany	1.0	1.0	1.0	1.1	1.1	1.1	1.1
3.4	North Rhine/Westphalia ...	6.3	6.4	6.9	7.1	7.4	7.4	7.4
—	Southern Germany	—	—	—	—	—	—	—
0.6	Saar	1.9	1.9	2.0	2.3	2.3	2.3	2.3
4.5	FR of Germany	9.2	9.3	9.9	10.6	10.9	10.9	10.9
1.1	Belgium	2.2	2.4	2.2	2.3	2.3	2.4	2.5
0.5	Eastern France	1.1	1.1	1.0	1.0	1.0	1.0	1.0
0.7	Northern France	1.2	1.3	1.3	1.3	1.3	1.3	1.3
0.3	France - other areas	0.4	0.6	0.7	0.7	0.9	0.9	0.9
1.6	France	2.7	3.0	3.0	3.0	3.2	3.2	3.2
2.0	Italy - coastal areas	2.9	3.4	3.6	3.6	4.1	4.1	4.1
0.4	Italy - other areas	0.8	0.8	0.8	0.8	0.8	0.8	0.8
2.4	Italy	3.7	4.2	4.4	4.4	4.9	4.9	4.9
0.2	Luxembourg	0.3	0.3	0.3	0.3	0.3	0.3	0.3
0.3	Netherlands	0.8	0.8	0.7	0.7	0.7	0.7	0.7
10.2	Total EUR 6	18.9	20.0	20.5	21.2	22.3	22.4	22.5
0.4	Scotland	0.6	0.6	0.6	0.7	0.8	0.8	0.8
0.1	Wales	0.2	0.2	0.1	0.2	0.2	0.2	0.2
1.1	Northern England	1.5	1.5	1.7	1.6	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
1.9	United Kingdom	2.6	2.6	2.7	2.9	3.2	3.3	3.2
0.3	Denmark	0.3	0.3	0.5	0.6	0.6	0.6	0.6
—	Ireland	—	—	—	—	—	—	—
12.4	Total EUR 9	21.8	22.9	23.7	24.7	26.1	26.2	26.3

HOT-ROLLED SHEET < 3 mm ¹
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Production

TABLE 53

Production and production potential by regions

million tonnes

Actual production 1976	Region	Production potential			Expected production potential			
		1974	1975	1976	1977	1978	1979	1980
—	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	0.2	0.1	0.1	0.1	0.1
—	Southern Germany	—	—	—	—	—	—	—
—	Saar	—	—	—	—	—	—	—
0.1	<i>FR of Germany</i>	0.2	0.2	0.2	0.1	0.1	0.1	0.1
—	<i>Belgium</i>	0.2	0.1	0.2	0.3	0.3	0.3	0.4
—	Eastern France	0.1	0.1	0.1	0.1	0.1	0.1	0.1
0.1	Northern France	0.1	0.1	0.1	0.1	0.1	0.1	0.1
—	France - other areas	0.1	0.2	0.2	0.2	0.2	0.2	0.2
0.1	<i>France</i>	0.3	0.4	0.4	0.4	0.4	0.4	0.4
—	Italy - coastal areas	0.3	0.4	0.4	0.4	0.5	0.5	0.5
—	Italy - other areas	—	—	—	—	—	—	—
—	<i>Italy</i>	0.3	0.4	0.4	0.4	0.5	0.5	0.5
—	<i>Luxembourg</i>	—	—	—	—	—	—	—
—	<i>Netherlands</i>	—	0.0	0.0	0.0	0.1	0.1	0.1
0.2	Total EUR 6	1.0	1.1	1.3	1.3	1.3	1.4	1.5
—	Scotland	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.1	Wales	0.1	0.1	0.1	0.3	0.3	0.3	0.3
—	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	0.1	0.3	0.3	0.3	0.3
—	<i>Denmark</i>	—	—	—	—	—	—	—
—	<i>Ireland</i>	—	—	—	—	—	—	—
0.3	Total EUR 9	1.1	1.2	1.4	1.6	1.7	1.7	1.7

¹ Except coils - finished products.

