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GENERAL OBJECTIVES STEEL 1990

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INTRODUCTION

I. The General Objectives Steel 1990 for the Community of Ten have had to be drawn up in circumstances which were quite different from those under which preceding programs and forecasts were established. The restructuring of the steel industry in the European Community is in full swing following the political decisions taken at Elsingor in 1982. In addition, the 1990 horizon must be viewed in the light of the enlargement of the Community with Spain and Portugal, which might accentuate some of the disequilibria appearing in the following chapters; the restructuring of the steel industry in these countries therefore becomes an important issue.

The crisis measures which made it possible to embark on the restructuring process without upsetting the market have done the job they were supposed to do and should give the Community steel industry a better starting position for its future development.

However, as the restructuring process still goes on, it is difficult to paint an exact picture of our steel industry in 1990, and to assess correctly the underlying trends of supply and demand, let alone the strategic choices which firms may make, when market controls are lifted.

Under these circumstances, the Community should carefully analyse the financial viability prospects of steel production companies in the light of the current restructuring plans.

II. It should be pointed out straight away that the Commission can only look at the steel sector in a global way, and that it can not consider separate policies for individual firms. The Commission is perfectly aware that the Community averages may be masking considerable discrepancies between different companies : productivity, and hence competitiveness will have developed in different ways. There is equally a diverging trend between production capacities and demand, and therefore the Commission will have to recognize that the global picture that appears at present for the period after 1990 continues to be characterized by an

important capacity surplus, and this not-withstanding the restructuring effort which will have been made until the end of this year.

Even on the fairly optimistic assumption that internal consumption of steel, and exports, will remain relatively stable in the medium term compared with 1984, this surplus is likely to remain a structural factor in the steel industry in the European Community. If we were to accept this structural surplus and the resulting pressure on prices, it would weigh heavily on the strategies of the steel companies, which, moreover, will have to make significant efforts to increase their level of competitiveness. Although it is impossible at present to pinpoint the surplus capacity, the steel industry should prepare itself to see market forces forcing it into further capacity reductions in the years ahead.

In this connection, each firm has to ascertain that its production structures can still be regarded as being in line with the foreseeable developments of steel production technology and trends in the structure of supply and demand. The same remark applies to the structures and conditions of supply, in particular in the light of certain warning signals from the scrap market, which could call into question investment options which were valid in the past, as well as to the competition of substitution materials on the demand side.

For the assessment of both supply and demand, it should be stressed that there is considerable uncertainty, due the unforeseeable behavior of exchange rates, concerning the foreign trade in steel and also for the raw material supply. Continuing changes, in both a favorable and unfavorable way,of the dollar rate can not be excluded in the future.

Even if exports could be maintained in the immediate future at present levels, this is likely to prove increasingly difficult to achieve, firstly for ordinary steels, given that production capacities in newly industrialised third-world countries are penetrating world markets. This only increases the necessity for permanent research into competitiveness in the markets. Besides,

changes are possible in the respective parts of flat and long products according to the geographical distribution of exports. In particular long products are situated in a very competitive segment of the market and are very susceptible to the slightest macroeconomic variations.

There remains, in market terms, the permanent threat of a strong advance in the use of substitute products. The steel industry can also counteract this, but on condition that it mobilises sufficient means to invest in R & D and that prices are maintained at a reasonable level.

Nevertheless, this effort, which can only be undertaken by those firms with sufficient profitability, can -partly- be strenghtened by official support measures in the field of research aid and by direct aid for steel consumption (loans under art. 54 for steel users). Anyway, the preservation of traditional markets will require that producers change their strategy from essentially being quantity-oriented towards a strategy of products having a higher added-value.

III. Even if the macroeconomic indicators are indicating moderate growth and increasing investment in industry, these prospects do not apply to all sectors, and in particular not to the steel industry.

There is the fact that the reduction in specific consumption is tending to cancel out the growth which is perceptible in products with a high steel content. This phenomenon was not always fully apparent until recently because of the gross reduction in steel consumption due to the economic crisis. The crisis and the excess capacity to which it gave rise merely served to conceal a much more basic problem, in the long run, i.e. the permanent change in the pattern of consumption and of steel processing technology.

While it is true that demand is increasingly moving towards quality steel products with a higher added value, the greater financial return this gives the steel industry is not always enough to offset the financial losses resulting from structural overcapacity.

However, the constant improvement in the quality of our steel products is a decisive factor in the ability of the European Community steel industry to withstand international competition. Furthermore, such a "quality label" can also be atttached to manufactured products and further improve the image of Community products on non-Community markets. Lastly, it is also a factor which may work to the benefit of our processing industries on condition, however, that as a result of productivity our steel products remain at a price level which renders them commercially preferable to imported products.

IV. If the European steel industry is to survive in these difficult circumstances, and in the face of international competition, the companies should return definitively to viability - from both a financial and a technical point of view.

The Community market cannot continue to be relatively sheltered from competition from non-Community producers, as was the case during the period of acute crisis, and it is urgently necessary that our industry recognizes that its market share depends essentially on the quality and the price attractiveness of its supply.

This aspect is equally valid in internal and export markets, which have in some ways speculative characteristics. The EEC-steel industry must therefore permanently adapt the level and the flows of its exports to ever changing conditions; it should therefore also consider carefully whether its offer remains competitive from a qualitative point of view.

The link between the Community's ability to preserve its internal market and its ability to maintain a worthwhile level of exports is not only determined by its direct exports : steel is a starting material for many european manufactured products the steel content of which remains high (machinery, vehicles, ...). The Commission has already emphasized this point in earlier General Objectives, and it will also be considered in later sections.

Moreover, the pressure of imports (and particularly semi-finished products) is certainly going to grow because the steel problem

continues to exist in all industrialised countries and is forcing their steel industry to increase its export efforts. Only certain third countries (like Japan) have begun their structural policy well before the others and far from resting on their laurels, they are pursuing this policy in a very motivated fashion. The effects of these policies have to be faced in all markets.

V. Leaving aside the figures and projections, not withstanding their information value for all those concerned with the development of the sector (producers,workers,steel users, bankers, government...), it must be stressed that the future of the steel industry, even if it depends on a political will to set and, above all, pursue common European objectives in this sector in a logical manner, is largely dependent on the economic conditions under which the companies must operate in the different Member States and on the quality of the companies' management.

Against this background, each common action should focus on the following goals :

(a) the steel industry in the European Community must be technologically up to date, capable of ensuring prices as low as possible and meeting the requirements of steel-using industries in the Community in the best possible way;

(b) it must not be too big; otherwise it would not be sufficiently flexible to cope with cyclical fluctuations without losing financial viability or to provide an effective response to at times sudden changes in the qualitative pattern of demand;

(c) the position which the Community steel industry strives for in world trade, will have to be compatible with the need for financial viability: each company will have to plan, consequently, its level of productive capacity for the purpose of serving permanently world markets and at acceptable risk. This has to proceed in the light of the experience that high world demand was generally concentrated in short periods, separated by long intermediate periods.

These objectives are realistic from a technical and economic point of view. The conservation of a competitive steel industry also makes a direct constribution to furthering a strong and competitive European transformation industry.

VI. However, it is not enough to set policy objectives; it must be borne in mind that if these objectives are to be attained there are a number of preconditions.

The first, and not the least important, is that the concept of the single market should not only be safeguarded but also re-established. It would be a contradiction in terms (and a decline) if the majority of firms relied on the domestic market, and considered trade with the other Community Member States as being of secondary importance - like world exports.

Such a renationalisation attitude would result in behaviour and structures incapable of displaying a joint front to international competition, even on our internal market.

The problem posed by the remaining structural over-capacity must be carefully analysed. It would be a shame and politically inconsistent not to see through to the end of the structure policy begun so courageously three years ago. The effort made till now, (the first effects of which are starting to be felt already), has greatly clarified the situation and opened up valuable opportunities. We must continue to finalize conditions which will enable the firms to pursue the restructuring movement and subsequently, search for optimum productivity.

At the same time, it is of fundamental importance that the Community should continue its specific action to counteract the serious social consequences of restructuring. It is unthinkable that the efforts to solve the crisis in the steel industry should be a success as far as industrial policy is concerned, but a failure socially. Because the Community must follow up the restructuring in the steel industry, it is essential that it has the means to face up to the serious social problems which arise from it, and that it puts in place effective machinery to achieve its objectives in this field.

Therefore, more so than in the past, there will be a need to coordinate the instruments of social and regional reconversion. Restructuring measures will cause their social effects to be felt for many years to come. A productive steel industry can remain in many cases the centre of a regional economy with all the problems of direct and indirect employment common to regional monostructures. Given that the steel industries' problems are likely to continue to hit the steel "bassins", the more they have a monosectorial industrial structure, the Commission will reinforce its efforts to improve the functioning and effectiveness of the existing instruments.

Our policy must therefore continue to be based on a Community-wide strategy transcending the geographical boundaries of the individual Member States. There is no alternative if duplication of effort is to be avoided in the various stages of the production process and the management of our structures is to be improved.

This is the way in which we should emerge from the present period which is dominated by the crisis measures and hence by the urgent need for equitable burden-sharing with a view to making coordinated progress towards an all-round improvement.

It is obvious that the five-year forecast for a "heavy" sector, cannot appear satisfactory. On the other hand, five years are a lot in a period which is dominated essentially by intensely speculative movements (e.g. the rate of the U.S.$), by numerous uncertainties and finally by the weakness of the macroeconomic growth, the essential of which is concentrated in precision techniques and the resulting services.

VII. Forecasts for the period up to 1990 are based on the assumption that although gradual progress will be made in the use of advanced technology in our industry (as regards both the means of production and finished products) this will not disrupt the production process to any significant extent.

However, this will not necessarily be the case after 1990. Both

the macroeconomic factors and the technological evolution are hard to predict.

But it is also difficult at present to assess exactly how these parameters will affect matters: for example, it is possible that regional differentiations will occur.

The biggest uncertainties lie however within the field of substitution materials for steels, from which it is not unreasonable to expect surprises in view of the worldwide research and development efforts on new materials.

Based on certain elements known at present, one can imagine that:

- the production of steel in developing countries will grow to meet the needs of the local market, at least for ordinary steel of a low added value;

- other large countries, for example China, will join the group of industrialised countries, at least as far as primary products, i.e. steel, are concerned;

- substitute products will be used especially where they allow direct or indirect savings (examples: cars, electrical appliances).

One of the scenarios with which one is therefore very likely confronted - but according to the economic, monetary, technological and even socio-political evolution deviating scenarios can be conceived - would be looking as follows:

- the European steel industry would depend for the most part on the market of the Community;

- it would have to share this internal market, in many user sectors, with other products; it is up to the steel industry to be price-competitive and to offer attractive european products;

- export would be the exclusive domaine of sophisticated products

and only then when prices can sustain the international competition.

The Commission consequently stresses the link there is between the competitive position of the steel industry and the development of steel production within the Community after 1990.

It can see growth prospects only for those steelmaking companies, which will have made a permanent restructuring effort, and which will have adjusted to the market trends, probably towards a more intensive production of higher value products.

The Commission has therefore the intention to report periodically on the Community market evolution and on exports, with an aim at comparing its forecast with the effective situation and at detecting rapidly any new trend. Within this context, particular attention will be paid to the technical evolution in the main steel using sectors, and to the competitiveness of the steel industry on world markets.

VIII. In presenting the "General Objectives 1990", the Commission wishes to distinguish from this document, the concrete decisions it will have to take in the near future, in view of the expiry, at the end of 1985, of a significant part of the anti-crisis measures.
The General Objectives reflect essentially the macroeconomic framework within which the European steel industry will have to determine its medium-term industrial strategy. In its final version, after the opinion of the ECSC Consultative Committee will have been received, this text will form the background for the positions the Commission will adopt on accompanying measures at a Community level beyond 1985, in particular in the following areas: market, prices, structures, social and regional reconversion, external trade.

CHAPTER I

THE MEDIUM-TERM DEVELOPMENT OF THE STEEL MARKET IN THE COMMUNITY

1. Survey of past trends

The profound crisis which the Community steel industry has been going through since the recession in autumn 1980 following the general recession unleashed by the second oil shock of 1979-80, eased slightly towards the end of 1983. After three consecutive years of contracting markets, demand recovered strongly in 1983/84. Together with the favourable conditions for steel exports and the replenishment of stocks, this produced an unexpected 10% rise in Community steel production in 1984. However, this recovery mainly benefited products with a higher added value, such as coated sheet, and more in particular products not covered by the production quota system.

Seen in a longer perspective, however, the recovery in 1984 is really more of a short-term peak in a fundamentally downward curve, and the situation is hence very similar to that in 1979.

Comparison of macroeconomic trends over the last twenty years - during which period there have been four separate cycles - with some specific steel market indicators shows the main features of the structural decline characterizing the steel industry. There are, however, a number of factors which have combined to bring about the progressive divorce between economic growth (measured in GDP) and apparent steel consumption during this period. Analysis of this difference allows each factor to be seen in perspective, and in this way projections based on crude extrapolation from too general trends can be avoided.

Macroeconomic context of the Community
steel market (EUR-9)
(mean annual growth in %)

PERIOD	GROSS DOMESTIC PRODUCT	GROSS FIXED CAPITAL FORMATION	OVERALL INDUSTRIAL PRODUCTION	PRODUCTION IN STEEL PROCESSING SECTORS (NACE 31-36)	APPARENT STEEL CONSUMPTION (1)
1965-70	+ 4.4	+ 4.8	+ 4.9	+ 4.6	+ 4.2
1971-74	+ 3.8	+ 1.9	+ 3.6	+ 2.5	+ 0.7
1975-79	+ 2.6	+ 1.0	+ 2.0	+ 1.5	- 0.8
1980-84	+ 0.9	- 0.3	- 0.1	+ 0.1	- 2

(1) including first-stage steel processing products (non-ECSC).

It is immediately apparent from the above table that, for at least ten years, apparent steel consumption has been falling by about 3% a year compared with GDP.

From one cycle to the next, growth in the Community economy has been slowing down, whereas investment's share of GDP (gross fixed capital formation-GFCF) has remained pretty well constant (the respective averages for the four cycles being 22%, 22.3%, 20.6% and 19.4%). In particular, public investment declined significantly during recent years.

Since the mid-1970s, GDP and industrial production have clearly grown at different rates; this is explained by the fact that economic growth has been centred in tertiary activities and the public sector.

Steel's customer industries grew more slowly, initially, than overall industrial production, and fell back into stagnation in the 1980s; this is largely explained by the fact that their activities are concentrated in heavy equipment and construction sectors, which were particularly affected by the lack of investment.

The main factor behind the structural decline of the steel market emerges clearly, however, when one compares the production (in volume terms) of the steel-processing sectors with the curve for steel demand created by those sectors. The phenomenon of declining specific consumption of steel has cut steel's traditional steel markets in advanced industrial economies such as the Community by nearly 2% a year - and in the United States this trend has been even more marked than in Europe. A special section is devoted to this crucial phenomenon (cfr. infra).

If it is to give sufficient expression to the economic and technological factors resulting from the production activities of the processing industries, any forecast of Community demand for steel, must examine the following aspects of the future industrial environment :

- the extent and nature of macroeconomic growth;
- the development curve of the main steel-processing industries, with allowance being made for the macroeconomic environment;
- the demand for steel products emanating from those sectors, taking account of possible changes in the structure of demand and production technology.

2. The prospects for growth are still modest, in spite of an upswing in industrial investment

The forecasts for 1985 show that GDP growth will 2 1/2 % in volume terms - confirmation that the Community's economy began to recover in 1984 after three years of recession.

As regards internal demand, consumption, both private and public, will go up only slowly, whereas capital formation should be more vigorous, although the latter's rise depends essentially on private industrial

investment rather than public investment or housing construction. As in 1984, the increase in GDP will result largely from an improvement in the Community's trade balance, made possible by growth in world trade and in US imports in particular (the contribution of Japanese imports to the development of world imports remaining significantly less).

For subsequent years, it is essential that the growth of the Community's economy should be increasingly supported by internal demand factors - without prejudice to the adjustment and stabilization policies that are now well under way - especially as the growth in world trade may peter out as a result of a possible change of course by the US economy.

Against this background, one encouraging feature of the Community economy has been the recovery in industrial investment, which should continue beyond 1985, if manufacturers' intentions actually come to pass. The revival in industrial investment can be explained, it seems, by a combination of four factors: the ageing of the Community's fixed capital stock in recent years; the consequent technological need for plant and equipment to be replaced; improved profitability; and a greater use of capacity in many industries. As regards other types of investment, however, housing construction can pick up only slowly as interest rates come down, and investment opportunities in the public sector will be very limited.

It follows that overall growth in the second half of the 1980s will be modest, with a more dynamic investment component gradually resuming its traditional level of 20% of GDP - a significant contrast with recent years during which the investment climate has deteriorated.

However, uncertainties of an international nature (e.g. a sudden devaluation of the US dollar or a drastic reduction in US imports) may jeopardize the level of predicted medium-term growth and the growth rates set out below are therefore only tentative. The scenario assumes that the economic policies currently applied in the various Member States will be continued, especially with respect to the encouragement of investment.

Medium-term projection for the Community economy (1)

(annual average growth in %)

VARIABLE	1981-'83	1984	1985	1986 and beyond (1)
International assumptions				
Real price of crude oil in US$	- 1,1	- 0,1	- 0,1	0,0
Imports (in volumeterms)				
- non-member countries	2,6	10,8	5,6	5,0
- of which USA	6,3	26,4	9,4	4,6
ECU/$ exchange rate	13,8	12,7	3,5	- 1,5
Long- term interest rates in the USA (a)	12,0	12,5	13,5	13,0
International economic policy assumption (EUR-10)				
Public consumption	1,4	1,1	1,1	0,7
Public investment	- 2,5	2,0	0,6	0,9
Housing construction (private + public)	- 2,4	1,4	0,5	1,9
Growth (EUR-10)				
GDP	0,4	2,4	2,4	2,5
Private consumption	0,7	1,1	1,5	2,1
GFCF	- 2,1	2,1	3,0	3,4
(Share of GFCF in GDP) (a)	(19,1)	(18,7)	(19,0	(20)
Exports	2,3	6,9	5,7	4,9
Imports	0,8	6,2	4,5	3,9
Long-term interest rates (a)	13,7	11,2	10,8	10,8

(1) 1986-89, Commission forecasts (COMET-model), january 1985.

(a) Absolute percentage

3. The foreseeable growth pattern would allow most sectors to reach better production levels than at the start of the decade

The cessation of growth that occurred during the period 1981 to 1983 had a considerable impact on almost all steel-processing sectors, beginning with plant and machinery manufacturers and the construction industry. By contrast, the manufacture of transport equipment and electrical engineering provided notable exceptions to the downward or stagnating trends, since private consumption performed relatively well.

During 1984, these sectors managed to raise production overall, with the exception of means of transport, which experienced the effects of social conflicts in the Federal Republic of Germany.

In a climate of investment-led growth, most of the steel-processing sectors should be able to sustain growth during the second half of the 1980s, but at rates which will not suffice in all cases to offset the effects of a still-declining specific consumption of steel. It can be expected, therefore, that between now and 1990 steel consumption will not exceed the level it reached in 1984.

The sectors which should benefit directly from this favourable climate for industrial investment are mechanical engineering and, potentially, structural steel work. As regards the former, it is almost certain that unit weight reductions will prevent the increase in activity from causing a corresponding increase in the steel tonnage produced: with many types of machine, a significant increase can be observed in performance per unit of weight, partly as a result of new technology, e.g. digital controls in place of heavier, mechanical systems.

The size of the increase in structural steelwork - the sector depends primarily on the construction of industrial and commercial buildings - will depend on the sector's ability to increase its penetration of the building market (to the detriment of concrete, with the emphasis on shorter building times) and on the impact which the expansion of investment will have on demand for this type of construction.

Generally speaking, investment will be aimed at the rationalization rather than the expansion of production equipment, which would seem to exclude a heavy-industry sector such as a boilermaking from receiving its full share of such investment.
Finally, the metal articles industry, which in the past has been particularly responsive to the expansion of investment, could be stimulated, provided that new materials do not result in the excessive erosion of markets in this sector (e.g. springs made of composite materials).

In building and civil engineering there will be no further contraction below the level reached in 1983 (1984 already saw this level stabilize). Housing construction, however, should not exceed the levels dictated by demographic and purchase power limitations. However, the expected recovery will not be greater than that in housing construction, given the continuing depressed condition of the civil engineering sector. Obviously, projects such as the possible construction of a Channel tunnel or any other project which might be undertaken within the framework of a coordinated European infrastucture policy, would have a considerable impact on activity and thus on steel consumption.

The same is probably true of shipbuilding, where international forecasts indicate a recovery worldwide to 1981 and 1982 levels towards the end of the decade, but with major changes in the production pattern (more complex, special-purpose vessels).

The sectors which produce mainly consumer durables, i.e. car manufacturing and electrical engineering, will continue to provide a fairly firm base for private-consumption demand. As regards the last-mentioned of these, it should be stressed that only products with a low steel content (audiovisual and information processing equipment) are the cause of this increase, whereas products of interest to the steel industry generally remain at the same level (household electricals, with the exception of certain items such as dishwashers and microwave ovens).

The cans and metal boxes sector, which is competing hard with rival forms of packaging, could maintain its level, or even register a slight increase (compared with 1981) as a result of expansion in certain sections of the market (e.g. pet foods).

The "other users" sectors, where demand primarily reflects investment for replacement by, say, the extractive industries, the railways and the steel industry itself - as well as those sectors which are difficult to pin down such as agriculture or precision engineering - do not seem to contain any major sections where demand can be expected to increase (with the possible exception of high-speed railway engineering).

The growth curve for the manufacture of steel tubes and the other preliminary processing sectors - which lie between the abovementioned "end - user" sectors and the steel industry proper - should not differ from that for end-user sectors, especially as certain products (e.g. castings) are also liable to be affected by the reduction in specific consumption. Certain subsectors such as wire-drawing, cold-forming and deepdrawing will very probably maintain their level of production, however, or even increase it, since their products can be substituted for less elaborate (ECSC) steel products in a great many uses. This is not a general trend, however, and must be seen in the context of downward trends for specific consumption, including sometimes the replacement of one steel product with another (see below).
Finally, the production of steel tubes should remain stable at 1982-83 production levels, after the export boom in 1981.

Development of the main steel processing sectors

(1981 production = 100)

	TYPE OF INDEX (1)	YEAR 1975	1980	1981	1982	1983e	1984e	1990
Mechanical engineering	A	97	102	100	96	93	95	99-103
	(P)	(101)	(103)	(100)	(96)	(92)	(93)	92- 96
Electrical engineering	A	85	103	100	102	104	112	122-125
Shipbuilding	GRT	355	72	100	123	99	..	87-109
Means of transport	N	96	110	100	103	106	100	110
Structural steelwork	P	..	(104)	(100)	(96)	(92)	(93)	109-115
Building-civil engineering	A	..	105	100	96	95	95	106
Metal articles	A	96	105	100	97	94	95	100-112
Cans-metal boxes	P	89	96	100	..	..	..	103-110
Boilermaking	P	107	106	100	100	..	..	90-100
Miscellaneous	-	..	..	..	..	..	..	..
Total final processing (NACE 31-36)	A	89	102	100	99	99	102	103-108
tubes	P	90	89	100	89	84	..	92- 95
Other preliminary processing	P	101	109	100	94	..	..	104-109

e estimate

(1) P = Production weight

A = Activity index (production value or value added at constant prices)

GRT = Gross registered tonnage of merchant vessels launched

N = Number of cars

Note : activity forecasts for 1990 have been obtained either from sector-specific studies (shipbuilding, means of transport, building), or by taking account of the elasticity of a given sector's activity with respect to changes in the relevant macro-economic indicators (GDP, GFCF...). The range for activity in 1990 presented in the above table reflects in part the problems associated with the quantification of such elastcities.

4. Reductions in specific consumption too big to allow increases in demand

At sector level, the continuing decline in the amount of steel needed to make a given product - generally referred to as the reduction in specific consumption - principally involves the following :

(i) making the final product lighter by improved design (increasingly CAD) or by using digital instead of mechanical controls;

(ii) making the product lighter by replacing certain steels with others with for instance a better quality: weight ratio (e.g. high-strength sheet, coated sheet);

(iii) substitution by other materials (aluminium, synthetic or composite materials, glass etc);

(iv) reducing the amount of processing scrap by improving the productivity of machinery (robots, lasers, etc) thus reducing (a) the purchasing requirement for a given type of production and (b) the amount of bad work.

It should be clear, that to a considerable extent these tendencies result from continuous product or process improvements sought by the steel processing industries, in order to maintain or increase its competitiveness in world markets.

To this list of factors should be added the reduction in apparent specific consumption resulting from the fact that certain sectors are changing their output structure, in response to the market, and moving towards products with a lower steel content (in electrical engineering, for instance, there is a division between household electrical appliances and the rest of the sector), which is also reflected in the volume of steel products that needs to be purchased by the sector as a whole.

If one looks at the trend for specific consumption by sector, it will be seen that although nearly all sectors are affected by this phenomenon, it is greatest in ECSC products, whereas non-ECSC products (tubes and other preliminary processing) are much less affected.

In certain cases, the latter constitute alternatives for ECSC products, or make it possible to economize on base materials: thus, drawn wire is in competition with wire rod or merchant bars, tubes and cold formed shapes can be substituted for merchant bars and rolled shapes, and deep-drawn articles can be substituted for castings in certain applications.

As regards ECSC products, the reductions in specific consumption have affected merchant steels (even in the building sector) and semi-finished products in particular, whereas flat products have on the whole better resisted on account of the expansion in the specific use of coated sheet. This shows that the steel industry, by adapting supply to requirements and the problems which the user has to face, can control this phenomenon to a certain extent by concentrating on quality.

Annual reductions in specific consumption
observed during the period 1975-1982 (%)

SECTOR	ECSC PRODUCTS	PRELIMINARY PROCESSING PRODUCTS (INCL.TUBES)
Mechanical engineering	- 2,1	0
Electrical engineering	- 5,5	- 1,5
Shipbuilding	0	+ 17 (a)
Means of transport	- 3,0	+ 1,5
Structural steelwork	- 3,5	- 1,5
Building-civil engineering	- 1,5	- 0,7
Metal goods	- 0,7	+ 0,2
Cans-metal boxes	0	0
Boilermaking	- 2,3	0
Miscellaneous	-	-
Total	- 2,0	+ 0,4

(a) Small quantities only involved

Future trends of specific consumption

In the years ahead, there is generally no reason to suppose that these phenomena will diminish, although the causes underlying the trends may change. For instance, greater weight may be given to the influence of new production technologies which will reduce processing scrap, whereas in certain cases (e.g. motor vehicles and household electricals) product substitution will subside for a while for lack of substantial investment in this area in recent years. Whether this will prove true, depends however on a lot of factors which are generally extremely difficult to quantify, such as the price of steel compared to alternative materials, or the quality of the latter - many of them are in an experimental or trial phase.

The main points about specific consumption in the various sectors between now and 1990 can be summarized as follows:

- mechanical engineering: products become lighter as a result of improved design (CAD), the use of high-quality or special steels, or the replacement of steel with other products; improved steel yields in the manufacture of machinery;

- electrical engineering: the replacement of steel in household electrical goods seems to have peaked. It should be reckoned therefore that ECSC steels will continue to decline by about 3% a year, a trend which reflects the fact that as regards the whole sector's output the production of household electricals will stagnate (compare this with a decline of 5.5% a year in the period from 1975 to 1982);

- shipbuilding: given that - under the pressure of world competition - production is shifting towards more specialized vessels with in general a high steel/grt ratio, specific consumption is not likely to fall. Substitution will not be significant either;

- means of transport (including motor vehicles): the tendency towards larger-volume cars could partly offset the effect of substituting other materials for steel, the scale of which will remain limited provisionally. It is reckoned that the decline in the specific consumption of ECSC steels will temporarily slow to 1% a year (with an increase in the use of coated sheet);

- structural steelwork: certain merchant steels will be replaced by cold-formed sections (non-ECSC), and coated sheets will increase their share of the market; steel will undergo replacement by composite materials and wood to improve fire-protection and insulation;

- building and civil engineering: renovation will increase, but civil engineering will decline, resulting in an overall reduction in the use of steel in this activity;

- metal processing: lighter products (use of quality or special steels) and less process waste (from using lasers and robots, for instance);

- cans and metal boxes: possible reductions in thickness; better quality steels may replace aluminium slightly in two-piece cans;

- boilermaking: similar trend to that for structural steelwork;

- other uses: same characteristics as structural steelwork or mechanical engineering.

5. Projection of apparent consumption in 1990

In view of the above trends and the uncertainties associated with sectoral activities and specific consumption - especially in electrical engineering and motor vehicles, where the expected slowdown runs counter to the historical trends - it is essential to provide a sufficiently wide range for internal demand in the year 1990. The limits of the range will be more or less contained between the 1983 and 1984 levels. Possible increases in demand are most likely in the flat products sector, notably coated sheets. As for heavy sections, the anticipated increase is the induced effect of the increase in structural steelwork activity.

(Note: the range for real steel consumption in 1990 contained in the table below has been obtained on the basis of the following factors:

- the sectoral breakdown of steel consumption during the reference year 1981, which is the most recent year for which steel consumption by sector within the Community can be determined with sufficient precision;

- the range forecast for the development of sectoral activities (see the table in section 3 of this chapter), which in turn takes account of a degree of uncertainty at macroeconomic level;

- the expected reductions in specific steel consumption : these match broadly with the effective reductions observed during the reference period 1975-1982; the historical trends have been adjusted - because their relevance for the future is questionable - in the case of vehicle construction (substitution), electric equipment (production structure), and building (part of renovation and public works in sectoral activity).

There results, globally, a reduction of specific consumption (ECSC-steels) of 1.4% per annum in the high case, against -2% per year in the low case.)

REAL CONSUMPTION OF ECSC PRODUCTS IN THE COMMUNITY BY SECTOR (EUR-10)

(million tonnes)

SECTOR	1981				1990 HIGH ASSUMPTION				1990 LOW ASSUMPTION			
	Semis and liquid steel	Long prod.	Flat prod.	TOTAL	Semis and liquid steel	Long prod.	Flat prod.	TOTAL	Semis and liquid steel	Long prod.	Flat prod.	TOTAL
Steel foundries, deep drawing, cutting	1,4	-	1,4	2,8	0,8	-	1,5	2,4	0,8	-	1,5	2,3
Forging & dropforging	3,4	1,0	0,1	4,5	2,8	1,1	0,2	4,0	2,7	1,0	0,2	3,9
Extrusion & wiredrawing	-	6,9	-	7,0	0,1	7,7	-	7,8	0,1	7,3	-	7,5
Cold rolling and forming	-	-	4,5	4,5	-	-	4,8	4,8	-	-	4,6	4,6
Tubes	5,6	-	10,0	15,6	4,9	-	9,8	14,7	4,8	-	9,5	14,3
Mechanical engineering (excl.electrical)	0,1	2,2	4,2	6,5	-	1,5	3,7	5,2	-	1,4	3,5	5,0
Electrical engineering	-	0,2	2,1	2,3	-	0,3	1,9	2,1	-	0,2	1,4	1,7
Shipbuilding	-	0,3	1,2	1,6	-	0,3	1,2	1,4	-	0,2	0,9	1,1
Means of transport	0,1	1,4	7,6	9,1	-	1,6	7,4	9,1	-	1,4	6,2	7,6
Structural steelwork	-	3,4	1,3	4,7	-	3,7	0,7	4,4	-	3,3	0,7	4,0
Building-civil engineer	-	9,5	0,9	10,4	-	8,9	1,2	10,1	-	8,6	1,1	9,6
Metal articles	-	3,6	5,3	8,9	-	3,3	6,1	9,4	-	2,9	5,4	8,4
Cans-metal boxes	-	-	3,0	3,0	-	-	3,3	3,3	-	-	2,8	2,9
Boilermaking	-	0,4	2,6	3,0	-	0,2	2,2	2,4	-	0,2	2,0	2,2
Other users	1,5	3,7	4,6	9,8	1,3	2,9	4,0	8,2	1,3	2,9	4,0	8,2
TOTAL	12,0	32,7	48,8	93,5	10,0	31,4	47,9	89,3	9,7	29,5	43,9	83,1

APPARENT CONSUMPTION OF FINISHED PRODUCTS IN THE COMMUNITY (EUR-10)

BY PRODUCT CATEGORY (million t)

	1981	1982	1983	VII-1983 VI -1984	1990 HIGH ASSUMPTION	1990 LOW ASSUMPTION
Liquid steel, ingots and semis	12,3	11,2	10,1	:	10,0	9,7
Heavy sections	6,5	5,9	5,5	5,3	5,9	5,5
Merchant steels (a)	16,1	14,9	14,4	15,2	14,6	13,8
Wire rod	10,1	9,6	10,0	10,6	10,9	10,2
LONG PRODUCTS,SUBTOTAL	32,7	30,4	29,9	31,1	31,4	29,5
Plate $\geq$ 3 mm (b)	17,3	16,8	15,7		16,2	15,3
Sheet $<$ 3 mm (incl. hot-rolled narrow strip) (b)	21,7	20,7	19,9		21,0	17,9
Coated sheet	8,1	8,4	8,5		10,7	10,7
FLAT PRODUCTS, SUBTOTAL	47,1	45,9	44,1	45,2	47,9	43,9
ROLLED PRODUCTS,SUBTOTAL	79,8	76,3	74,0	76,3	79,3	73,4
ECSC PRODUCTS, TOTAL	92,2	87,3	84,0	:	89,3	83,1

(a) incl. reinforcing bars

(b) incl. coils accordingly to thickness

6. Particular trends as regards preliminary processing products and tubes

Certain particular trends should be pointed out in the preliminary processing and tube manufacturing sectors. The development of tube production is largely dependent on export opportunities. Following the conclusion of the arrangements with the United States on tubes and pipes, fierce competition can be expected in non-Community markets, which may result in restricted export opportunities and a reduction in the volume of production. As regards quality and hence value added, Community tube manufacturers must try to adapt its supply to future market needs (in areas such as resistance to corrosion, high-strength tubes, offshore platforms, pipes using multiple layers of coil,very clean steel).

The activities of this sector will decline in tonnage terms compared with 1981 but may increase in value if tube manufacturers adopt a high profile in the sophisticated end of the market, where, in turn, more advanced primary products are often required.

This trend is valid, in particular, for the primary steel processing subsectors, an illustration being the grades used in wire-drawing which allow the fairly costly annealing stage of the process to be omitted. Preliminary processing companies are benefiting increasingly from this product-orientated policy. It is evident, moreover, that greater emphasis is being placed on high value added than on large-volume production. As regards metallic fibres (which can be as little as two thousandths of a millimetre in diameter),a porous product composed of eight-micron high-temperature - resistent alloy fibres - a humain hair is between 50 and 70 microns thick - will be used in the Space Shuttle building programme.

REAL AND EXPECTED CONSUMPTION OF NON-ECSC PRODUCTS
(TUBES AND OTHER PRELIMINARY PROCESSING)
IN THE COMMUNITY, BY SECTOR (EUR-10)

Mio t.

Sector	1981				1990 HIGH ASSUMPTION				1990 LOW ASSUMPTION			
	Extrusion/ Wire-drawing	Cold production (1)	Tubes	Other (2)	Extrusion/ Wire-drawing	Cold production (1)	Tubes	Other (2)	Extrusion/ Wire-drawing	Cold production (1)	Tubes	Other (2)
Mechanical engineering	0,9	0,3	1,5	1,3	1,0	0,3	1,5	1,0	1,0	0,3	1,5	1,0
Electrical engineering	0,3	0,5	0,1	0,2	0,3	0,6	0,1	0,2	0,3	0,6	0,1	0,2
Shipbuilding	0,1	0,0	0,1	0,1	0,2	0,0	0,3	0,2	0,1	0,0	0,2	0,1
Means of transport	0,7	0,9	0,9	1,8	0,9	1,1	1,4	1,9	0,9	1,1	1,4	1,9
Structural steelwork	0,1	0,3	0,8	0,1	0,1	0,3	0,8	0,1	0,1	0,3	0,7	0,1
Building-civil engineering	0,8	0,4	1,4	0,1	1,0	0,4	1,1	0,1	1,0	0,4	1,1	0,1
Metal articles	1,7	0,8	0,6	0,2	1,9	1,2	0,3	0,4	1,7	1,1	0,3	0,3
Cans and metal boxes	0,0	0,1	0,0	0,0	0,0	0,1	0,0	0,0	0,0	0,1	0,0	0,0
Boilermaking	0,0	0,0	0,7	0,1	0,0	0,1	0,7	0,1	0,0	0,0	0,6	0,1
Other users	0,8	0,4	1,8	0,5	0,8	0,4	1,8	0,5	0,8	0,4	1,8	0,5
Total	5,3	3,8	8,0	4,4	6,2	4,5	8,1	4,5	5,9	4,3	7,8	4,4

(1) Cold-rolled narrow strip and cold sections.
(2) Steel castings; deep-drawn steel; forgings and drop forgings.

This trend in the activities of the preliminary processing sectors is taking place against a backdrop of increasing diversification, which is why traditional activities will not increase as they have done in the past. Foundry and forging activities may perhaps decline in tonnage terms, but are tending to increase in quality and value.

The low growth in rolling and forming is explained primarily by the upturn in the use of these products by certain user sectors (in particular means of transport and metal products).

7. Particular trends as regards special steels

Over the years, the Member States' steel industries have continued to increase special-steels production, which has risen from 10.3% of ECSC output in 1970 to 12.5% in 1975 and 15.6% in 1983.

This development is particularly evident in the preliminary processing sectors, where purchases of special steels have gone up from 21% of the total in 1975 to nearly 30% at present - a trend which should continue up to 1990.

There are technological and market-related reasons for this increase in demand.

Technological development in mechanical and electrical engineering requires increasingly sophisticated, high-performance products; the need for high-strength low-alloy (HSLA) steels to compete with alternative products (aluminium and plastic) is a major consideration in sectors where lightness is important; the developing growth industries (such as energy production) and the transport and distribution of oil and gas requires the development of steel grades with ever increasing physical properties.

The market-related aspect concerns more particularly the growth in exports of special-steel preliminary processing products, notably tubes and drawn wire.

The trend in special-steel consumption will probably be higher than that for ordinary steels and will be linked in particular to the reduction in specific steel consumption in certain sectors, i.e. the replacement of ordinary steel components with lighter, special-steel ones. In short, this trend will make it possible to raise value but will not affect quality.

For future reference, it must be stressed that the refinement of manufacturing technology in melting shops and rolling mills that has taken place over the last few years has made it possible to obtain "ordinary" steels very similar to, but not as expensive as, "special" steels. The fact that this division between ordinary and special steels is becoming hazier may provoke a crisis in a fairly wide section of the industry (through the overcapacity that may result).

8. Foreseeable trends beyond 1990

When it comes to long-term projections, it is to be feared that traditional forecasting methods (even sophisticated ones), which rely inevitably on extrapolation, may no longer be appropriate, since it is very difficult to give adequate expression to the technological changes which characterize our society. Nevertheless, it is possible at this stage to outline some features of these changes. Thus:

- economic growth is to be found increasingly in the tertiary sector and less and less in industry. Steel's traditional customers, moreover, are gradually "maturing" and forming a replacement market. Motor vehicles and the construction industry are cases in point. In addition, the question of international competitiveness is vital for sections of threatened industries such as shipbuilding.

- Qualitative changes in final products will probably affect life cycle and there will be less need for such products to be replaced (e.g. in motor vehicles and machinery).

- Changes in production technology will no longer be gradual, as has been assumed in this forecast, but more radical: thus, entire sectors may abandon steel for other materials. In the motor industry, composite car bodies have already appeared on the market and there could be a large-scale move in this direction after 1990.

All these factors, which so far have not had a drastic effect, together with the constant improvement in steel processing technology, may force the steel market to contract further in the 1990s; it cannot even be excluded a priori that the market for flat products, which in the medium term offers the best prospects for stable demand, plunges into a recession after 1990 (effects of substitution).