COLD-REDUCED SHEET < 3 mm

Production

TABLE 54

Production and production potential by regions

million tonnes

Actual pro- duction 1976	Region	Production potential			Expected production potential			
		1974	1975	1976	1977	1978	1979	1980
1.5	Northern Germany	2.2	2.5	2.5	2.7	2.7	2.7	2.7
4.7	North Rhine/Westphalia ...	7.0	7.5	7.9	8.0	8.0	8.0	8.0
1.5	Southern Germany	2.8	2.8	2.8	2.8	2.8	2.8	2.8
—	Saar	—	—	—	—	—	—	—
7.7	<i>FR of Germany</i>	12.0	12.8	13.1	13.4	13.5	13.5	13.5
3.1	<i>Belgium</i>	4.5	4.8	4.9	4.9	5.0	5.1	5.1
3.0	Eastern France	3.5	3.7	3.8	3.8	3.8	3.8	3.8
2.7	Northern France	3.3	3.9	4.0	4.1	4.2	4.3	4.3
0.5	France - other areas	0.7	0.7	0.9	1.0	1.0	1.0	1.0
6.1	<i>France</i>	7.5	8.3	8.7	8.8	9.0	9.2	9.2
1.5	Italy - coastal areas	2.6	2.7	2.9	2.9	3.3	3.3	3.3
2.4	Italy - other areas	2.8	2.9	2.9	3.1	3.2	3.4	3.4
3.9	<i>Italy</i>	5.4	5.6	5.8	5.9	6.5	6.7	6.7
0.2	<i>Luxembourg</i>	0.4	0.4	0.4	0.4	0.4	0.4	0.4
1.7	<i>Netherlands</i>	2.3	2.4	2.7	2.7	2.8	2.9	3.0
22.8	Total EUR 6	32.1	34.3	35.6	36.2	37.3	37.8	37.9
0.4	Scotland	0.5	0.6	0.6	0.7	0.7	0.7	0.7
3.5	Wales	5.0	5.5	5.0	5.2	5.3	5.3	5.3
—	Northern England	0.1	0.0	0.1	0.1	0.1	0.1	0.1
—	England - other regions ...	—	—	—	—	—	—	—
3.9	<i>United Kingdom</i>	5.6	6.1	5.7	5.9	6.0	6.1	6.1
—	<i>Denmark</i>	—	—	—	—	—	—	—
—	<i>Ireland</i>	—	—	—	—	—	—	—
26.6	Total EUR 9	37.7	40.4	41.3	42.2	43.3	43.9	44.0