9. Consumption of steel in the accession countries and the enlarged Community

Demand for steel in Spain and Portugal is estimated at about 9% of the 1983 internal EUR-10 market; however, long products account for about half of the accession countries' market for rolled products (as against only 40% in EUR-10), a reflection inter alia of the relative importance of the construction industry in the Spanish and Portuguese economies. It is very likely therefore that the structure of demand in these two countries will gradually come to resemble that in the Community as the manufacture of consumer durables (e.g. motor vehicles) and plant and machinery develops. This raises the question at the outset of just how competitive these countries will be as they become intgrated in the economic area of the enlarged Community.

Steel consumption in Spain (1979) can be broken down roughly as follows :

Pipes and tubes	13 %
Other preliminary processing	15 %
Building and civil engineering	33 %
Mechanical engineering	11 %
Motor Vehicles	16 %
Shipbuilding	5 %
Other	7 %

After the major (10%) rise in demand in 1980, the Spanish market remained static and even went into recession - which continued into 1984 - in a macroeconomic climate which was similar in many ways to the Ten's (low growth in GDP and downturn in investment), but which was aggravated by the fact that distressed industries such as shipbuilding and electrical engineering represent such a large share of Spanish's industrial structure. The forecasts (for 1986) contained in the following table were forwarded to the Commission by the Spanish authorities in 1984. They assume a macroeconomic recovery from 1983 onwards of 3% a year in GDP and 5% a year in investment. Since the Spanish economy did not fulfil these expectations in 1983, and only did so in part in 1984, it is reasonable to assume that these forecasts can only be achieved after a considerable delay. As apparent consumption in 1984 remained more than 20% below the target level, the 1986 forecasts for Spain can be added to the 1990 forecasts for the Ten.

As for Portugal, where consumption is only about 1 million tonnes, the preponderance of long products in the Country's demand structure reflects the crucial role played by the construction industry. As the Portuguese market is small, the (estimated) data for 1983 have been included in the following table - but only with a view to providing a complete picture - as being applicable in the context of the Twelve in 1990.

APPARENT CONSUMPTION OF ECSC PRODUCTS

IN EUR-10, THE ACCESSION COUNTRIES AND THE ENLARGED COMMUNITY

(million tonness)

Product	EUR-10*			SPAIN			PORTUGAL			EUR-12		
	1981	1983	1990	1981	1983	1986 1990	1981	1983	1990	1981	1983	1990
Liquid steel, ingots & semis	12,3	10,1	10,0	0,6	0,6	0,7	..	..	..	12,9	10,7	10,7
Heavy sections	6,5	5,5	5,9	0,9	0,8	1,0	0,1	0,0	..	7,5	6,3	6,9
Merchant steel	16,1	14,4	14,6	1,7	1,9	2,2	0,5	0,4	..	18,3	16,7	17,2
Wire rod	10,1	10,0	10,9	0,4	0,4	0,7	0,1	0,1	..	10,6	10,5	11,7
Long products subtotal	32,7	29,9	31,4	3,0	3,1	3,9	0,7	0,6	..	36,4	33,6	35,9
Sheet ⩾ 3 mm	17,3	15,7	16,2	0,8	0,4	0,6	0,1	0,1	..	18,2	16,2	16,9
Plate < 3 mm Hot rolled narrow strip	21,7	19,9	21,0	1,8	2,0	2,6	0,4	0,3	..	32,6	31,4	35,4
Coated sheet	8,1	8,5	10,7	0,6	0,7	0,8			..			
Flat products subtotal	47,1	44,1	47,9	3,2	3,1	4,0	0,5	0,4	..	50,8	47,6	52,3
Rolled products subtotal	79,8	74,0	79,3	6,2	6,2	7,9	1,2	0,9	..	87,2	81,1	88,1
ECSC products, total	92,2	84,0	89,3	6,8	6,8	8,6	1,2	0,9	..	100,2	91,7	98,8

* High assumption

CHAPTER II

EXTERNAL TRADE

1. Introduction

The introductory section outlined the external policy objectives to be pursued between now and 1990 on the basis of the likely performance of the Community's steel industry, and the main emphasis was on the following points :

- the viability and productivity of firms will be key factors in determining their propensity to export on very competitive markets;
- quality will be the strong point, on which all export perspectives will have to concentrate;
- the penetration of third countries on the Community market can not indefinitely be restricted by arrangements.

Whether these objectives will be achieved or not, depends primarily on the performance of the Community steel industry, but here we must go into a brief examination of some factors, that could render the achievement of the agreed objective more difficult.

2. The world environment

The table below indicates prospective consumption and production capacity in 1990. Taking a medium case hypothesis (the most realistic) and in view of the stagnation in world consumption (719 in 1985, 722 in 1990), capacities could increase by some 100 million tonnes, i.e. 10%, which would lead to a further inbalance between supply and demand.

WORLD STEEL PRODUCTION, CONSUMPTION AND STEELMAKING CAPACITY TRENDS

Unit : mio t crude steel (1)

COUNTRY/REGION	CRUDE STEEL PRODUCTION (a)	APPARENT CONSUMPTION (a)			CRUDE STEELMAK. CAPAC. (b)	
	1983	1983	1985	1990 M-H (2)	1982	1990 B-H (2)
EUR-10	109,5	89,9	93,7	91-100	200,3	172,8
Other Western-Europe	34,2	29,6	31,8	33- 35	43,6	(40,0)
USA	76,8	96,0	111,9	100-110	140	) 145 - 150
Canada	12,8	11,3	12,9	14- 16	20,3	)
Japan	97,2	66,3	73,5	73 - 80	159	147 - 152
Oceania	5,8	5,5	7,1	8- 9	9,1	(9,5)
South-Africa	7,0	5,3	5,6	6- 7	10,5	10,7
Developing countries	63,6	96,8	104,1	122-133	87,8	118,9 - 132,8
Africa(excl.South A)	2,7	12,0	12,4	13- 14	6,5	7,1 - 9,4
Algeria	0,8	:	:		2,1	2,1
Egypt	0,9	2,0	2,2		1,8	2,4 - 3,1
Nigeria	0,2	4,0	4,0		1,1	1,1 - 2,4
Zimbabwe	0,6	0,2	0,4		1,0	1,0
Others	0,2	:	:		0,5	0,5 - 0,8
Latin America	28,9	23,1	29,0	34- 37	40,8	55,3 - 58,1
Argentina	2,9	2,9	3,3		5,3	5,4 - 7,0
Brazil	14,7	9,0	12,0		17,3	27,2 - 27,9
Chile	0,6	0,5	0,6		1,1	1,1
Colombia	0,5	:	:		0,7	0,7
Mexico	6,9	6,2	7,6		10,7	13,3 - 13,5
Peru	0,3	:	:		0,6	0,8
Venezuela	2,3	1,6	2,5		3,7	5,1
Others	:	:	:		1,4	1,7 - 2,1
Middle East	2,4	18,7	17,2	19- 23	2,5	7,5 - 10,7
Iran	1,2	5,4	4,0		1,0	3,9 - 7,1
Iraq	:	:	:		0,4	0,4
Lybia	:	:	:		-	1,3
Saudi Arabia	:	:	:		-	0,8
Others	:	:	:		1,1	1,1
South-East Asia (excl.Japan)	29,6	43,-	45,5	56- 60	38,0	49,0 - 54,6
Indonesia	0,8	:	:		1,3	2,5 - 2,6
Korea	11,9	8,9	11,0		13,3	16,4 - 17,3
Malaysia	0,4	:	:		0,6	1,1
Philippines	0,2	1,6	1,6		0,6	0,6
Taiwan	5,0	5,4	6,4		6,2	6,4 - 8,8
India	10,2	11,6	11,5		14,3	18,9 - 21,1
Pakistan	:	:	:		0,1	1,2
Others	:	:	:		1,7	1,9
Comecon	210,0	211,0	215,0	200-210	210,3	210 -(220)
China + North Corea	45,8	57,0	63,0	75- 82	41,0	(50)- (55)
World	661,6	668,7	718,6	722-780	921,9	(1.020)

(1) For apparent consumption, broad definition (including foreign trade in non-ECSC steel products)

(2) M = average case H = high case B = base case (incl. only firm capacity extensions)

(a) Source : IISI

(b) Source : OECD (1984)

The expansion of new steel industries in South America has already made this region into a net exporter. Between now and 1990 its present production capacities will grow by a further 10 million tonnes, at least, to a total of 55-60 million. It is hardly possible that Community exports to these countries will recover, at least in quantitative terms. The main thrust will have to be based on quality and on certain products (e.g. sheet less than 0.5 mm, coated products, etc) if present export levels are to be maintained.

But what must be emphasized even more is the competitive pressure these countries will exert in other world markets : in 1984, they already accounted for 12% of the United States' imports.

It is also difficult to foresee an increase in exports in Eastern Europe. The aim of the development plans is self-sufficiency in the steel sector with a substantial reduction in imports. According to our information, export prospects to these countries will tend to decrease.

The Community has sent 14% of its exports in 1983 to the Far East (excluding Japan). This region has the highest growth rate in the world and more in particular its steel consumption doubled between 1975-1983. The theoretical import requirement was 25 million tonnes in 1983. Between now and 1990 the region should be regarded as the most dynamic due to the expansion of demand in China. Nevertheless, in this market it will always be difficult to deal with competition from Japan and the most recently established steel industries (Taiwan, Korea, Singapore), which at least can benefit from a more favourable geographical position. In view of new investments in the steel industry within this region, and the general development in world competition, this market tends not to have the promising character, that was expected.

The Middle-East market, which had achieved exceptional levels of steel consumption during the last ten years, will show a declining demand due to the finishing of important infrastructure works, even if imports in Iran were to recover.

The import restriction policy decided by the United States and the number of export limitation arrangements concluded or under negociation with the supplying countries, will result in a substantial reduction of imports from these countries.

The remaining countries of Western Europe are entirely comparable with the EEC in terms of both cost structures and markets and supplies. It is unlikely that the balance with them will change by 1990.

Finally, the development of import and exchange restrictions in many developing countries, as well as the increasing trade between them, makes an increase of our exports into these countries more difficult.

3. Structural aspects of Community foreign trade

From this results a hypothesis of stagnation of trade on the nearest or traditional markets and a growing level of problems on most of the other markets, where steel is sold at marginal prices for a large number of Community steel undertakings. In this respect the Community steel industry will have to evaluate which part of the production it foresees to export to markets where world competition is particularly strong and where prices are very low.

In a general way, the steel industry will have to evaluate the interest of maintaining a capacity, which could be useful in periods of high market trends, but a handicap to its viability in intermediate periods. In fact, export prices in general only cover marginal costs, and too high a differenciation between internal and external prices would come to subsidizing sales to third countries by Community consumers.

This has to be taken into account in the total context of structural data that characterize the Community steel industry, more in particular :

- production structures which in general are not optimally located and are sometimes less harmoniously organized than the more recent steel industries;
- high dependence on imported raw materials;

- a relatively high level of the other production factors (costs of labour and energy).

In fact, the restructuring of the steel industry has also taken place in many other countries outside the Community; the gain in efficiency of our industry (as a result of this restructuring) will result therefore in a less important gain of competitiveness vis-à-vis the world competition.
The Community steel industry should not exclude a rise of imports. The restriction or reductions of imports in other world regions are likely to make competition more intense. Moreover, the positive effects of the rate of the dollar can not indefinitely play the role of discouraging the imports.

4. Forecast

The table on the following page shows a perspective for 1990. On the basis of the reflections made in this section the data for 1990 have to be considered as an optimistic objective.

One must, in fact, remain aware of the effect on the balance of external trade of changes in competitiveness, for any deterioration obviously works in 2 ways : reduction of exports and increase of imports. With equal volume and access to the world market, a deterioration in our competitiveness would therefore risk resulting in a considerable reduction in the balance; the example of the United States, which saw imports in home consumption increase over the years from 15% in 1979 to 26% in 1984, stands as a warning.
On the other hand, the part of our exports, which can be qualified as having a low added value, remains relatively important (cf. infra 5). To the extent that the companies involved would not make an effort to become competitive vis-à-vis their third countries' competitors, we risk for a large portion of our exports, undergoing a significant deterioration.
In the extreme case of an accumulation of adverse factors, a balance of 5 million tonnes only would no longer be unimaginable. The data contained in the table hereafter under the heading "low assumption", as well as those in the derived tables under Chapter III, should be regarded as purely indicative.

NET TRADE (EXPORTS - IMPORTS) OF THE COMMUNITY (EC-10)
WITH THIRD COUNTRIES (millions of tonnes ECSC products

Mio t.

	1981	1982	1983	VII-1983 VI -1984	1990(1) L	1990(1) H
Ingots and semis	0,5	-	0,7	1,3	- 0,5	0,5
Heavy sections	2,0	1,3	1,4	1,4	0,5	1,5
Merchant bars	2,1	1,0	0,9	1,1	0,5	1,25
Wire rod	0,7	0,3	0,1	-	- 0,5	0,25
SUBTOTAL LONG PRODUCTS	4,8	2,6	2,5	2,5	0,5	3,0
Hot coils and strip	3,8	1,8	1,6	2,3	1,0	2,5
Heavy plate and medium	1,9	0,8	0,7	1,1	0,25	1,0
Sheet	5,9	4,4	4,9	5,4	4,0	6,0
(of which coated)	(1,9)	(1,6)	(1,9)	(2,0)	(2,0)	(2,6)
SUBTOTAL FLAT PRODUCTS	11,6	7,0	7,2	8,8	5,25	9,5
SUBTOTAL ROLLED PRODUCTS	16,5	9,6	9,6	11,3	5,75	12,5
TOTAL ECSC PRODUTS	16,9	9,6	10,3	12,7	5,25	13,0

(1) L = Low assumption
H = High assumption

For the various categories of products the main factors to be taken into consideration in determining the balance are :

a) semis, ingots : 1984 exports (to the United States) were a temporary feature; there is some possibility that the ore-producing countries will work out a diversification strategy; the Community's technical performance in the liquid phase is likely to be poor.

b) long products : heavy sections tend to fall into the specialist category. By contrast, merchant bars and, in particular, wire rod in which the trade balance was already in deficit in 1984, belong to the "bottom of the range".

c) flat products : wide strip and some medium plate are bottom-of- the range products which explains the stagnating balance. On the other hand, the specialist nature of sheet (including cold-rolled and coated products) means that there is stilll some chance of expanding exports.

THE IMPACT OF THE ENLARGEMENT ON THE NET BALANCE OF TRADE WITH THIRD COUNTRIES

The integration of Spain will for the Community as a whole result in a rise of its dependence on world steel trade. In the first place this concerns only an arithmetical result of the addition of the relatively important net balance of Spanish trade to that of the Community of Ten.

The Spanish steel industry - already a large exporter of long products for a long time - has increased its exports to third countries during the period of functioning (since 1978) of the self-restraint arrangement of exports to the Community.

The forecast data with regard to Spain, which are presented in the table below, have been provided by the Spanish administration, in the same context as those concerning the apparent consumption within the framework of a "forecast 1986".

In view of the fact that the treaty of accession foresees a temporary limitation of Spanish steel exports to the present Community, one can suppose that the situation originally foreseen for 1986 remains valid in the context of a synthesis for the enlarged Community and between now and 1990. This synthesis has, besides, only a purely arithmetical character, as far as the Spanish objective of maintaining an important trade surplus with third countries - and in a sector as sensitive as long products - risks affecting the viability of the firms concerned.

As far as Portugal is concerned, a country with a very small net balance, the maintaining of the balance of 1983 in a synthesis for Europe 12 between now and 1990 constitutes only a first approximation.

NET TRADE (EX-IM) OF THE COMMUNITY (EEC-10), THE CANDIDATE COUNTRIES AND THE ENLARGED COMMUNITY

million tonnes ESCS-steel products

	EEC-10 (with third countries) (2)			SPAIN[1] TOTAL			SPAIN[1] of which with EEC-10			PORTUGAL			EEC-12 (with third countries)		
	1981	1983	1990	1981	1983	1990	1981	1983	1990	1981	1983	1990	1981	1983	1990
Ingots and semis	0,5	0,7	0,5	0,3	0,6	0,4	-0,1	0,0	0,0	-0,0	-0,0	..	0,9	1,3	0,9
Heavy sect.	2,0	1,4	1,5	1,1	1,0	0,9	0,3	0,2	0,3	-0,0	-0,0	..	2,8	2,2	2,2
Merchant bars	2,1	0,9	1,25	1,7	2,1	2,3	0,1	0,1	0,2	-0,0	-0,0	..	3,7	2,9	3,4
Wire rod	0,7	0,1	0,25	0,1	0,3	0,3	-0,1	-0,0	0,0	-0,0	-0,0	..	0,9	0,4	0,6
Sub-total long products	4,8	2,5	3,00	2,9	3,3	3,5	0,2	0,3	0,5	-0,0	0,0	..	7,4	5,5	6,0
Hot-rolled wide & narrow strip	3,8	1,6	2,5	-0,2	-0,2	-0,3	-0,4	-0,2	-0,2	0,1	-0,0	..	4,1	1,6	2,4
Plate ⩾ 3 mm	1,9	0,7	1,0	0,2	0,2	0,2	-0,0	0,0	-0,1	-0,0	-0,1	..	2,1	0,8	1,2
Sheet < 3 mm (incl.coated sheet)	5,9	4,9	6,0	0,4	0,3	0,4	-0,1	-0,2	-0,2	-0,1	0,1	..	6,3	5,3	6,5
Sub-total flat products	11,6	7,2	9,5	0,3	0,3	0,3	-0,5	-0,4	-0,5	-0,1	-0,2	..	12,3	7,7	10,1
Sub-total rolled prod.	16,5	9,6	12,5	3,2	3,7	3,8	-0,3	-0,1	0,0	-0,1	-0,2	..	19,9	13,2	16,1
Total ECSC-products	16,9	10,3	13,0	3,5	4,3	4,2	-0,3	-0,1	0,0	-0,1	-0,2	..	20,6	14,5	17,0

(1) source : Spanish administration. Net trade figures are based on criteria which are not integrally identical with community practices (e.g. improvement trade).

(2) high hypothesis

Where the enlarged Community would be net exporter in 1990 of 17 million tonnes ECSC-products (high case), the change in scope from ten to twelve countries produces different results according to product lines (see for instance the real situation in 1983) : the net trade remains practically identical for flat products but the situation is different for long products (doubling) and in particular for the sub-class of merchant steels, where net trade tripled.

* * *

The Community steel industry could provide a "product label" which would indicate the quality as well as the range of dimensions, services and technical assistance available and all other factors which pertain to a "quality" product. This label helps achieve two objectives : an increase in the value of exports and the creation of stable flows with various world regions.

This idea would fit in with the wider frame-work of indirect steel exports (at the preliminary processing and final-product stages) whose longer-term objectives should be to maximise the utilization of the internal resources of the Community industry, typically a processing one. It must be remembered that less than 70% of the Community's steel exports are covered by the ECSC Treaty.

The analysis which follows gives details for the last few years of the part played by ECSC and non-ECSC products in the Community's external trade.

5. Brief analysis of the external trade of the Community of Ten

Introduction

As the title of this subsection indicates, this analysis covers only the Ten. Consequently, Spain and Portugal are regarded as non-Community countries and included in the "Rest of Europe" geographical area, whilst, for the purposes of external-trade statistics, Greece is regarded as a Member of the Community since 1978 (Community statistics with regard to Greek trade updated for the priod 1978 to 1980 on the basis of SITC data (Standard International Trade Classification, Geneva).

The geographical areas do not cover the whole of the non-EEC area. This is due to the heading "Countries not listed elsewhere" which is not given in the Tables.With regard to the products in question, they concern exchanges of all ECSC steel products and non-ECSC steel products, and they have been classified in increasing order of added value, i.e. the first five are considered as having a relatively lower added value, and the others, an added value which is generally higher.

Balance of trade

The balance of trade is still well in surplus (+ 22.2 million tonnes in 1978 and + 15.6 million tonnes in 1983) in spite of a big decrease. However, it should be emphasized that this decrease is entirely due to a decrease in exports compared to a single year (1978) which was regarded as exceptional for trade.

Imports

Some 80% of our impors come from two areas - the Rest of Europe (including Spain and Portugal) and the State-trading countries and 66% of these are concerning the first five groups of products - which may be regarded as having a low added value. As this situation has remained unchanged since 1978 and, in particular, a large position of our imports has been covered by arrangements since then, it is difficult to foresee whether and how the Community imports' structure will be modified during the coming years.

Exports

As far as our exports are concerned, the decrease from 1978 to 1983 has been larger for the products of low added value than for the products of a higher added value.

Our exports are better diversified throughout importing zones and are fairly stable in the industrialised countries, Asia and the countries with state trade. The decrease noted is more or less general, as a consequence either of the fact that certain countries have their own production centres, or of the fact that the flux of exports of certain industrialised countries outside Europe is very irregular. If we take into account that the abovementioned evolution leads to an increase in the part of the higher added value products, it is the evolution in value which gives us the most valuable indications concerning the future of exports of the Community.

FOREIGN TRADE STRUCTURE OF THE EC-10

Total of products % of total non-EEC Units : Tonnes

Flows	Non-EEC	Rest of Europe	North America	Central and South America	Asia	Africa	Oceania	State-trading nations(1)
Imports								
1978	12.145.925	51,2	4,1	4,4	8,4	4,1	3,7	24,3
1979	13.262.619	52,1	3,9	4,5	6,9	5,5	2,4	24,6
1980	13.555.369	47,-	6,6	6,2	9,7	6,6	2,3	21,6
1981	9.628.874	58,8	4,3	3,1	2,8	4,3	1,2	25,5
1982	12.315.994	51,7	5,1	7,5	3,8	7,5	1,3	23,1
1983	11.904.893	57,8	3,3	4,9	3,9	6,8	1,5	21,8
Exports								
1978	34.265.524	17,6	20,8	7,4	18,-	9,9	0,3	25,9
1979	32.844.107	21,1	18,3	5,5	17,1	10,7	0,3	27,-
1980	29.813.166	26,6	13,3	7,2	16,5	14,7	0,2	21,5
1981	33.873.212	22,6	23,2	8,9	18,5	12,2	0,3	14,2
1982	27.488.148	27,-	18,7	6,2	17,1	11,3	0,5	19,2
1983	27.525.721	26,2	17,2	4,1	17,9	9,8	0,5	24,2

(1) including China

FLOWS : IMPORTS INDEX 1978 = 100 UNITS TONNE

	1978	1979	1980	1981	1982	1983
NON - EEC	TONNES					
Ferro-alloys						
semi-products	3.823.356	112	110	71	90	74
Hot rolled wide strip	1.429.792	113	116	57	99	92
Narrow strip	273.270	97	92	76	82	93
Wire rod	611.995	95	97	81	107	140
Sections	1.881.703	111	115	107	127	131
Rails and other railway material	62.920	113	158	59	67	91
Wire	122.361	114	127	102	114	136
Heavy and medium plate	1.175.790	119	127	98	115	111
Sheet	2.012.190	100	99	64	91	93
Tubes, pipes, etc ...	713.728	111	124	103	109	107
Other articles	39.820	111	137	118	109	105
TOTAL	12.145.925	109	112	79	101	98

FLOWS : EXPORT INDEX 1978 = 100 UNITS TONNES

NON - EEC	1978 TONNES	1979	1980	1981	1982	1983
Ferro-alloys						
semi-products	1.597.633	112	117	138	121	135
Hot rolled wide strip	3.928.488	99	88	104	75	67
Narrow strip	1.316.203	95	104	104	80	79
Wire rod	1.566.025	102	85	76	62	62
Sections	7.461.180	98	81	79	57	60
Rails and other railway material	300.540	128	132	160	135	132
Wire	589.012	105	92	100	82	90
Heavy and medium plate	2 77.665	94	87	113	81	74
Sheet	8.280.842	91	84	87	75	81
Tubes, pipes, etc ...	6.264.336	90	84	120	109	102
Other articles	183.600	107	101	95	81	85
TOTAL	34.265.524	96	87	99	80	80

CHAPTER III

BALANCE BETWEEN SUPPLY AND DEMAND

SECTION 1. PRODUCTION

1. Finished products

Forecasts of (apparent) internal consumption and external trade indicate that the output of finished products in terms of weight, compared with 1981 production levels, will probably drop by 5.4% (high assumption). The production level achieved in 1984 - an estimated 103 million tonnes approximately - would therefore constitute a valid ceiling under good economic conditions. Differing trends for individual products can be observed, however:

(i) the trend in unprocessed products (liquid steel for casting, ingots and semis for direct sale) is clearly downwards;

(ii) for long products the trend is more or less stagnant compared with 1984; compared with 1981, wire rod fares best;

(iii) potential stabilization (and growth, even, in the case of coated sheet) is best in flat products, the 1983 level being a springboard for their development.

2. Crude steel balance

The continued inroads made by continuous casting tend to increase savings on crude steel and hold back the production of crude steel compared with finished products. According to the latest forecasts, production capacities in crude steel for continuous casting should continue to increase by more than 20 million tonnes between 1983 and 1987, exceeding 125 million tonnes as from 1987, i.e. 72% of the total production capacity in crude steel of 173 million tonnes.

The proportionate share assumed for continuous casting in crude steel production (75%) is probably a conservative estimate, the pressure of productivity forcing the steel industry to use these installations to the maximum. However, whether or not the effective rate of continuous casting is 75% or higher has little effect on the crude steel balance. Roughly speaking, an increase of 5% in the proportionate share of continuous casting corresponds to a drop of 1 million tonnes of crude steel for which production between now and 1990 is unlikely to exceed 120 million tonnes (high hypothesis).

(NB. In order to deduce correct production figures -i.e. without double counting from forecast apparent consumption and external trade balances, acount must be taken of products for re-rolling imported into the Community from non-member countries. The forecast production levels for 1990 - as regards both finished products and crude steel - take account of 600 000 tonnes of ingots and semis and 200 000 tonnes of wide strip imported for re-rolling.

3. Increase in production as a result of enlargement

On the same basis as that adopted in respect of the Ten, the forecast internal consumption and external trade of Spain and Portugal increase Community production levels in 1990 by the following amounts (the figures in brackets are the output for 1983):

	million t	
Liquid steel, ingots and semis for sale	1.4	(1.4)
ECSC finished long products	8.0	(6.9)
of which: heavy sections	1.9	(1.7)
merchant steel	4.9	(4.3)
wire rod	1.1	(0.8)
ECSC flat products	4.5	(3.9)
ECSC products, total	13.8	(12.1)
Crude steel (for the record)	16.3	(13.4)

These increases derive entirely from the 1990 target for Spain, since in the case of Portugal the figures used are for 1983. A 19%, or higher, margin over the 1983 outturn can be regarded as rather unrealistic.

EC-10 : PRODUCTION OF ECSC STEEL PRODUCTS (mio t)

Mio t.

	1981	1982	1983	VII-1983 VI -1984	1990(1)	
					L	H
Liquid steel for casting, ingots and semis for sale	13,5	12,3	11,8	:	9,8	11,1
Heavy sections	8,5	7,0	7,1	6,6	6,0	7,4
Merchant bars	17,7	15,4	15,2	15,9	14,3	15,8
Wire rod	10,7	9,9	10,1	10,7	9,7	11,2
SUBTOTAL LONG PRODUCTS	36,9	32,3	32,4	33,2	30,0	34,4
Hot-rolled coils finished products (and strip)	19,4	16,4	16,3	17,8	14,5	16,9
Heavy and medium plate	12,8	10,9	9,6	9,9	8,3	9,9
Sheet	26,4	25,1	25,5	26,7	26,6	30,7
(of which coated)	(9,7)	(9,8)	(10,5)	(11,2)	(12,7)	(13,3)
SUBTOTAL FLAT PRODUCTS	58,6	52,4	51,4	54,4	49,4	57,6
SUBTOTAL ROLLED PRODUCTS	95,5	84,6	83,8	87,8	79,4	92,0
TOTAL ECSC PRODUCTS	109,0	97,0	95,6	:	89,2	103,1

(1) L = Low assumption
H = High assumption

EC-10 : CRUDE STEEL BALANCE (mio t)

Mio t.

	1981	1982	1983	1984	1990(1) L	1990(1) H
% continuous casting	46	53	61	:	75	75
Average crude steel yield	1,2078	1,1943	1,1792	:	1,16	1,16
Consumption	110,2	101,9	98,5	:	96,4	103,6
Variation in stocks	- 3,3	- 1,6	- 0,6	:	-	-
Exports	27,3	21,5	21,7	:	6,5	16
Imports	7,8	10,3	10,0	:		
Scrap consumption in rolling mills	0,2	0,2	0,2	:	-	-
CRUDE STEEL PRODUCTION	126,1	111,4	109,5	120,3	103,0	119,6

(1) L = Low assumption
H = High assumption

SECTION 2. BALANCE BETWEEN SUPPLY AND DEMAND

1. EEC of Ten

The divergence in the early years of the crisis, between supply and demand -i.e. the marked increase in maximum possible production in contrast to the stagnation in requirements - has meant that the entire Community steel industry has had to make a major adjustment since 1980, an effort which must continue in the years ahead.

From 1980 to mid-1985, hot-rolled production capacity declined by 28.4 million tonnes (from 171.7 to 143.3 million tonnes), mainly as a result of the Community rules for aids to the steel industry[1]. These reductions are in line with one of the objectives set by the Community in November 1982 at the informal Council in Elsenore, i.e. to adjust hot-rolled production capacity to the target of 30-35 million tonnes by the time the aids code expires.

In addition to the reductions identified in mid-1985, there are opportunities for further reductions either through applying the principles in the aids code (reductions which the Commission may yet be forced to require on viability grounds or as a quid pro quo for granting additional aid to that authorized in June 1983), or spontaneously through cooperation agreements between firms. Accordingly, the capacity data set out in the accompanying table should be regarded as maxima, even though they are provisional.

It should also be pointed out that the objective of 30-35 million tonnes was set without taking account of the situation in the Greek steel industry, since Greece joined the Community after 1980.

Under the assumption of an upswing in external trade, the rate of utilization would be about 66-68% for hot-rolled products and cold-rolled sheet and 72% for coated sheet. Compared with previous years - 58% in 1981, 54% in 1983 - this would certainly be a considerable improvement, but the overall average rate of utilization will still be substantially lower than the optimum of 80%.

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(1) Decision No. 2320/81/ECSC (of No. L 228 of 13 August 1981).

The attempt to adjust supply to demand will therefore have to be continued and will involve substantial rationalization in the short term: many firms will not be able to ensure their long-term viability in such a climate, especially as the "natural" move to improve the productivity of already profitable installations will continue.

Although, overall, excess hot-rolled capacity can still be put at 24,5 million tonnes, the situation varies greatly with the category of product:

- as regards wide and narrow strip, the rate of utilization should exceed 70%, which was regarded as the minimum that would enable the majority of restructured steel firms, for a short while at least, to remain viable and cope with the progressive liberalization of the market. Given the size of this sector in quantitative terms, however, a rate of utilization of 80% will still involve an additional reduction of some 6.8 million tonnes.
  By contrast, there will continue to be a substantial excess as regards reversing-mill plate, with considerable tension on the market as long as too few plants have been closed.

- as regards long products, only the wire-rod sector seems to be improving. The fact that wire can be produced in plant which normally manufactures concrete reinforced bars, however, plus the continuing overcapacity in the latter category of product threaten to upset the balance in this sector.

It is obvious in this context that firms' investment policies will have to be directed principally at consolidating the factors which are likely to improve profitability and product quality, avoiding any increase in the overall level of production capacity. This is also the line which the Commission will take in its reports pursuant to Article 54 ECSC.

BALANCE BETWEEN SUPPLY AND DEMAND - 1990

Mio t.

	Production high assumption	MPP 1986	Rate of utilisation	MPP required(1)	Surpluses(1)		MPP 1980
					Tonnage	%	
I. CRUDE STEEL	119,6	167,7	71,3 %	140,7	27,0	16,1 %	204,8
II. HOT ROLLED PRODUCTS							
Wide and narrow strip	53,0	73,1	72,5 %	66,3	6,8	9,3 %	82,2
Reversing-mill plate	7,6	14,2	53,5 %	9,5	4,7	33,3 %	19,5
Hot flat products, total	60,6	87,3	69,4 %	75,8	11,5	13,2 %	101,5
Heavy sections	7,4	13,2	56,1 %	9,3	4,0	30,1 %	16,1
Light sections	15,8	28,2	56,0 %	19,8	8,5	30,1 %	35,1
Wire rod	11,2	14,4	77,8 %	14,0	0,4	3,1 %	18,7
Long products, total	34,4	55,9	61,5 %	43,0	12,9	23,1 %	69,9
Hot-rolled products, total	95,0	143,3	66,3 %	118,8	24,5	17,1 %	171,7
III. OTHER FINISHED PRODUCTS							
Cold sheet	30,5	44,8	68,1 %	38,1	6,7	15,0 %	44,9
Coated sheet	13,3	18,4	72,2 %	16,6	1,8	9,8 %	15,5

(1) Both MPP required and surpluses have been calculated on the basis of a utilization rate of 85 % in respect of crude steel and 80 % in respect of rolled products.

2. Impact of enlargement on the balance between supply and demand

Whereas the restructuring of the Community steel industry will achieve the objectives set in November 1982, the Spanish steel industry will require more time, and special conditions after 1985, to implement the restructuring measures provided for in the Accession Treaty.

The capacity forecasts for 1986/88 given below are therefore only very incomplete and provisional, especially since:

- the MPP figures (maximum possible production) are only an initial evaluation of capacity, based on Community criteria, and are likely to be revised ;
- under the Accession Treaty, the capacity of the Spanish steel industry will have to be reduced to 18 million tonnes, i.e. less than the figures given below, although it is not possible at present to say how these cuts will be distributed among the different categories of product.

These comments should be regarded as additional to any reservations that can be made about the forecast production level for 1990.

It is clear then that, initially, the overall utilization rate will be affected by enlargement; only when Spanish MPP has effectively been reduced to 18 million tonnes will the overall impact of enlargement have been pretty well neutralized.

1990 PRODUCTION AND CAPACITY BALANCE FOR THE COMMUNITY OF TEN AND THE ENLARGED COMMUNITY

	Production (mio t)		MPP expected (mio t)		MPP required (mio t)		Rate of utilisation (%)		Surplus in %	
	EEC-10 (1) (a)	EEC-12 (a)	EEC-10 (b)	EEC-12 (b)	EEC-10 (c)	EEC-12 (c)	EEC-10 (a):(b)	EEC-12 (a):(b)	EEC-10 (b)-(c):(b)	EEC-12 (b)-(c):(b)
I Hot-rolled products										
. Wide and narrow strip	53,0	:	73,1	79,1	66,3	:	73	:	9,3	:
. Reversing mill-plate	7,6	:	14,2	15,0	9,5	:	54	:	33,3	:
Hot flat products total	60,6	65,1 (2)	87,3	94,0	75,8	81,4	69	69	13,2	13,4
. Heavy sections	7,4	9,3	13,2	15,6	9,3	11,6	56	60	30,1	25,6
. Light sections	15,8	20,7	28,2	39,1	19,8	25,9	56	53	30,1	33,8
. Wire rod	11,2	12,3	14,4	16,7	14,0	15,4	78	74	3,1	7,8
Long products total	34,4	42,4	55,9	71,6	43,1	53,0	62	59	23,1	26,0
Hot-rolled products total	95,0	107,5	143,3	165,7 162,7 (3)	118,8	134,4	66	65 66 (3)	17,1	18,9 17,4 (3)
II Cold sheet	30,5	32,8	44,8	50,1	38,1	41,0	68	65	15,0	18,2

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(1) High assumption

(2) For Spain, imports of coils for re-rolling are included (overrating of production).

(3) Assumption of a reduction of the Spanish MPP to 18 million tonnes.

Section 3. THE BALANCE OF THE SPECIAL STEEL SECTOR

1. While the analysis in the preceding pages comprised the total steel industry, it should not be forgotten that the special steels represent 15% in volume, that they are characterized by rather different problems and that they are concerned by the anti-crisis measures in a very limited way.
The shares of special steels in national steel production are as follows :

	1965	1970	1975	1980	1983
ECSC *	(5.2%)	10.3%	11.5%	15.6%	15.6%
of which Germany		13.6%	16.8%	18.6%	
Benelux				5.2%	
France		12.7%	14.3%	16.7%	
United Kingdom				14.3%	
Italy				20.0%	

	1965	1970	1975	1980	1983
JAPAN	7.3%	9.9%	9.7%	13.6%	16.1%
USA	8.2%	9.2%	12.5%	13.4%	12 -%(82)

* Special structural steels ("Sonderbaustähle") were progressively brought into the special-steel statistics by 1976 (ECSC Special Statistical Bulletin).

A substantial increase in the share of special steels can be observed in the ECSC and Japan.

In the USA and the United Kingdom, where the share of special steels is relatively moderate, the market for special (nickel-based) alloys and the corresponding specific consumption of these are higher.

On the basis of these national definitions, the world market (including the Eastern bloc) is probably some 60-65 million tonnes in 1984, about 10% of world steel production. If non-alloy special steels are included, it is approximately 80-85 million tonnes.

PRODUCTION OF SPECIAL STEELS

(ingots)

Thousands of tonnes	1965	1970	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984
ECSC (EUR 10) - (Special Steels - Bulletin Spécial de Statistiques from 1976)													
non-alloy ingots					4,546	4,469	4,786	5,066	4,724	4,949	4,277	4,608	
engineering steels					11,266	11,470	12,944	13,911	13,126	13,712	11,933	10,420	
stainless and refractory steels		1,211	1,67	1,220	1,874	1,927	2,063	2,333	2,156	2,000	1,977	2,091	(2.6)
high-speed steels					61	64	59	62	61	51	44	43	
CP/MS steels					12	11	14	18	18	17	18	19	
	(6,000)	12,037	14,659	12,830	17,760	17,941	19,866	21,389	20,086	20,728	18,250	17,118	(19.0)
JAPAN (MITI : Specialty Steels HR statistics x yield)													
HEL steels		884	1,235	1,111	2,329	2,060	2,616	2,678	2,794	3,481	4,360	3,752	
alloy engineering steels		1,855	2,305	2,301	2,194	2,469	3,103	3,216	3,475	3,878	3,186	2,346	
stainless steels		1,538	1,909	1,543	2,065	2,158	1,830	2,136	2,158	1,811	2,064	2,161	(2.6)
(of which, austenitic)									66%	66%	69%		
refractory steels									(50)	(45)	(48)	(58)	
alloy tool steels		106	113	63	84	79	80	99	107	98	105	114	
high-speed steels		21	22	21	25	23	24	25	25	18	18	18	
bearing steels									(761)	(671)	(609)	(620)	
steels (of which, non-alloy)		4,822	6,028	4,905	5,660	6,091	6,075	6,578	6,584	6,339	6,338	7,240	
	(3,015)	9,226	11,612	9,944	12,357	12,880	13,728	14,732	15,143	15,625	16,071	15,631	(19.0)

PRODUCTION OF SPECIAL STEELS (continued)

(ingots)

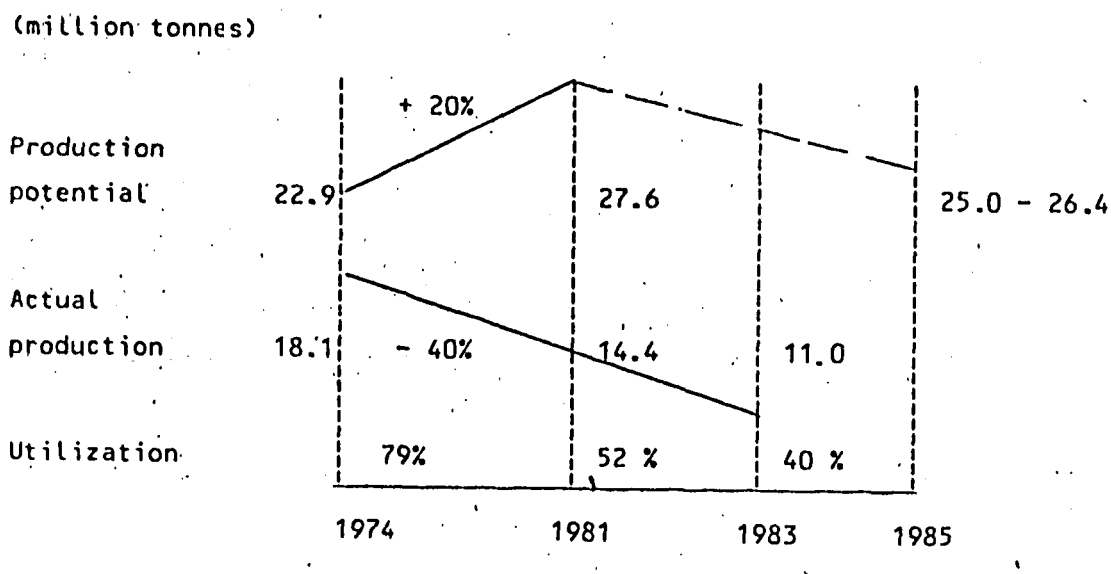
Mio t.