SECTIONS - TOTAL

Production

TABLE 55

Production and production potential by regions

million tonnes

Actual production 1976	Region	Production potential			Expected production potential			
		1974	1975	1976	1977	1978	1979	1980
1.7	Northern Germany	2.6	3.0	2.9	3.0	3.0	3.0	3.0
6.6	North Rhine/Westphalia ...	12.2	12.4	12.5	12.6	12.7	12.8	12.9
1.3	Southern Germany	2.0	2.1	2.2	2.2	2.3	2.4	2.4
2.4	Saar	4.1	4.7	4.6	4.7	4.7	4.7	4.8
12.0	<i>FR of Germany</i>	20.9	22.2	22.2	22.4	22.7	22.9	23.1
3.3	<i>Belgium</i>	6.8	6.7	6.3	5.9	6.1	6.3	6.8
4.7	Eastern France	7.2	7.2	7.4	7.7	7.6	7.8	7.8
1.3	Northern France	1.7	1.9	1.9	1.9	1.8	1.8	1.8
1.4	France - other areas	2.0	2.3	2.1	2.2	2.2	2.3	2.3
7.4	<i>France</i>	10.9	11.4	11.4	11.7	11.6	11.9	11.9
1.8	Italy - coastal areas	2.2	2.2	2.9	3.0	3.4	3.6	4.0
7.4	Italy - other areas	9.2	9.9	10.0	10.5	11.0	11.4	11.4
9.2	<i>Italy</i>	11.4	12.1	12.9	13.5	14.4	15.0	15.4
2.1	<i>Luxembourg</i>	3.4	3.6	4.0	4.0	4.0	4.0	4.0
0.6	<i>Netherlands</i>	0.9	0.9	0.9	1.0	1.0	1.0	1.0
34.6	Total EUR 6	54.3	56.9	57.7	58.5	59.8	61.2	62.3
0.2	Scotland	0.5	0.3	0.4	0.4	0.4	0.4	0.4
0.8	Wales	0.8	0.9	1.0	1.2	1.4	1.4	1.4
4.7	Northern England	6.2	6.2	6.3	6.8	7.1	7.3	7.3
1.8	England - other regions	2.5	2.4	2.4	2.4	2.3	2.4	2.4
7.4	<i>United Kingdom</i>	10.0	9.8	10.1	10.7	11.2	11.5	11.5
0.2	<i>Denmark</i>	0.3	0.3	0.3	0.3	0.3	0.3	0.3
0.1	<i>Ireland</i>	0.1	0.1	0.1	0.1	0.1	0.2	0.2
42.3	Total EUR 9	64.7	67.1	68.2	69.7	71.5	73.2	74.4

FLAT PRODUCTS ¹

Production

TABLE 56
Production and production potential by regions

million tonnes

Actual production 1976	Region	Production potential			Expected production potential			
		1974	1975	1976	1977	1978	1979	1980
2.3	Northern Germany	3.5	3.7	3.9	4.3	4.3	4.3	4.3
10.2	North Rhine/Westphalia ...	16.9	17.3	18.4	18.7	19.1	19.1	19.1
1.6	Southern Germany	2.8	2.9	2.9	2.9	2.9	2.9	2.9
0.8	Saar	2.2	2.2	2.3	2.6	2.6	2.6	2.6
14.9	<i>FR of Germany</i>	25.4	26.1	27.3	28.5	28.8	28.8	28.8
4.5	<i>Belgium</i>	7.3	7.6	7.7	7.8	7.9	8.2	8.4
4.6	Eastern France	6.2	6.4	6.5	6.4	6.4	6.5	6.5
3.6	Northern France	4.8	5.4	5.6	5.7	5.8	5.9	5.9
0.9	France - other areas	1.4	1.9	2.2	2.4	2.6	2.7	2.7
9.1	<i>France</i>	12.4	13.7	14.3	14.5	14.9	15.1	15.1
3.9	Italy - coastal areas	6.5	7.4	7.7	7.7	8.8	8.8	8.8
3.3	Italy - other areas	4.3	4.4	4.6	4.7	4.9	5.0	5.0
7.2	<i>Italy</i>	10.8	11.8	12.3	12.4	13.6	13.8	13.8
1.1	<i>Luxembourg</i>	1.8	1.9	1.9	1.9	1.9	1.9	1.9
2.2	<i>Netherlands</i>	3.4	3.5	3.8	3.9	4.1	4.2	4.3
39.0	Total EUR 6	61.1	64.6	67.4	69.0	71.3	71.9	72.3
0.7	Scotland	1.2	1.2	1.3	1.4	1.5	1.6	1.5
3.8	Wales	5.5	6.0	5.4	6.0	6.1	6.2	6.2
1.5	Northern England	2.1	1.9	2.2	2.2	2.4	2.4	2.5
1.0	England - other regions ...	1.4	1.5	1.4	1.4	1.5	1.4	1.4
7.1	<i>United Kingdom</i>	10.2	10.6	10.3	11.0	11.5	11.6	11.5
0.3	<i>Denmark</i>	0.2	0.3	0.5	0.6	0.6	0.6	0.6
—	<i>Ireland</i>	—	—	—	—	—	—	—
46.4	Total EUR 9	71.5	75.5	78.2	80.6	83.3	84.1	84.4

¹ Except coils - finished products.