Thousands of tonnes	1965	1970	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984
USA (AISI : Special Steel Production)													
HEL (HSLA) steels			4,347	4,457	4,210	4,654	5,849	6,014	5,182	5,363	3,075		
alloy steels													
Cr			1,292	1,129	1,327	1,323	1,336	1,151	656	720	430		
Ni, Cr, Mo, V			131	140	174	185	232	236	285	489	227		
Cr, Mo			2,245	2,173	1,838	2,097	2,438	2,309	1,847	2,489	1,156		
Cr, Mo, V			172	138	114	128	135	89	130	155	125		
Ni, Cr, Mo			2,022	1,537	1,593	1,591	1,853	1,828	1,356	1,652	810		
stainless steels	1,158	1,950	1,008	1,528	1,696	1,763	1,913	1,514	1,582	1,120			
(of which austenitic)			69%	66%	70%	69%	68%	70%	71%	71%	71%		
other alloys			3,062	3,162	2,187	2,146	2,787	2,715	2,933	3,429	1,245		
Total	(10,000)	(11,200)	15,221	13,744	12,971	13,820	16,393	16,255	13,903	15,879	8,188		

The sector is heterogenious and its definition is still unclear. The Commission intends to follow it more closely. In fact, the Commission wants to prevent this sector running the risk - due to its own weakness or due to the effects of the restructuring of the heavy steel industry - of finding itself confronted in the more or less short term with the same problems as the heavy industry. The analysis of the capacities in the principal subsectors of the special steel industry shows indeed a certain risk of over capacity in the coming years.

Below is an illustration, particularly relating to products at the lower end of the quality range, where production facilities are more and more common to special and ordinary steels both in manufacture and in hot rolling.

A) Special-purpose structural steels, hot-rolled sheet and plate : the facilities used are substantially (93%) co-extensive with ordinary steel making (integrated works).



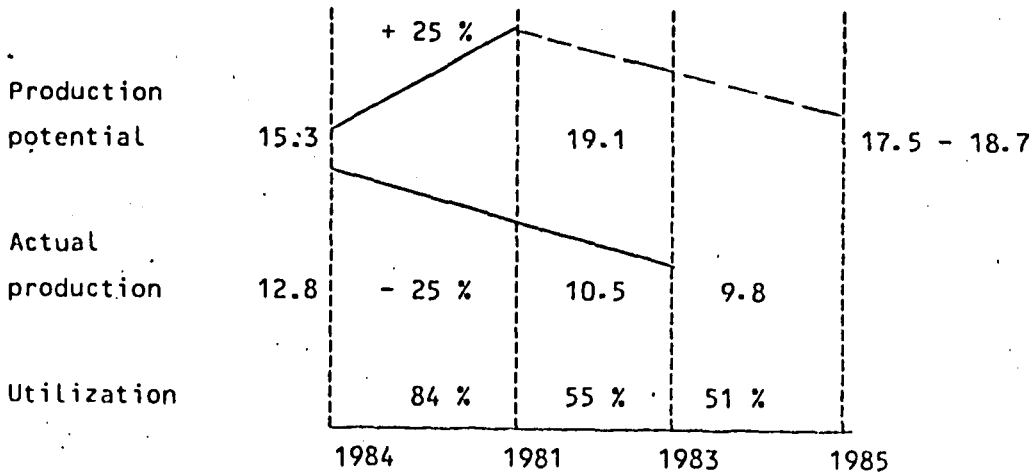
Structural steel sheet accounts for approximately 15% of actual production.

Estimating is complex in the case of the engineering steels, long products, which are more affected by their speciality areas.

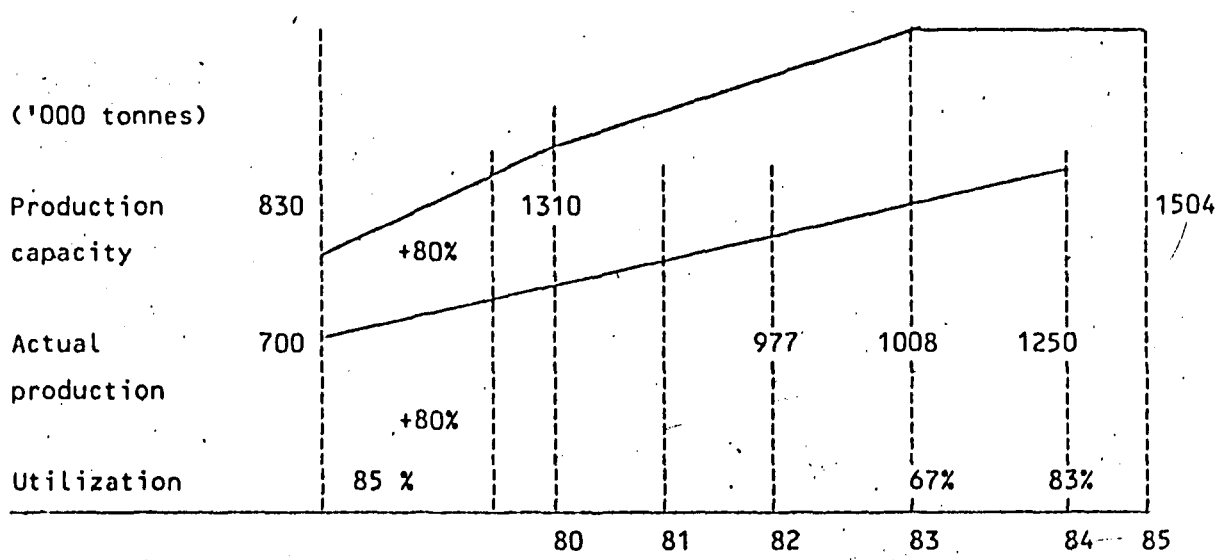
B) Wire rod : a large proportion (60%) is produced using the same facilities as for ordinary steel wire rod (integrated units).

. volume products : .

(million tonnes)



C) Stainless and heat-steels : production lines are generally integrated, except for hot rolling mills.



- Specialities (specialist rolling mill capacity): not identified.

The idea of turning increasingly the steel industry of the highly industrialized countries towards a stronger production of steel with a higher value - consequently special steel - has encouraged a process of developing capacities and production of special steel in the countries of the Community which is characterized by a lack of coordination and cohesion vis-à-vis the demand from the market.

As far as production is concerned a rather important phenomenon of substitution begins to show itself in this sector : the progress in the production techniques of ordinary steel (both crude steel and finished products) has permitted the elaboration of products with such chemical and physical qualities that they provide an advantageous alternative to certain non-allied special steels. It is reasonable to suggest that this tendency is going to continue in the years to come.

A very close cooperation between the Commission and the industry is needed to prevent these risks. In this view the Commission services and the industry experts are prepared to study solutions to the problems of definition and classification of special steels, which is the first necessary step in order to be able to develop realistic analyses of the special steel market.

The sector disposes however of certain strong points, that have enabled it to overcome the crisis of the years 1982-83 and that in particular are the technological level of the installations, the good quality of the products and the introduction into the world market.

CHAPTER IV

Research and Development

Despite the profound changes that have taken place and the difficult financial situation that has existed in the industry, the last five years have seen impressive technological progress. In particular, restructuring has brought about modernisation and the wider adoption of continuous casting in the Community. This, along with other technological advances has brought about energy savings as well as significant improvements in yield and quality.

Nevertheless, over the medium-term, the industry will still be faced with formidable competition, with nearly stagnant consumption in domestic markets and little change in export opportunities. Also, some further reduction in production capacity may occur to bring capacity more in-line with expected crude steel requirements.

The structure of our steelmaking capacity in the Community today is such that enormous investments have been made in large integrated works based upon the blast furnace and the oxygen steelmaking process with continuous casting being increasingly adopted to replace the conventional ingot-route.

Some three quarters of the Community's steel is produced in this way while the remaining quarter comes from the steel scrap-electric arc furnace route. Over the medium term, there will be no radical change to this situation so it is understandable that much of the process-oriented research will be directed at achieving relevant incremental improvements to these technologies. In parallel with this effort, however, there will remain the need for some effort to be directed at developing radically new process routes.

While recognising the significance of process-oriented research and the need, wherever possible, to improve manufacturing facilities through innovation, the present situation in the industry is calling for a major shift in emphasis to ensure that R & D becomes more market-driven with particular stress being placed on the major consuming sectors such as motor vehicles, construction and machinery (including electrical). It is

vital that product-oriented research is effective in defending traditional markets as well as in extending the areas of application and uses for steel. Issues of major concern will include substitution by other materials, achieving improved properties (corrosion resistance, higher strength, improved toughness), more consistent quality, increasingly stringent consumer specification and the role of research as a stimulus in establishing new and up-dating existing codes and standards by the appropriate bodies.

In this respect we should also develop on a very practical basis detailed scientific and technical information for the consumers in order to get a promotional effect inside and outside the Community. This effort is indispensable both for meeting the needs of consumers and for stimulating concrete innovations.

Therefore, the two major objectives for research and development on steel must be :

- the achievement of improved cost-competitiveness in the production and processing of steel along with the enhancement and greater uniformity of quality in its various aspects.

- the stimulation of steel consumption, in domestic and export markets by the development of improved steel grades and new uses for products technologically and economically more advanced than those of our competitors.

Some of the main factors that will influence the direction of technological and innovate effort in both process-oriented and product-oriented research over the medium-term are outlined below :

1. Production and Processing of Steel

At the present time the European steel industry has a secure supply of raw materials. From the energy standpoint, coal will remain the primary energy source and further effort will be directed at energy economy and energy substitution in order to achieve cost-savings. The direct use of coal (1), involving alternative production technology, is another area of interest offering the advantages of reducing the need for costly metallurgical quality coals and of eliminating the need for coke ovens which are a major investment item.
As far as iron ore is concerned, the present trend is to use, primarily, ores that meet extremely high quality requirements with respect to their alkali and phosphorous contents. For the longer term, however, it would be valuable to develop procedures that will permit the blast furnace to operate with lower quantities of these high grade ores.

The increasing quantities of energy being generated from nuclear power in the Community focuses attention on production technologies that combine coal and electricity. This could be an area of growing interest for European steelmakers over the longer-term and is one in which plasma metallurgy assumes a particular importance.

In iron and steel production, increasing steel yield provides a valuable means of reducing materials costs through the lowering of iron ore and energy requirements. While considerable improvements in yield have been made in recent years largely by the adoption of continuous casting, the scope for further progress merits careful examination. In addition continuous casting will remain a key area for research to include improving casting machine performance (both productivity and product quality), increasing casting speeds, broadening the range of steel grades that can be cast continuously as well as the further development of simpler and less costly casting machines e.g. horizontal continuous casting. The latter method will also provide the only economical way to cast, in small quantities, many high alloy steels.

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(1) see also Chapter VII, section 3, second point

Increased yield, of course, has implications for scrap availability which, over the longer-term, could be important for the steel industry.
Furthermore, scrap demand will increase with any growth in its consumption in oxygen steelmaking or with any expansion in electric furnace steel production. These developments raise questions concerning the scrap market, scrap quality, up-granding techniques, residual elements and the utilisation of alternative materials (e.g. pre-reduced iron) for which technological solutions may, for some aspects, be sought.

In rolling, the integration of the continuous casting machine with the rolling mill ("hot connection") remains a priority objective for research and will involve changes in casting and rolling technology as well as in plant organisation. In addition, further improvements will be sought in the control of dimensional tolerances and in the uniformity of quality of rolling mill products.

Finally, it is evident that computer process control, which is now involved in virtually all facets of steelmaking, will continue to make a major contribution to technological innovation in the industry. With new technology continuously coming into this field, research must ensure it is adapted and fully exploited to improve existing systems as well as to develop new areas of application for the steel industry.

2. Stimulation of Steel Consumption

Steel consumption, in industrialized countries as expressed in tonnes, is quite clearly at a standstill. The market is practically saturated and at the present time users and consumers are only interested in products based on existing technologies or using new grades for higher performance products.

This new market configuration is due to the fact that :
- components are better designed and show greater reliability;
- steel grades have better properties;
- in some cases steel uses have decreased in the face of competition from other materials.

The situation should therefore no longer be seen in terms of quantity or tonnes produced, but in terms of quality and value added. Production units must be flexible enough the adapt swiftly to the demand on internal and external markets. This demand should also be stimulated be encouraging the use of steel among users. Steel grades must be promoted with properties that make them indispensable to the development of modern technologies.
To offset substitution by other materials (aluminium, plastics, etc), the long-term profitability of which often needs to be demonstrated by way of a global economic evaluation (cost of raw materials, processing, shaping, recycling, etc), research efforts must continue to be geared to the specific parameters of steel, especially :

- basic metallurgical studies
- development of grades resistant to agressive environments
- development of coated steel
- design of alloys with properties
- consistency of product properties and tolerances
- improvement in the quality and reliability of measurements
- preparation and circulation of practical guides for users.

The main fields of application to be taken into account are :
- transport
- metal structures and, more generally, infrastructures
- energy
- packaging
- machinery and engineering.

As regard the use of steel, existing contacts with manufacturers and consumers must be extended so as to make for better transmission of information and availability of research results.

To sum up, efforts must be channelled towards :
- further knowledge of the properties of steel
- improved competitiveness of steel and steel components
- greater product quality and reliability
- better standardization and harmonization of recommendations and codes.

These points must be seen in the current general context and, in particular, in the current economic context. Account must therefore be taken of :

- the cost of energy
- environmental problems
- savings on alloys.

Finally, as regards the financial resources required mention should be made of the fact that aid to research and development is vital to the Community steel industry. By comparison, the Japanese steel industry sets aside some 1.2 to 1.5% of its annual sales for research and development. This is approximately double the amount set aside in Europe.

Bearing in mind the ups and downs of the current economic climate, a dynamic R & D policy in steel thus requires aid from the Commission that will gradually increase in real terms.

In conclusion, ECSC R & D projects must make a real contribution to the establishment of joint research objectives in the industry, with the emphasis placed on both short-term and medium-term requirements and the selection of suitable basic projects.

CHAPTER V

PRICES AND CONDITIONS OF SALE

1. General

Constantly-recurring business cycles lasting for five years or so were a feature of the first few decades of this century. In general, they comprised three years of stability, and then one year of comparative depression immediately followed by a year in which there was a fairly marked recovery. In such circumstances, prices were always fairly stable in general and prices rarely slumped. The sound financial position of steel firms before the war bears witness to this.

The situation is now completely different. There can only be a significant price increase of steel products in a situation in which there is likely to be a certain supply shortfall, and prices are stable only if demand just slightly exceeds supply.

In all other cases, the excess supply cuased by the existence of overcapacity, results in a reduction of prices, which is normal under free competition. Since the periods with excess supply have in time become longer and longer, problems have arisen which have forced the Commission to take stabilizing measures. To this effect it has had recourse to the principles laid down in Article 3 of the ECSC Treaty which states that "the Institutions of the Community shall ... ensure the establishment of the lowest prices, while allowing necessary amortization and normal return on invested capital".

This fundamental provision appears in the Treaty because it was drafted at a time when the depleted state of the steel industry in Europe following World War II suggested that there would continue to be a steel shortage, or at least supply difficulties, for a good many years. This explains the provisions of Article 60 and the various basic decisions adopted by the High Authority. Therefore the basis for healthy competition within the Common Market is the fact that unfair competitive practices and discriminatory practices among buyers are prohibited.

In accordance with Article 60, a producer cannot charge more than the prices in his price list. However, he can reduce his prices to align them on the lowest delivered prices resulting from the price list of a rival producer established at another point of sale; this represents at least a price cut in terms of the transport costs. In addition, the various elements of flexibility introduced by implementing decisions have made it possible under certain conditions for rebates or special prices to be offered for various reasons: conditions specific to certain categories of users, rebates for indirect export, for substandard products and seconds, prices for non-comparable transactions. Furthermore, Article 60 does not prevent firms from aligning their offers on the conditions offered by firms outside the Community. In general, therefore, Article 60 has resulted during periods of latent over-supply, in a levelling down of selling prices.

The reduction in prices remains within limits as long as the relation between supply and demand is not fundamentally disturbed, and on the condition that the companies observe the price rules laid down in the ECSC-Treaty. During the past years these conditions were not always satisfied to a sufficient extent. Therefore, the Commission has had to take measures to limit supply, by imposing production quotas pursuant to Article 58. Nevertheless, it had to recognize that, in a number of cases, companies had violated the price rules. In view of these infractions, it has imposed sanctions on the companies involved.

2. 1973-1974: The last two exceptional years

A combination of several cyclical factors (economic upturn, depletion of stocks or even a shortage psychosis) sparked off a sudden boom in demand as from mid-1972. Orders for finished ordinary (i.e. non-alloy) steel products increased (compared to 1971) by an average of 55% on the Community market and 45% on the export market (giving an overall average of 53.5%) in 1973 and 1974. At the end of 1973 orders could not even be placed, or else takers could be found only if a surcharge was paid. This set off a process of rapid increases one after the other. Between early 1973 and late 1974 the prices rose by between 60 and 90% (the actual figures varying according to country and product) except in the case of cold-rolled sheet which increased in price by only 35 to 40%. The prices of products most in demand,

such as concrete reinforcing bars and heavy plate, more than doubled. Consequently, the accession to the Community of the United Kingdom, Ireland and Denmark, and the extension of the Article 60 price rules to five EFTA member countries (1) took place without hiccups and without the lower level of prices in these countries affecting the prices charged within the Community of Six.

There came a time when the Commission, concerned about the rapidity and size of the producers' price increases,had to interviene in the market. In May 1974 it even decided to slow down the rate of increase over a period of eight months by not allowing new prices to be charged until a fortnight had elapsed from the date of their notification. Import duties for certain producers were even lowered for a short time period, in order to encourage imports and to alleviate the pressure in the internal market. In the light of later developments, it did not have to implement its intention of setting maximum prices pursuant to Article 61 of the Treaty.

3. 1977-1985: The crisis years

The slowdown followed by the complete halt observed in the second half of 1974 but which was really felt as from the first quarter of 1975 once the order book had dwindled, immediately set off a price slump. In the early months of 1975 prices fell by between 40 and 45%.

In April 1977, after establishing that the indirect means available under Article 46 were insufficient and that a manifest crisis was in the offing, the Commission set minimum prices for concrete reinforcing bars which had reached abnormally low price levels out of all proportion to production costs. It also published guidance prices for the main steel products in order to incite firms to adapt their prices to be compatible with general interest. In January 1978, the Commission set minimum prices for two other particularly sensitive products: merchant bars and hot-rolled wide strip.

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(1) Austria, Finland, Norway, Portugal and Sweden.

Having acknowledged that the Community steel industry was in a state of manifest crisis, the Commission set up in October 1980 a system of production quotas pursuant to Article 58 of the Treaty.

In January 1982 the Commission published price guidelines indicating that firms' conditions of sale should secure for them an increase in revenue of aproximately 15% to enable them to restructure and bear the regional and social consequences.

In January 1983, after ascertaining that the market situation had prevented the guidelines from being fully successful, the Commission published new guidance prices for the main products with a view to attaining the above objective. In January 1984 it had to set minimum prices below the guidance prices, although they have been progressively brought closer to the guidance prices as a result of the increases in April and October 1984 and April 1985.

In this way the Commission has tried to pursue a realistic policy which was adapted to the market situation.
Various other exceptional measures have been introduced to back up these measures concerning quantities and prices.

Mention should be made of the price rules for dealers, the guarantee arrangements, the certificate of conformity and production certificate, and the accompanying documents.

As a result of these measures, which have made it possible to avert excessive imbalance between Member States, the prices noted for most of the products in the first half of 1985 have reached levels such as to give fresh hope and confidence to firms which have already made the requisite effort to improve their performance. The prices obtained in 1984 were 40-50 % higher than those of 1974/75, but over this ten-year period, for example, industrial wholesale prices varied by almost 80-90 %.

4. Export sales

In general, export sales have almost always produced less income than that from internal sales.

The Commission has never gone in for price-support measures for sales to non-Community countries. Furthermore, such measures would have had little effect on a world market where competition is keen and even on occasions cut-throat, particularly where the new steel-producing countries are concerned. Consequently, prices for large-scale exports have rarely been genuinely attractive, especially as the very considerable transport costs mostly constitute a competitive handicap.

For long periods export prices have been as much as 20% lower than internal prices, which were not always profitable. Generally speaking, for an equivalent value, FOB prices represent an average reduction of 4-5% in a firm's income to cover the export agent's commission and the costs of transport to the port of consignment.

Consequently, export prices have of course often had a fairly considerable although indirect impact on the prices charged within the Community. In particular those consumers within the Community who are export-oriented have been urged therefore to demand price reductions of indirect exports, in order to face competition in the world markets for their transformed products.

The fact remains that for a number of firms, sales to certain non-Community countries represent their natural outlets which they are anxious to keep.

5. Import prices

Since 1978 the Commission has negotiated and renewed, year by year, arrangements with the 15 main countries which export steel products to the Community [1]. Under these arrangements the importing countries have undertaken not to aggravate the imbalance within the Community by bringing their deliveries into line with the volumes which Community producers are permitted under the production quota system and to charge prices based on Community provisions, less a "penetration

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(1) Austria, Finland, Norway, Sweden, Spain, Bulgaria, Hungary, Poland, Romania, Czechoslovakia, Japan, South Korea, Australia, South Africa and Brazil.

margin" not exceeding 6%. In return, the Community has declined to take retaliatory action, and in particular anti-dumping measures, vis-à-vis these countries as far as they respected the terms of the arrangements.

For the other non-Community countries which have not concluded arrangements with the Community, the Commission has drawn up and published lists of guide prices so as to warn them that imports at prices below the levels contained in these lists might, in case of prejudice being established, be liable to give rise to anti-dumping suits. Systems for monitoring all these imports have been introduced in conjunction with the authorities in the Member States on the basis of a system of automatic licences which makes it possible to check in advance the quantities and prices of goods to be imported into the Community. In cooperation with the non-Community countries which have concluded an arrangement or as a result of anti-dumping actions, the Community has succeeded in maintaining imports at a traditional level and avoided price drops which would have called into question the pursuit of Community objectives.

6. Currencies

The strength of the various currencies is an important factor where prices are concerned. A weak currency affects not only the particular country in question but also neighbouring countries and possibly even the Community as a whole. Like the devaluations of the French franc in 1957, 1958 and 1969, which virtually obliged all the producers in the Community of Six to bow to the French price level for many years, the fluctuations between March 1978 and May 1983 in the European Monetary System currencies have been a major cause of disturbance in the price equilibrium sought by the Commission. For example, the tension created between the Italian lira, the French franc and Belgian and Luxembourg francs on the one hand and the revaluation expectation for the German mark on the other has been a constant source of concern in the efforts to achieve a uniform level of prices throughout the Community. The fluctuations of non-Community currencies such as the yen and especially the US dollar also affect Community prices, sometimes to a considerable extent. In June 1973 the fact that the dollar had fallen to a record level obliged Community producers to

abandon this currency for their export quotations, and this had an adverse effect on prices despite the exceptionally buoyant market at the time.

Even more recently, the heights reached by the American currency have penalized Community producers by significantly increasing production costs (purchases of raw materials and energy products), although at the same time Community exports have been stimulated.

7. The medium-term prospects

This chapter has so far focused mainly on the past and the various price support and control measures, including those still in force. The purpose of this was to make it possible to get an idea of the possible consequences of a return to a situation of normal competition in accordance with the provisions of the ECSC Treaty. The various exceptional crisis measures (concerning production quotas, minimum prices and all the other flanking measures) can be expected to progressively dismantled. Aids to the steel industry will run out in December 1985.

The steel industry in the Community, which was on the brink of disaster, has made important restructuring efforts and is making plans for a future in which it can once again play a normal role. Since, under the best assumptions, steel consumption is expected to stagnate, steel prices can not be foreseen to be strongly supported by the market. It is therefore likely that future price increases can be no more than a strict adjustment of prices to variations in production costs (raw materials, energy, wages and financial charges). For a product such as steel which is not very specialized, it will thus become increasingly important to achieve a cost per tonne which is as low as possible.

This will only be achieved with modern production equipment and constant efforts to improve productivity and to avoid overcapacity. Only the most efficient enterprises will be capable of adapting to this new situation. Under pressure from users, who are themselves eager to maintain their ability to compete on external markets, the best-placed steel companies will not be able, nor will it be in their interests, to aim at price levels which other, less-efficient firms

might like to see artificially higher. It is therefore on the cards that in the years ahead the increase in the productivity of steel firms will be passed on to steel-using firms in the shape of a comparative reduction in prices.

The enlargement of the Community market with the accession of Spain and Portugal and the maintenance of relations with the EFTA member countries should not cause any further disturbances within the ECSC market.

On the other hand, competition from State-trading countries which have made their presence felt in recent years and are improving their products, might tend to undermine prices within the Community. Externally, the rapid progress being made in steel production in many industrializing countries has directly affected the Community countries which traditionally export steel. Not only have these new producers arrived as competitors within the Common Market, but also the outlets for Community producers in the countries where these new producers are based have been considerably reduced. The Community steel industry will therefore be even less able than before to rely on exports to keep going. It will have to endeavour to keep its leading position by offering better-quality products and new products which are not yet manufactured in these industrializing countries.
The Community steel industry will, in particular, have to strive for a bigger share of the new world export markets.

The role of the ECU, which is gradually becoming a fully-fledged currency, should draw the attention of European steelmakers. It should be studied, in particular, to what extent the use of the ECU would make it possible to eliminate currency distortions. It should not be ruled out that tariffs and conditions of sale but also contract prices and payments will be made in ECU. The Community steel industry should also more often consider to use the ECU in contracts for the purchase of raw materials and energy products which have hitherto more often than not been in US dollars. This would, for example, have been a way of averting what happened in the first quarter of 1985 when the rise of the American dollar had such a big impact on steel production costs in Europe.

The crisis over the last ten years has brought home the importance of modernization and rationalization and the urgent need to reduce capacity and strive for product innovation.

In the future, low prices are unlikely to be offset by higher quantities. Sales prospects will become less and less bright for simple products, on the contrary they will be potentially better for quality and special steels.

Employment in the Iron and Steel Industry of the Community

INTRODUCTION

The Memorandum "General objectives 1985" disseminated in February 1984 (1) was followed up by Commission proposals concerning a social support scheme for restructuring in the steel areas of the community, dated April 1983 (2).

Based on the prospects described in "General objectives 1985", the Commission proposal contained an estimate of the foreseeable employment trend in the ECSC steel sector for the period 1983 to 1986 and a programme of measures designed, with the help of Community aid, to facilitate the readaptation and reemployment of persons threatened with the loss of their jobs. This programme followed a first "social volet" adopted in 1981 which covered various measures implemented in the period 1978 to 1982.

1. Background

a) Changes in total employment, by steel areas and regions

The data described below relate to the period starting in the year when the first signs of the trend towards a reduction of workers in the ECSC steel sector appeared. Three reference years have been chosen :

1974 : year in which two Community records (without Greece) were achieved :

- 155.6 million tonnes of crude steel were produced
- 795 700 workers were in employment in December 1974.

1980 : year which saw the implementation in October of Article 58 of the ECSC Treaty, the effects of which were felt from 1981.

1984 : last year for which incomplete but useable statistics are available for this Memorandum.

(1) document COM(83)239 final/2 of 20.2.1984

(2) document COM(83)158 final of 13.4.1983.

An examination of the development of persons employed in the ECSC steel industry betwen 1974, 1980 and 1984 shows a considerable drop in numbers which led, in certain regions where this industry had traditionally been concentrated and represented, in 1974, a large and sometimes dominant share of the labour market, to serious and in certain cases dramatic social upheavals.

The ECSC steel industry, without Greece, suffered job cuts between 1974 and 1984 (see Table A) totalling 349 800 jobs or 44,0 % of persons employed in December 1974. Over ten years, 35 000 jobs were cut on average every year. This can be compared with the rates observed for the periods 1974-1980 and 1980-1984 which amount to 33 000 and 38 000 posts respectively, but which apply to a progressively shrinking workforce and therefore represent a larger share of the workforce.

The sacrifices operated between 1974 and 1984 by the steel industries of member countries were not all equal in extent, some differing sharply from the Community average (see Table A). Of all the Community countries, the United Kingdom suffered, in terms of the number and percentage of original staff, the most drastic cutbacks, totalling 132 500 jobs or 68,2 % in comparison with the Community average of 44 %.

Furthermore, during the first period (1974-80), job reductions were far higher than the average in France, Ireland and the Benelux countries, whilst in the following period (1980-84), these reductions were higher in Germany, Italy and Denmark.

Table B compares the trends in each member country and the Community total for job losses and the production of crude steel.

It should also be noted that in each of the periods 1974-1980, 1980-1984 and 1974-1984, the number of job losses was constantly and considerably higher than the reduction in the volume of production.

Job losses in %			Drop in production in %		
1974/80 (1974=100)	1980/84 (1980=100)	1974/84 (1974=100)	1974/80 (1974=100)	1980/84 (1980=100)	1974/84 (1974=100)
- 24.8	- 25.4	- 44.0	- 17.9	- 6.5	- 23.3

These disparities are explained by two main factors : rationalization and modernization allied with the automation of production, together with the increasing share of production held by the more efficient continuous casting process which requires less personnel than other processes, and which rose from 12 % of total crude steel production in 1974 to approximately 61 % in 1984.

The steel regions and areas in the member countries were all severly affected by the job losses.

For the member countries as a whole, with the exception of Greece, employment fell in 1984 in relation to 1974 by 44 % and in relation to 1980 by 25.4 %. These Community averages were exceeded in the following regions (see Table D1 and D2).

Member countries - Regions	Period 1974-1984	Period 1980-1984
In Germany		
Sarre	44.3 %	
Arnsberg-Münster-Detmold		27.1 %
In France		
Champagne - Ardennes	75.8 %	55.6 %
Nord - Pas-de-Calais	44.4 %	
Lorraine	57.1 %	
In Belgium		
Hainaut-Centre-Borinage	- 53.8 %	
In Luxembourg		
	46.0 %	14.8 %

In the United Kingdom

Scotland	- 64.0 %	
Wales	- 68.5 %	- 34.9 %
Norther Region	- 72.8 %	- 55.3 %
North-West Region	- 72.8 %	- 40.0 %
Yorkshire	- 58.2 %	- 46.3 %
Other Regions (South East, West and East Midlands)	- 86.8 %	- 54.8 %

These figures that show throughout the United Kingdom the regions where the steel industry was located were affected, in the two reference periods, to an extent well above the Community average. Only the Italian iron and steel industry, although it too underwent severe cutbacks, is on the whole healthier than the Community average and, in the case of the mergers of the Abruzzi, Latium, the Marches, Molise, Tuscany and Umbria, even recorded an increase between 1974 and 1984 in the number of employees of the order of 4.4 %.

2. Characteristics of employment

a) Volume and duration of work

The analysis of the statistics on the volume and duration of work in the iron and steel industry must entail a very cautious interpretation of the figures obtained and take account, in particular, of the area they cover, which can differ sharply from one member country to another according to the system of shiftwork and the rules or social arrangements applied to time spent and paid time. In certain countries, paid time is treated either fully or in part like time actually worked. In other member countries, however, a distinct line is drawn between time spent on effective production and time which, although remunerated, is not spent on production.

Subject to these reservations, the comparative development of the four parameters selected gives the following results for the member countries which provided data for the period 1980-84; these figures represent 99.5% of crude steel production and total persons working in the steel industry in the Community without Greece.

	Production crude steel		Total workers annual average		Numbers of hours worked by total workforce		Annual duration of work based on annual average of total workers	
	Million t.	Ratio 1984/1980	1000 workers	Ratio 1984/1980	1000 hours	Ratio 1984/1980	(Weighted averages)	Ratio 1984/1980
1980	127.0	100.0	633.0	100.0	(1) 963.5	100.0	(1) 1.625	100.0
1981	124.5	- 2.0	566.2	- 10.6	899.7	- 0.6	1.589	- 2.2
1982	109.8	- 13.5	532.9	- 15.8	820.0	- 14.0	1.545	- 4.9
1983	108.0	- 15.0	491.6	- 22.2	743.2	- 22.9	1.512	- 7.0
1984	118.7	- 6.5	457.7	- 27.7	714.7	- 25.8	1.562	- 3.9

1) partial estimate

With the exception of 1981, it will be seen that there is a parallel in the period 1980-84, in relation to 1980, between the reduction in the number of hours worked and the reduction in total workers.

The production reductions imposed under Article 58 of the Treaty started to be felt in 1981, but it was in 1982 and 1983 that they had the greatest effect. The Community iron and steel industry has, principally since 1982, made considerable progress as regards the volume of work/volume of production ratio. The results obtained are particularly significant if one compares 1983 and 1984 when cuts in the number of workers totalling 6.9% corresponded to an increase in steel production of 9.9%. It should, however, be noted that 1983 was, in the period 1974-84, the most unfavourable year for the steel industry.

In addition, the statistics received by the Commission show that the annual duration of work for all workers and staff , expressed as a weighted average, changed only slightly between 1980 and 1984, dropping by 3.9% (see Table 6).

There was also a very distinct improvement of the situation regarding the number of hours not worked, in particular between 1983 and 1984. The monthly average shows the following trend between 1981 and 1984:

	Number of hours not worked in thousands (monthly average)	% change /1981
1981	2.166	100.0
1982	3.659	+ 69.0
1983	4.462	+ 116.6
1984	1.836	- 15.2

The Federal Republic of Germany achieved the most progress in this field. From 1983 to 1984, the hours not worked dropped by 84.8%, whilst the production of crude steel rose only by 10.2%.

It therefore seems that a balance is gradually being achieved between employment and the volume of production. It is regrettable that this improvement could be obtained only at the cost of redundancies.

b) Production time per tonne of crude steel

Production

In Tables C1 to C3, F, G and K, the hours of work, the time spent per tonne, and the hours not worked were calculated on the basis of total staff, workers and employees, on the premise that workers directly involved in the production of steel or in work directly connected with it worked the same number of hours as the employees. Owing to the arbitrary separation that had to be made in the statistical questionnaires drawn up by the Commission, it is possible that a share, although small, of the hours of work relates to operations not directly connected with crude steel production pure and simple.

As shown in Table F, for the Community as a whole, not including Ireland, Denmark and Greece, production time per tonne of crude steel was as follows:

(in hours and hundredths)

1981	1982	1983	1984
7.23	7.46	6.88	6.02

The development of productivity ratios was as follows:

1981-1982	1982-1983	1983-1984
- 3.08 %	+ 8.43 %	+ 14.29 %

As in the case of production trends in relation to the total number of workers / production times for crude steel rose between 1981 and 1982, and then dropped between 1982 and 1983. This is to a large extent due to the fact that there were more cuts in steel production in 1982 and 1983 than there were redundancies.

Although the improvement in the productivity index in 1983 and 1984, of the order of 14.29 %, reflects a certain improvement of the situation, it must be seen in its true context, namely, the very clear upswing in the steel sector between 1983 and 1984.

The improvement noted for the period 1980-84 is also in no small part due to the progressive expansion of continuous casting in all integrated and automated production processes. Such processes largely eliminate preparatory work, breaks in rhythms and loading, and halts for maintenance and repair work. As a result, fewer but more specialized shifts are required for an equal production volume.

3. Employment prospects in the iron and steel industry in 1990

Forecasting employment in the iron and steel industry in 1990 is hazardous owing to the many factors to be taken into consideration, some of which are not covered by the laws of economics nor by Community action.

It is an inescapable fact that employment in steel will in the next six years be subjected to severe cutbacks.

Even if one accepts the most favourable hypothesis for 1990, i.e. a production of 120 million tonnes of steel, the ongoing modernization of the production processes, recourse to automation, the growing extent of continous casting and integrated on-line production, the search for a higher hourly yield and lower costs will necessitate further sacrifices. In addition to the job losses arising from these changes, there will be the departures which should have taken place before 1984 and which were postponed for humanitarian and social reasons and in order to avoid traumatising certain regions and areas which are particularly vulnerable owing to the economic weight represented of the steel industry in their total activities.

It should be added that the reductions could have different effects on employees and on workers. It seems that restructuring and job losses have created a more than normal increase (notably in France and the United Kingdom) in the ratio of staff to workers directly involved in production.

This phenomenon can in part be explained by the fact that permanent shutdowns of installations generally have a more immediate effect on production workers, whereas redundancies in the peripheral services (technical and commercial departments, administration, maintenance, repair workshops, stores, etc), in most cases common to several production units, usually follow some time after. The staff status of such personnel has also contributed to this disparity.

At the end of 1984, the breakdown of workers and staff was as follows in the Community, with the exception of the Netherlands, Ireland, Denmark and Greece. Persons in employment in steel represent 91,3% of the Community total in the ten member countries (percentages are also given for the major producer countries):

	Community	Germany	France	Italy	United Kingdom
Workers	71.6 %	75 %	57 %	79.2 %	67.8 %
Staff	28.4 %	25 %	43 %	20.8 %	32.2 %

In the light of these considerations, and taking account of the decisions already adopted or established in principle by governments and groups of enterprises on the basis of decisions adopted by the Commission as regards restructuring in the steel industry, the following estimates are principally based on the parameters given below, for the Community of Ten:

- Crude steel production 1984 — 119.4 million tonnes
  " " " 1990 — 120.0 " " (most favourable hypothesis)
  103 " " (most unfavourable hypothesis)
- Share of continuous casting in total production of crude steel
  1974 : 12.0 %
  1980 : 36.4 %
  1981 : 46.0 %
  1982 : 53.0 %
  1983 : 61.0 %
  1984 : 61.0 %
  1990 : 75.0 %

Average production time per tonne of crude steel	1984 : 6 hours 15/100ths 1990 : 5 hours 70/100ths
Average annual duration of work	1984 (weighted values) 1 562 hours 1990 (weighted values) 1 406 hours

Taking account of the margin of error which is inevitable in such estimates, and on the basis of 120 million tonnes of crude steel produced in 1990 the employment trend in the Community iron and steel industry between 1984 and 1990 should lead to reductions in the workforce comparable to those recorded in the last three years.

It should be noted that changes in production processes and unexpected advances in technology can influence the forecasts.

Obviously, should the least favourable hypothesis of 103 million tonnes prove correct, job reductions will probably increase out of proportion to the reduction in production, taking account of the number of persons in the least productive enterprises.

4. Qualitative aspects of the development of the workforce

In the analysis of the structure of the workforce and the foreseeable trend up to 1990, three aspects are worth examining in detail: development of age structure, skill requirements and the reduction in working time (Table E).

a) Age structure of workforce

The development of the age pyramid of the Community steel industry workforce between 1981 and end 1984 is shown in the following graph:

Distribution by age group of
ECSC steel industry workforce
at end 1981 and end 1984

The figures show a drop in the 25-50 age groups, combined with a gradual reduction in the young age groups and the over-50 age group. This trend reflects the slowing-down of recruitment at the base of the pyramid and policy of accelerated retirement operated by enterprises with the aim of adjusting the workforce to declining production levels.

This trend is liable in the longer term to create a basic imbalance in the distribution of age groups, characterised by the ageing of the workforce and failure to adjust to increasing requirements as regards skills.