TOTAL FINISHED ROLLED PRODUCTS ¹
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Production

TABLE 57

Production and production potential by regions

million tonnes

Actual production 1976	Region	Production potential			Expected production potential			
		1974	1975	1976	1977	1978	1979	1980
4.0	Northern Germany	6.1	6.8	6.8	7.3	7.3	7.3	7.3
16.8	North Rhine/Westphalia ...	29.1	29.7	30.8	31.3	31.7	31.9	32.0
2.8	Southern Germany	4.9	4.9	5.0	5.0	5.1	5.3	5.3
3.2	Saar	6.4	6.8	6.9	7.3	7.3	7.3	7.4
26.9	FR of Germany	46.5	48.2	49.6	50.9	51.5	51.8	52.0
7.8	Belgium	14.1	14.3	14.0	13.7	14.0	14.5	15.1
9.3	Eastern France	13.4	13.6	13.9	14.0	14.1	14.2	14.3
4.9	Northern France	6.5	7.3	7.4	7.5	7.6	7.7	7.8
2.3	France - other areas	3.3	4.2	4.4	4.5	4.9	5.0	5.0
16.5	France	23.2	25.1	25.7	26.1	26.5	27.0	27.1
5.7	Italy - coastal areas	8.7	9.7	10.6	10.8	12.1	12.4	12.7
10.7	Italy - other areas	13.5	14.3	14.6	15.2	15.9	16.4	16.4
16.5	Italy	22.2	24.0	25.2	25.9	28.0	28.8	29.2
3.2	Luxembourg	5.2	5.5	5.9	5.9	5.9	5.9	5.9
2.8	Netherlands	4.3	4.4	4.8	4.9	5.1	5.2	5.3
73.6	Total EUR 6	115.5	121.5	125.1	127.4	131.0	133.1	134.6
0.9	Scotland	1.7	1.5	1.7	1.8	1.9	2.0	1.9
4.5	Wales	6.3	6.9	6.5	7.2	7.5	7.6	7.6
6.2	Northern England	8.3	8.1	8.4	8.9	9.5	9.7	9.7
2.8	England - other regions ...	3.9	3.9	3.8	3.8	3.8	3.8	3.8
14.4	United Kingdom	20.2	20.4	20.3	21.7	22.7	23.1	23.1
0.5	Denmark	0.5	0.6	0.8	0.9	0.9	0.9	0.9
0.1	Ireland	—	0.1	0.1	0.1	0.1	0.2	0.2
88.6	Total EUR 9	136.2	142.6	146.4	150.2	154.8	157.3	158.8

¹ Except coils - finished products.

RATE OF UTILIZATION OF PRODUCTION POTENTIAL
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Production