With the prospect of a large number of departures being necessary between 1985 and 1990, it is probable that the trend will continue over that period and that early retirement in particular will continue as the annual groups reach the requisite age. A more detailed estimate of the number of persons involved is complicated by a certain number of factors: uncertainty as to the minimum number of skilled young workers who will have to be recruited, the number of workers leaving for personal reasons (or voluntary departures - turnover) and the number of workers eligible for early retirement who will, nevertheless, be retained for production and internal management training because of their specific qualifications.

On the basis of the trends recorded from 1981 to 1984, it can nonetheless be estimated generally that at least 50% of the job losses forecast in the preceding chapter will entail early retirements or similar measures over the period 1985-90.

This overall estimate can vary considerably according to the Member State or undertaking concerned, if one takes account of the number of early retirements that have taken place over the last few years in each country, the accumulated financial cost of this type of measure and the various social considerations which influence early retirement policy. It is already clear that the margins for manoeuvre in certain Member States have become limited.

b) Qualifications required

i) The vocational training situation in the Iron- and Steel Industry has been influenced by two factors in particular in recent years :
- early retirement, and
- a shrinking number of apprenticeships.

In recent years, because of the increase in early retirement, a great number of experienced workers have been lost, and have not been replaced by freshly-recruited workers. On the other hand, the training of apprentices in certain Member States has been reduced, or, where it has continued at the same level, trained apprentices have not subsequently been able to obtain long-term contracts, with the results that the training carried on in the Iron- and Steel industry has been wasted.

ii) The coming five years will underline the need for a higher level of qualified staff, particularly with regard to the following factors :
- new production methods
- automation and informatics
- intensified use of technology with possible significant changes in production
- staff movements caused by restructuring.

As a result of these developments, 75% of the workers will have to receive vocational training in the future, in order to be able to meet the increasing demands both in the production sector and in the technical and other indirect service sectors. At present, up to 70% of workers have received no specific training. Further developments in technology will concern not only metalworking but also in particular the electro-workers, the control services and the administration.

On the other hand, during a restructuring period, when unavoidable staff movements take place, it is an advantage to have as wide a vocational training basis as possible so as to have a more easily transferable workforce.

Moreover, one may expect there to be further significant technological changes in production methods by the end of the period under discussion. These may well have consequences for vocational training needs, which however cannot presently be predicted.

In general, one may conclude that the need for vocational training in the Steel industry in the coming years will be concentrated on :

- an increase in the level of vocational training (assuming a working life of 40 years and an apprenticeship of 3 years, a unified age structure would arithmetically demand that 7.5% of the workforce be apprentices or getting further training),

- the training of highly specialised workers drawn from the workforce itself, in order to cope with latest developments in production methods

- a broad level of general training, in order to allow for optimal transferability of personnel.

c) Reduction in working time

Although working time is far from being uniform in the iron and steel industries of the different Member States, there has been a general trend towards a reduction in recent years. The result of agreements recently concluded between the two sides of industry or on a tripartite basis in this sector seems to indicate that it is still possible to use the reduction of working time as a means of slowing down or even compensating partially for the effect of the expected drop in the number of workers over the next five years.

The possibility cannot be ruled out of a reduction in working time, if only a slight one, over the next five years. If such a result could be achieved without jeopardizing the essential demands of competitiveness and in accord with the two sides of industry, it can be assumed that the logical outcome would be a positive effect on the volume of employment.

5. The social consequences

a) The findings and forecasts referred to above point to the conclusion that the wave of changes and redundancies which has swamped the Community's iron and steel industry since 1974 will probably not die down until the end of 1987.

This addition of a year to the forecasts indicated in the "social volet 1983-86" which set 1986 as the end of restructuring and its immediate social consequences reflects the slippage that has occurred between the decisions to restructure (1) and the actual entry on stream of new, more productive installations. The Commission believes that its responsibility for the restructuring of the steel industry must as before be accompanied by a social support scheme to alleviate the negative effects of restructuring on workers and regions. It will therefore continue the exceptional and substantial effort it has made to date as regards readaptation and reconversion in this sector.

b) The forecasts contained in the "social volet" for 1983-86 estimated the total number of departures in that period at some 150 000 persons. Expected job losses between 1985 and 1990 will for the most part take place in the first three years of the period in question. Taking account of the cutbacks in jobs effected up to the end of 1984, it is hoped that total job losses in the period 1983-1990 will not be much more than the figure given in 1983 for the period 1983-1986.

The hypothesis used in this estimate include the hypothesis of a production totalling 120 million tonnes in 1990.

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(1) Including the elimination of excess production capacity and the closure of obsolete and unprofitable installations.

c) The foregoing analyses show that the various changes accompanying these departures will present certain new and notable characteristics:

i) a diminution in the possibility of using early retirement (due to the disappearance of the higher age groups, and to doubts concerning the financing of this type of measure);

ii) greater pressure on the lower age groups compelling them to seek new employment in other sectors or occupations and often to re-qualify or re-train at considerable personal effort;

iii) the lack of vocational guidance for increasingly large groups of persons transferred without adequate preparation to other duties within the enterprise;

iv) a general and urgent need for vocational training which, if not satisfied, would expose a number of workers to strong competition from younger, better qualified workers or specialists from outside;

v) the use, albeit to a limited degree, of forms of re-organisation of working time likely to contribute to the stabilisation of employment.

Lastly, outside the context of the enterprise, attention has been drawn to the fact that employment problems in the sector are extending to the regions, their development being handicapped by the cumulative effect of job losses, the monoindustrial nature of the economy, the crisis in the coal industry and the level of unemployment which is often one of the highest in the Community.

d) It will be the task of all those concerned, the national and regional authorities, the two sides of industry and the Community to decide what the future developments should be.

The Commission for its part will request that Community financial participation be maintained at a high level for at least three more years in the form of readaptation aid for ECSC workers, the amounts granted to the various types of aid being adjusted according to requirements. It will also propose that the Council extend the 1983-86 social volet up to the end of 1987. As the number of beneficiaries will be approximately the same as initially provided for, the total amount of the cost to the Community of following up the Commission proposal , i.e. 330 million ECU, should be maintained (1).

e) The whole problem of occupational qualifications should be examined in greater depth by all the parties concerned; the Commission should call on the appropriate bodies, such as the Joint Committee for the Harmonization of Working Conditions in the Iron and Steel Industry, to study the problem and formulate suggestions for future action in the light of the possibilities offered by Article 56 (2) (b) of the ECSC Treaty.

f) The problem of the re-integration outside the industry of workers, to which the solution must be based primarily on economic recovery in the regions, will require a continuous effort by the Community and in particular by its financial instruments, which should be aimed more directly at investments resulting in the immediate creation of jobs.

In order to facilitate the re-integration of these persons in a satisfactory manner, the Commission considers that special attention should be given to vocational training initiatives set up by firms which reduce their staff.

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1) See Doc. SEC(83) 127 final of 31.1.1983.

It will also be necessary to ensure that the Community assistance granted in this context is able in future to cover periods of training longer than 12 months.

As regards the creation of compensatory jobs in the ECSC regions, the Commission will continue its efforts as regards the financing of re-conversion, efforts which it has intensified in recent years. It should be noted in this context that the Commission intends to present proposals in 1985 aimed at extending and especially improving the coordination of Community activities in order to provide the best possible support for the various diversification programmes implemented in the catchment areas of the iron and steel industry.

CHANGES IN EMPLOYMENT IN THE EUROPEAN COMMUNITY STEEL INDUSTRY BETWEEN 1973 AND 1984

(not including Greece)
(including trainees)

TABLE A

- end of period -
(x 1000)

	31 December figure	TOTAL EC (without Greece)	GERMAN FEDERAL REPUBLIC	FRANCE	ITALY	NETHER-LANDS	BELGIUM	LUXEM-BOURG	UNITED KINGDOM	IRELAND	DENMARK
YEAR	1973	778,3	228,4	151,7	89,7	23,3	62,4	23,2	196,2	(0,7)	(2,7)
	1974	795,7	232,0	157,8	95,7	25,1	63,7	23,5	194,4	0,8	2,7
	1977	719,7	209,5	143,0	96,6	23,3	49,7	17,4	177,0	0,7	2,5
	1978	685,5	202,8	131,6	95,6	21,3	48,5	16,8	165,4	0,8	2,7
	1979	670,2	204,8	120,6	98,7	20,9	48,7	16,4	156,6	0,7	2,8
	1980	598,0	197,4	104,9	99,6	21,0	45,2	14,9	112,1	0,7	2,2
	1981	548,6	186,7	97,3	95,7	20,9	44,1	13,4	88,2	0,6	1,7
	1982	513,6	175,9	95,2	91,5	20,2	41,7	12,4	74,5	0,6	1,6
	1983	479,2	163,7	90,7	87,1	19,2	39,6	12,9	63,7	0,7	1,6
	1984	445,9	152,5	85,1	75,6	18,7	37,2	12,7	61,9	0,7	1,5
	1973/1974	+ 17,4	+ 3,6	+ 6,1	+ 6,0	+ 1,8	+ 1,3	+ 0,3	- 1,8	+ 0,1	-
	1974-1977 (Average)	- 25,3	- 7,5	- 4,9	+ 0,3	- 0,6	- 4,7	- 2,0	- 5,8	-	- 0,1
VARIATION 1979-1984	1979-1980	- 72,2	- 7,4	-15,7	+ 0,9	+ 0,1	- 3,5	- 1,5	-44,5	-	- 0,6
	1980-1981	- 49,4	-10,7	- 7,6	- 3,9	- 0,1	- 1,1	- 1,5	-23,9	- 0,1	- 0,5
	1981-1982	- 35,0	-10,8	- 2,1	- 4,2	- 0,7	- 2,4	- 1,0	-13,7	-	- 0,1
(year by year)	1982-1983	- 34,4	-12,2	- 4,5	- 4,3	- 1,0	- 2,1	- 0,5	-10,8	0,1	-
	1983-1984	- 33,5	-11,2	- 5,6	-11,5	- 0,5	- 2,4	- 0,2	- 1,8	-	- 0,1
	SITUATION COMPARED WITH 1974 AND 1980 (NUMBERS)										
	1974-1980	-197,7	-34.6	-52,9	+ 3,9	- 4,1	-18,5	- 8,6	-82,3	- 0,1	- 0,5
	1974-1984	-349,8	-79,5	-72,7	-20,1	- 6,4	-26,5	-10,8	-132,5	- 0,1	- 1,2
	1980-1984	-152,1	-44,9	-19,8	-24,0	- 2,3	- 8,0	- 2,2	- 50,2	-	- 0,7
	SITUATION COMPARED WITH 1974 AND 1980 (PERCENTAGES)										
	1974-1980	- 24,8	-14,9	-33,5	+ 4,1	-16,3	-29,0	-36,6	- 42,3	- 12,5	-18,5
	1974-1984	- 44,0	-34,3	-46,1	-21,0	-25,5	-41,6	-46,0	- 68,2	- 12,5	-44,5
	1980-1984	- 25,4	-22,7	-18,9	-24,1	-11,0	-17,7	-14,8	- 44,8	0	-31,8

CHANGES IN EMPLOYMENT LEVELS

IN COMPARISON WITH ECSC CRUDE STEEL PRODUCTION

TABLE-B

Unit : Mitlion tonnes

	Percentage job losses			CRUDE STEEL PRODUCTION						
				Output in millions of tonnes			VARIATIONS			
	1974/1980 1974 = 100	1980/1984 1980 = 100	1974/1984 1974 = 100	1974 (1)	1980	1984	% Q	1974/1980 1974 = 100	1980/1984 1980 = 100	1974/1984 1974 = 100
Federal Republic of Germany	- 14.9	- 22.7	- 34.3	53.2	43.8	39.4	% Q	- 17.7 - 9.4	- 10.0 - 4.4	- 25.9 - 13.8
France	- 33.5	- 18.9	- 46.1	27.0	23.2	19.0	% Q	- 14.1 - 3.8	- 18.1 - 4.2	- 29.6 - 8.0
Italy	+ 4.1	- 24.1	- 21.0	23.8	26.5	24.0	% Q	+ 11.3 + 2.7	- 9.4 - 2.5	+ 1.0 + 0.2
Netherlands	- 16.3	- 11.0	- 25.5	5.9	5.3	5.8	% Q	- 10.2 - 0.6	+ 9.4 + 0.5	- 1.7 - 0.1
Belgium	- 29.0	- 17.7	- 41.6	16.2	12.3	11.3	% Q	- 24.1 - 3.9	- 8.1 - 1.0	- 30.2 - 4.9
Luxembourg	- 36.6	- 14.8	- 46.0	6.5	4.6	4.0	% Q	- 29.2 - 1.9	- 13.0 - 0.6	- 38.5 - 2.5
United Kingdom	- 42.3	- 44.8	- 68.2	22.4	11.3	15.2	% Q	- 49.6 - 11.1	+ 34.5 + 3.9	- 32.1 - 7.2
Ireland	- 12.5	0	- 12.5	0.1	..	0.2	% Q	.. - 0.1	.. + 0.2	+ 50.0 + 0.1
Denmark	- 18.5	- 31.8	- 44.5	0.5	0.7	0.5	% Q	+ 40.0 + 0.2	- 28.6 - 0.2	0 0
TOTAL FOR EUROPEAN COMMUNITY (9 countries)	- 24.8 (6 years)	- 25.4 (4 years)	- 44.0 (10 years)	155.6	127.7	119.4	% Q	(6 years) - 27.9	(4 years) - 8.3	(10 years) - 36.2

TRENDS IN CRUDE STEEL PRODUCTION AND WORKFORCES IN THE COMMUNITY COUNTRIES (YEAR 1976)

TABLE C1

		B.R. DEUTSCHLAND	FRANCE	ITALIA	NEDERLAND	BELGIQUE	LUXEMBOURG	UNITED KINGDOM	IRELAND	DENMARK	ECSC 9	HELLAS	ECSC 10
Crude steel production * 1 000 t		58 252	27 020	23 783	5 840	16 225	6 448	22 379	110	535	155 587	--	--
Workforce (1)	Total end of year	232 037	157 833	95 656	25 100	63 700	23 593	194 347	800	2 700	795 676	--	--
	of which: manual workers	174 000	110 490	78 152	--	53 564	19 824	135 717	--	--	--	--	--
	employees	49 083	47 139	17 443	--	10 136	3 321	52 547	--	--	--	--	--
	apprentices	8 934	204	61	--		358	6 083	--	--	--	--	--
	Total: annual average												
Hours worked: total workforce (2)													
Hours worked per annum and per worker													
Production time per t. crude steel (3)													
Working hours lost (1)													
Total personnel (1)	Entrants of employees												
	Leavers from employers												
	Difference												
	Total												
1) Dismissals and redundancies (1)													
of which manual workers (1)													
2) Retirements (1)													
3) Voluntary resignations (1)													
Total 1) + 2) + 3)													

YEAR 1980

		B.R. DEUTSCHLAND	FRANCE	ITALIA	NEDERLAND	BELGIQUE	LUXEMBOURG	UNITED KINGDOM	IRELAND	DENMARK	ECSC 9	HELLAS	ECSC 10
Crude steel production * 1 000 t		43 838	23 172	26 501	5 272	12 321	4 619	11 278	2	734	127 737	870	128 607
Workforce (1)	Total end of year	197 406	101 940	99 528	21 647	45 220	14 904	112 120	700	2 181	598 046	--	--
	of which: manual workers	144 176	65 729	79 373	--	36 887	11 202	74 511	400	1 639	(413 917)	--	--
	employees	43 434	39 107	20.113	--	8 202	3 415	32 770	100	507	(147 648)	--	--
	apprentices	9 796	104	42		131	287	4.839	200	35	(15 434)	--	--
	Total: annual average	200 955	113 544	100 583	21 049	47 351	16 031	133 359	700	2.496	636.168	--	--
Hours worked: total workforce (2)		304 057	188 379	164 157	32 467	75 501	27 387	--	--	--	--	--	--
Hours worked per annum and per worker		1 513	1 658	1 632	1 542	1 594	1 708	--	--	--	1.584 (a) (b)	--	--
Production time per t. crude steel (3)		6.94	8 13	6.19	6 16	6 13	5.93	--	--	--	--	--	--
Working hours lost (1)		228	108	208	--	297	--	--	--	11	--	--	--
Total personnel (1)	Entrants of employees	24.098	11 459	7.306	2 877	3 968	1 670	7.564	--	282	(59 224)	--	--
	Leavers from employers	31 505	27 172	8 167	2 759	7 697	3 114	51 840	--	863	(133 117)	--	--
	Difference	- 7.407	- 15 713	- 861	+ 118	- 3 729	- 1.444	- 44 276	--	- 581	(-73 893)	--	--
	Total												
1) Dismissals and redundancies (1)		4.123	1 041	273	310	588	35	39.577	238	212	46 397	--	--
of which manual workers (1)		3.975	807	252	--	564	35	30.662	216	204	36.715*	--	--
2) Retirements (1)		4.697	5 972	1.131	611	2 030	669	3.277	--	64	(18 451)	--	--
3) Voluntary resignations (1)		7 066	1 571	3 995	1 472	763	191	4 495		379			

TRENDS IN CRUDE STEEL PRODUCTION AND WORKFORCES IN THE COMMUNITY COUNTRIES (YEAR 1981)

TABLE - C2

	B.R. DEUTSCH-LAND	FRANCE	ITALIA	NEDER-LAND	BELGIQUE	LUXEM-BOURG	UNITED KINGDOM	IRELAND	DENMARK	ECSC 9	HELLAS	ECSC 10
Crude steel production * 1 000 t	41.610	21.245	24.778	5.472	12.783	3.790	15.321	33	612	125.144	909	126.053
Workforce (1) Total end of year	126.635	97.305	95.651	20.911	44.106	13.419	88.247	700	1.743	548.767	..	..
of which: manual workers	135.061	59.987	76.062	..	35.856	9.807	57.949	528	1.313	(376.553)	..	..
employees	41.897	37.204	19.562	..	8.023	3.331	26.807	100	368	(137.322)	..	..
apprentices	9.727	114	37	..	227	781	3.491	72	32	(13.931)	..	..
Total: annual average	192.049	100.230	98.325	20.922	44.765	13.913	86.040	700	1.941	568.833	..	..
Hours worked: total workforce (2)	285.792	167.194	153.099	32.472	69.253	24.039	167.244	..	..	..	..	..
Hours worked per annum and per worker	1.488	1.663	1.557	1.552	1.548	1.728	1.748			1.589	(a) (b)	..
Production time per t. crude steel (3)	6.87	7.87	6.18	5.93	5.64	6.34	10.96	..	..	..	..	..
Working hours lost (1)	397	200	580	103	250	270	406	0	5	2.166	..	..
Total personnel Entrants of employees	19.705	8.124	5.755	1.536	3.478	1.196	8.314	..	154	(47.762)	..	..
Leavers from employers	29.926	15.713	9.632	1.671	4.590	2.681	32.138	..	592	(97.033)	..	..
(1) Difference	- 10.721	- 7.644	- 3.877	- 135	- 1.112	- 1.485	- 23.844	...	- 438	(-49.246)	..	..
Total												
1) Dismissals and redundancies (1)	3.904	439	476	{296	274	60	15.759	10	353	19.591	..	..
of which manual workers (1)	3.647	339	441	{..	259	35	10.247	11	275	15.354*	..	..
2) Retirements (1)	5.370	4.024	2.524	429	1.154	603	9.037	..	40	(23.181)	..	..
3) Voluntary resignations (1)	5.835	1.156	4.147	546	452	315	1.773	..	128	(14.372)	..	..
Total 1) + 2) + 3)	15.109	5.619	7.147	1.251	1.880	978	24.549	(10)	521	(57.144)	..	..