TABLE 58

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

Products	Actual production			Production potential					
	1960 (million tonnes)	Average cumulative annual movement %	1976 (million tonnes)	1972 (million tonnes)	Average cumulative annual movement %	1976 (million tonnes)	Average cumulative annual movement %	1980 (million tonnes)	
Heavy and light sections, incl. tube rounds and squares	Eur 6	21.9	1.5	25.9	38.7	3.1	43.8	1.5	46.4
	Eur 9	28.4	1.6	31.5	*	*	51.6	1.6	55.0
Wire rod	Eur 6	5.4	3.8	8.4	11.3	5.5	14.0	3.4	16.0
	Eur 9	6.9	3.3	10.4	*	*	16.7	3.8	19.4
Total sections	Eur 6	27.3	2.4	34.3	50.0	3.7	57.8	1.9	62.3
	Eur 9	35.3	2.1	42.0	*	*	68.3	2.2	74.4
Hoop strip for tubemaking	Eur 6	4.7	2.1	5.8	8.6	4.1	10.1	0.7	10.4
	Eur 9	6.5	1.0	7.1	*	*	11.9	0.8	12.3
Plate of 3 mm and over ¹	Eur 6	7.8	3.6	10.2	18.3	2.9	20.5	2.4	22.5
	Eur 9	10.9	2.5	12.4	*	*	23.7	2.6	26.3
Hot-rolled sheet under 3 mm ¹	Eur 6	3.0	0.8	0.2	1.0	6.8	1.3	3.6	1.5
	Eur 9	*	*	0.3	*	*	1.4	5.0	1.7
Cold-rolled sheet under 3 mm ¹ ..	Eur 6	7.4	7.9	22.8	29.6	4.6	35.5	1.6	37.8
	Eur 9	*	*	26.6	*	*	41.2	1.6	43.9
Total flats	Eur 6	22.9	4.6	39.0	57.5	4.0	67.3	1.8	72.2
	Eur 9	31.9	4.4	46.4	*	*	78.1	1.9	84.3
Total finished rolled products ¹	Eur 6	50.2	3.4	73.3	107.5	3.9	125.1	2.1	134.5
	Eur 9	67.2	2.7	88.3	*	*	146.4	2.0	158.7
Coils-finished products	Eur 6	*	*	7.7	8.6	10.0	12.6	2.1	13.7
	Eur 9	*	*	8.6	*	*	14.1	2.9	15.8
Grand total	Eur 6	*	*	81.0	116.1	4.4	137.7	1.9	148.2
	Eur 9	*	*	96.9	*	*	160.5	2.1	174.5

¹ Exclusive of coils rating as end products.
* Figures not available.

RATE OF UTILIZATION OF PRODUCTION POTENTIAL
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Production

TABLE 59
Movement by stages in production since 1960¹

Sectors	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976
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
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
Finished products ² .	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

¹ Up to and including 1972, Community in its original form only.

² Except coils finished products.

**RATE OF UTILIZATION
OF PRODUCTION POTENTIAL**

TABLE 60

By stages of production and countries 1976

Production

in %

Country	Pig iron	Basic Bessemer	OBM. LWS	Open hearth	Electric	LD, Kaldo and others	Crude steel total	Continuous casting	Coils	Heavy sections	Light sections	Wire rod	Hoop and skip	Plate ≥ 3 mm	Cold-reduced sheet < 3 mm	Finished rolled products Total (excl. coils, finished products)
FR of Germany	64.2	84.8	59.2	70.0	73.0	62.1	64.5	62.5	69.8	55.4	51.8	55.9	62.4	46.1	58.5	54.2
Belgium.....	62.5	50.1	47.7	38.0	67.2	70.5	65.6	48.6	65.5	70.7	39.8	70.9	47.8	51.9	63.5	55.4
France	69.1	65.7	73.5	70.7	76.0	68.1	69.8	71.4	72.3	71.6	64.6	60.4	59.7	52.3	70.3	64.4
Italy	68.3	—	—	61.6	75.0	66.5	69.7	64.4	56.4	53.1	77.6	66.8	48.6	55.7	68.0	65.4
Luxembourg.....	54.8	27.5	73.4	—	70.8	63.3	55.5	—	66.2	51.1	49.3	66.8	54.2	60.9	61.8	53.9
Netherlands.....	68.2	—	—	13.6	86.4	67.0	67.2	—	64.0	70.0	57.5	64.3	46.4	45.8	63.3	58.7
Total EUR 6	65.4	56.1	63.1	67.1	74.6	65.3	66.4	64.0	66.5	59.2	60.2	60.3	57.3	49.9	64.0	58.8
United Kingdom	74.4	—	—	69.7	86.5	73.8	76.4	65.3	78.0	68.9	75.1	74.4	72.6	68.1	67.3	70.9
Denmark	—	—	—	72.3	49.3	—	59.4	48.0	—	72.7	64.8	100.0	—	63.0	—	63.9
Ireland	—	—	—	—	63.7	—	63.7	—	—	100.0	54.5	—	—	—	—	61.1
Total EUR 9	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 1977 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.