YEAR 1982

	B.R. DEUTSCH-LAND	FRANCE	ITALIA	NEDER-LAND	BELGIQUE	LUXEM-BOURG	UNITED KINGDOM	IRELAND	DENMARK	ECSC 9	HELLAS	ECSC 10
Crude steel production * 1 000 t	35.880	18.403	24.039	4.354	9.992	3.510	13.740	61	660	110.509	933	111.442
Workforce (1) Total end of year	125.946	95.200	91.495	20.158	41.659	12.425	74.475	618	1.629	513.605	..	..
of which: manual workers	126.371	57.498	73.434	..	33.652	8.912	48.736	454	1.199	(350.256)	..	..
employees	39.764	37.641	18.042	..	7.796	3.251	23.253	148	392	(130.267)	..	..
apprentices	9.811	61	19	..	211	282	2.486	16	38	(12.924)	..	..
Total: annual average	181.251	96.764	93.285	20.480	43.104	13.366	81.893	650	1.701	533.094	..	..
Hours worked: total workforce (2)	259.135	154.989	148.922	29.501	62.294	22.997	142.150	..	..	(819.988)	..	..
Hours worked per annum and per worker	1.430	1.602	1.586	1.440	1.445	1.721	1.736		1.545	(a) (b)		
Production time per t. crude steel (3)	7.22	8.42	6.20	6.78	6.23	6.55	10.34	..	..	..	..	..
Working hours lost (1)	1.377	173	785	219	405	430	249	7	14	3.659	..	..
Total personnel Entrants of employees	17.074	8.501	5.177	699	2.062	2.627	5.144	2	155	41.441	..	..
Leavers from employers	27.813	10.450	9.333	1.452	4.508	3.621	18.916	81	269	76.443	..	..
(1) Difference	- 10.739	- 1.949	- 4.156	- 753	- 2.446	- 994	-13.772	- 79	- 114	- 35.002	..	..
Total												
1) Dismissals and redundancies (1)	2.479	205	197	{229	240	20	7.816	1	28	11.215	..	..
of which manual workers (1)	2.193	144	182	{..	223	19	5.926	4	23	8.714*	..	..
2) Retirements (1)	6.721	2.689	1.401	479	1.869	1.150	5.166	7	51	19.533	..	..
3) Voluntary resignations (1)	3.033	1.038	3.256	331	295	312	1.133	5	74	9.477	..	..
Total 1) + 2) + 3)	12.233	3.932	4.854	1.059	2.404	1.482	14.115	13	153	40.225	..	..

TRENDS IN CRUDE STEEL PRODUCTION AND WORKFORCE
THE COMMUNITY COUNTRIES (YEAR 1983)

TABLE C3

	B.R. DEUTSCH-LAND	FRANCE	ITALIA	NEDER-LAND	BELGIQUE	LUXEM-BOURG	UNITED KINGDOM	IRELAND	DENMARK	ECSC 9	HELLAS	ECSC 10
Crude steel production * 1 000 t	35.769	17.582	21.811	4.484	10.154	3.294	14.980	141	493	108.668	874	109.542
Workforce (1) Total end of year	163.748	90.714	87.050	19.210	39.569	12.934	63.694	659	1.642	479.220	..	..
of which: manual workers	116.340	53.335	69.346	..	31.971	9.393	42.019	499	1.221	(324.144)	..	..
employees	37.658	37.346	17.700	..	7.381	3.283	19.938	147	381	(123.834)	..	..
apprentices	9.730	33	4	..	217	258	1.737	13	40	(12.052)	..	..
Total: annual average	168.851	92.606	90.256	19.678	40.397	12.470	67.303	630	1.517	493.708	..	..
Hours worked: total workforce (2)	239.835	143.059	128.830	29.627	61.477	20.673	119.709	..	2.708		..	..
Hours worked per annum and per worker	1.420	1.545	1.427	1.506	1.522	1.658	1.779		1.785	1.513	(a) (b)	
Production time per t. crude steel (3)	6.71	8.14	5.91	6.61	6.05	6.28	7.99	..	5.49	6.86	..	..
Working hours lost (1)	1.455	264	1.811	109	404	334	85	0	0	4.462	..	..
Total personnel Entrants of employees	12.942	8.666	5.621	547	1.795	3.025	5.142	66	455	38.259	..	..
Leavers from employers	25.170	13.367	10.066	1.355	3.885	2.516	15.923	15	437	72.734	..	..
(1) Difference	- 12.228	- 4.701	- 4.445	- 808	- 2.090	+ 509	- 10.781	+ 51	+ 18	- 34.475	..	..
Total												
1) Dismissals and redundancies (1)	2.029	148	284	100	919	31	6.846	1	249	10.607	..	..
of which manual workers (1)	1.744	100	268	..	765	30	4.743	1	223	7.874*	..	..
2) Retirements (1)	8.923	2.793	1.964	651	1.067	1.075	3.796	2	8	20.279	..	..
3) Voluntary resignations (1)	1.781	877	3.530	225	223	342	717	7	69	7.771	..	..
Total 1) + 2) + 3)	12.733	3.818	5.778	976	2.209	1.448	11.359	10	326	38.657	..	..

YEAR 1984

	B.R. DEUTSCH-LAND	FRANCE	ITALIA	NEDER-LAND	BELGIQUE	LUXEM-BOURG	UNITED KINGDOM	IRELAND	DENMARK	ECSC 9	HELLAS	ECSC 10
Crude steel production * 1 000 t	39.381	19.031	24.006	5.742	11.307	3.983	15.335	167	549	119.406	(892)	(120.298)
Workforce (1) Total end of year	152.5	85.1	75.6	18.7	37.2	12.7	61.9	0.7	1.5	445.9	4.2	4.501
of which: manual workers	107.0	48.5	59.9	..	29.9	9.4						
employees	35.5	36.5	15.7	..	7.3	3.0						
apprentices	10.0	0.1	-	..	-	0.3						
Total: annual average	156.5	87.1	81.7	18.7	38.7	12.7	62.3	0.7	1.6	460.0	4.2	464.2
Hours worked: total workforce (2)	233.884	133.855	128.453	30.048	60.482	16.473	111.517	..	2.816	..	..	..
Hours worked per annum and per worker	1.494	1.537	1.572	1.607	1.563	1.297	1.790	..	1.760	..	..	..1)
Production time per t. crude steel (3)	5.94	7.03	5.35	5.23	5.35	4.13	7.32	..	5.13			2)
Working hours lost (1)	221	25	1.286	3	154	1.33		0	1	1.836		
Total personnel Entrants of employees												
Leavers from employers												
(1) Difference												
Total												
1) Dismissals and redundancies (1)	942	260	354	685	994	13	1.687	42	69	5.046		
of which manual workers (1)	820	199	301	..	836	13	1.325	42	68	3.604*	..	..
2) Retirements (1)												
3) Voluntary resignations (1)												
Total 1) + 2) + 3)												

Explanatory notes for C Tables

* Production expressed in ingots produced, after deduction of continuous casting

(1) Unit: 1 worker

(2) " : 1 000 hours

(3) " : hours and hundredths

(4) " : 1 000 hours - monthly average

(a) Community total not including United Kingdom, Ireland, Denmark and Greece.

(b) The arithmetical mean for the Community not including the United Kingdom, Ireland, Denmark and Greece is 1 608 hours/year

(c) Community total not including Ireland, Denmark and Greece

(d) The arithmetical mean for the Community not including Ireland, Denmark and Greece is 1 603 hours/year in 1981 and 1 566 hours/year in 1982

(e) Community total not including Ireland and Greece

(f) The arithmetical mean for the Community not including Ireland and Greece is 1 580 hours/year.

CHANGES WORKFORCE IN ECSC IRON AND STEEL INDUSTRY
BY REGION

TABLE D1

Unit : 1 000 workers

REGIONS	1974	1980	1981	1982	1983	1984	DEVELOPMENT			
							Numbers		Percentage	
							74-84	80-84	74-84	80-84
				BUNDESREPUBLIK DEUTSCHLAND						
Bremen, Berlin, Schleswig-Holstein, Niedersachsen, Hamburg	32.2	28.0	27.6	26.3	24.8	22.3	- 9.9	- 5.7	- 30.7	- 20.4
Düsseldorf	82.6	71.0	68.0	65.4	60.3	55.4	-27.2	-15.6	- 32.9	- 22.0
Köln	3.2	2.4	2.4	2.4	2.3	2.0	- 1.2	- 0.4	- 37.5	- 16.7
Arnsberg, Münster, Detmold	66.6	58.2	51.7	47.9	44.5	42.4	-24.2	-15.8	- 36.3	- 27.1
Hessen, Rheinland, Pfalz	7.6	7.3	7.0	7.1	6.9	6.8	- 0.8	- 0.5	- 10.5	- 6.8
Baden-Württemberg, Bayern	8.0	6.9	7.0	6.4	6.1	5.9	- 2.1	- 1	- 26.3	- 14.5
Saarland	31.8	23.6	23.0	20.4	18.8	17.7	-14.1	- 5.9	- 44.3	- 25.0
Total	232.0	197.4	186.7	175.9	163.7	152.5	-79.5	-44.9	- 34.3	- 22.7
				FRANCE						
Ile de France, Picardie	4.6	4.5	4.4	4.3	4.3	4.2	- 0.4	- 0.3	- 8.7	- 6.7
Champagne, Ardennes	3.3	1.8	0.8	1.6	1.4	0.8	- 2.5	- 1.0	-75.8	-55.6
Normandie, Bretagne, Pays de la Loire	7.5	6.4	6.1	6.0	5.5	5.2	- 2.3	- 1.2	-30.7	-18.8
Bourgogne, Franche-Comté	7.2	6.3	5.8	5.3	5.2	5.1	- 2.1	- 1.2	-29.2	-19.0
Nord - Pas-de-Calais	36.3	24.0	22.3	21.6	21.1	20.2	-16.1	- 3.8	-44.4	-15.8
Lorraine - Alsace	77.6	43.6	40.7	39.1	36.5	33.3	-44.3	- 10.3	-57.1	-23.6
Aquitaine - Languedoc, Midi-Pyrénées	2.1	1.9	1.8	2.5	2.2	2.1	0	+ 0.2	0	+10.5
Rhône-Alpes, Auvergne, Provence-Côte d'Azur	19.2	16.4	15.4	14.8	14.5	14.2	- 5.0	- 2.2	-26.0	-13.4
Total	157.8	104.9	97.3	95.2	90.7	85.1	-72.7	-19.8	-46.1	- 18.9

CHANGES IN WORKFORCE IN ECSC IRON AND STEEL INDUSTRY
BY REGION

TABLE D2

Unit : 1 000 workers

REGIONS	1974	1980	1981	1982	1983	1984	DEVELOPMENT			
							Numbers		Percentage	
							74-84	80-84	74-84	80-84
		ROYAUME-UNI								
Scotland	16.4	10.4	9.0	7.4	6.0	5.9	- 10.5	- 4.5	- 64.0	- 43.3
Wales	66.9	32.4	25.6	23.0	21.2	21.1	- 45.8	-11.3	- 68.5	- 34.9
Northern	34.1	20.8	17.2	12.3	9.5	9.3	- 24.8	-11.5	- 72.8	- 55.3
North-West	3.3	1.5	1.6	1.4	0.9	0.9	- 2.4	- 0.6	- 72.8	- 40.0
Yorkshire and Humberside	52.4	40.8	30.3	25.9	22.9	21.9	- 30.5	-18.9	- 58.2	- 46.3
Other England	21.2	6.2	4.5	4.5	3.2	2.8	- 18.4	- 3.4	- 86.8	- 54.8
Total	194.3	112.1	88.2	74.5	63.7	61.9	-132.4	-50.2	- 68.1	- 44.8
(1). Partial estimates for 1974, 1980 et 1981.										
		ITALIA								
Liguria, Piemonte, Valle d'Aosta	30.3	28.2	26.7	21.2	22.7	18.7	- 11.6	- 9.5	- 38.3	- 33.7
Lombardia	19.7	18.6	17.4	18.3	16.2	13.3	- 6.4	- 5.3	- 32.5	- 28.5
Emilia Romagna, Friuli, Venezia Giulia, Trentino, Alto Adige, Veneto	7.3	7.0	7.2	7.2	6.9	6.4	- 0.9	- 0.6	- 12.3	- 8.6
Abruzzi, Lazio, Marche, Molise, Toscana, Umbria	8.6	15.0	14.4	15.0	14.3	13.0	+ 4.4	- 2.0	+ 51.2	- 13.3
Basilica, Campania, Calabria, Puglia, Sardegna, Sicilia	29.8	30.7	30.0	29.8	26.9	24.2	- 5.6	- 6.5	- 18.8	- 21.2
Total	95.7	99.5	95.7	91.5	87.0	75.6	- 20.1	- 23.9	- 21.0	- 24.0
		BELGIQUE								
Hainaut-Centre, Borinage, Hainaut-Charleroi	29.0	17.7	17.1	15.9	14.6	(13.4)	(- 15.6)	(- 4.3)	(- 53.8)	(- 24.3)
Liège	22.0	16.0	15.5	14.5	13.7	12.7	- 9.3	- 3.3	- 42.3	- 20.6
Brabant	5.5	4.3	4.2	4.1	4.0	(3.8)	(- 1.7)	(- 0.5)	(- 30.9)	(- 11.6)
Flandre, Anvers, Limbourg	7.2	7.2	7.3	7.2	7.3	7.3	+ 0.1	+ 0.1	+ 1.4	+ 1.4
Total	63.7	45.2	44.1	41.7	39.6	37.2	- 26.5	- 8.0	- 41.6	- 17.7

WORKFORCE IN ECSC IRON AND STEEL INDUSTRY

TABLE E

BREAKDOWN BY AGE

Unit : 1000

YEAR End of period	B.R. DEUTSCHLAND		FRANCE		ITALIA		NEDERLAND		BELGIQUE		LUXEMBOURG		UNITED KINGDOM		IRELAND		DANMARK		TOTAL 9 COUNTRIES	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
TOTAL WORKFORCE (Employees and manual workers)																				
1980	197.4	100.0	104.9	100.0	99.5	100.0	21.1	100.0	45.2	100.0	14.9	100.0	112.1	100.0	0.7	100,0	2,2	100,0	598,0	100,0
1981	186,7	100,0	97.3	100.0	95,7	100.0	20,9	100,0	44,1	100.0	13,4	100,0	88,3	100,0	0,7	100,0	1,7	100,0	548,8	100,0
1982	175,9	100,0	95.2	100.0	91,5	100.0	20.2	100,0	41,7	100.0	12.4	100.0	74.5	100,0	0.6	100,0	1,6	100.0	513.6	100,0
1983	163.7	100,0	90.7	100.0	87.1	100.0	19.2	100,0	39,6	100.0	12.9	100.0	63.7	100.0	0,7	100,0	1,6	100,0	479,2	100,0
1984	152.5	100,0	85.1	100.0	75.6	100,0	18.7	100,0	37.2	100.0	12,7	100.0	61,9	100,0	0.7	100.0	1,5	100.0	445,9	100,0
AGED 19 AND UNDER																				
1980																				
1981	11,6	6,2	0.7	0.7	0.5	0.5	0.7	3,5	0.2	0.5	0,4	2.8	4.6	5.2	-	2.7	-	1.2	18.7	3,4
1982	10,9	6,2	0.7	0,7	0,3	0.3	0,6	2,9	0.1	0,3	0.4	2,8	2.9	3.9	0.1	2.3	-	2.1	16,0	3,1
1983	9.8	6.0	0,6	0,6	0,2	0,2	0,3	1.6	0.2	0.4	0.3	2,5	1.9	2,9	-	1.4	0.1	3.5	13.4	2,8
1984	9.6	6.3	0,3	0.4	0.2	0.3	0,2	1,1	0.1	0.3	0.4	3.1	(1.8)	(2,9)	-	(1.4)	(0,1)	(3,5)	(12,7)	(2.8)
AGED 20 TO 24																				
1980																				
1981	14.6	7,8	4,7	4.8	4.4	4.6	2,2	10.3	3,2	7.3	0.3	2,5	11.1	12.6	-	6,6	0.1	5.0	40,6	7.4
1982	13,9	7,9	4.9	5,1	3.9	4.2	1,9	9.6	2.8	6.6	0.3	2,7	9,2	12.4	-	5.2	0.1	4.8	37,0	7,2
1983	13,3	8.1	4.6	5.1	2.9	3,3	1.7	8.9	2.2	5.5	0.4	2.8	7.8	12.3	-	5.8	0.1	7.7	33.0	6.9
1984	14,2	9,3	4.0	4,7	2.4	3,2	1,8	9.6	1,8	4.8	0.4	3.2	(7,6)	(12.3)	-	(5,8)	(0,1)	(7.7)	(32.3)	7,2
AGED 25 TO 34																				
1980																				
1981	49,1	26,3	45.0	46.3	43,3	45.3	8.2	39,3	18,2	41.3	4.6	34.1	30.2	34.2	0.3	35.5	0.7	42.4	199,6	36.4
1982	45.8	26.0	43,7	45.9	40.7	44.5	8.0	39.4	17,6	42.1	4.0	32.4	26.2	35.2	0.2	35.8	0.7	42,2	186.9	36.4
1983	43,4	26.5	41.8	46,1	37.9	43.5	7.7	39,8	16.6	42.0	4.0	31.4	23.2	36.4	0,3	37,2	0.7	40.4	175.6	36.6
1984	41,8	27.4	40.2	47.2	35.3	46.7	7.6	40.6	16.1	43,3	3.8	29.9	(22.5)	(36,3)	0.3)	(37.2)	(0,7)	(40.4)	(168,3)	(37,8)

WORKFORCE IN ECSC IRON AND STEEL INDUSTRY

BREAKDOWN BY AGE

Unit : 1000

Year End of period	B.R. DEUTSCHLAND		FRANCE		ITALIA		NEDERLAND		BELGIQUE		LUXEMBOURG		UNITED KINGDOM		IRELAND		DANMARK		TOTAL 9 COUNTRIES	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
									AGED 40 TO 49											
1980																				
1981	61.4	32.9	34.3	35.2	32.2	33.6	5.2	24.9	13.6	30.7	4.5	33.9	20.8	23.6	0.2	26.5	0.6	(35.1)	172.8	31.5
1982	58.2	33.1	32.7	34.4	31.9	34.9	5.1	25.5	12.8	30.7	4.4	35.1	18.5	24.8	0.2	29.0	0.6	(38.3)	164.4	32.0
1983	54.8	33.5	31.5	34.7	32.0	36.8	5.1	26.7	12.2	30.8	4.7	36.3	16.3	25.6	0.2	26.7	0.7	(41.5)	157.5	32.9
1984	50.0	32.8	29.8	35.0	31.7	41.9	5.2	27.8	11.7	31.5	4.7	37.0	(15.8)	(25.5)	(0.2)	(26.7)	0.7)	(41.5)	(149.8)	(33.6)
									AGED 50 TO 54											
1980																				
1981	31.7	17.0	9.8	10.1	11.6	12.1	2.4	11.3	7.5	17.0	2.8	20.6	11.8	13.3	0.1	10.7	-	(2.6)	77.7	14.1
1982	30.6	17.4	10.5	11.0	11.4	(12.4)	2.3	(11.4)	7.1	17.1	2.4	19.6	10.2	13.7	0.1	12.4	-	(2.2)	74.6	14.6
1983	28.2	17.2	10.0	11.0	11.9	13.7	2.3	12.0	7.1	18.0	2.5	19.3	8.7	13.7	0.1	12.7	-	(2.8)	70.8	14.8
	26.7	17.5	9.0	10.6	4.6	6.1	2.2	11.8	6.0	16.1	2.6	20.5	(8.5)	(13.7)	(0.1)	(12.7)	-	-	(59/.7)	(13.4)
									AGED 55 TO 59											
1980																				
1981	17.0	9.1	2.7	2.8	3.6	3.8	1.8	8.7	1.2	2.7	0.8	6.0	7.6	8.6	0.1	8.8	0.2	(9.0)	35.0	6.4
1982	15.1	8.6	2.7	2.8	3.2	(3.5	1.9	(9.2)	1.1	2.7	0.7	5.5	6.0	8.0	-	8.5	0.1	7.9	30.8	6.0
1983	13.1	8.0	2.1	2.4	2.0	2.3	1.9	10.1	1.1	2.7	1.0	7.6	4.8	7.5	0.1	8.5	-	1.1	26.1	5.4
1984	9.4	6.2	1.7	2.0	1.3	1.7	1.5	8.0	1.3	3.5	0.8	6.3	(4.7)	(7.6)	(0.1)	(8.5)	-	-	(20.8)	(4.7)
									AGED 60 TO 69											
1980																				
1981	1.3	0.7	0.1	0.1	0.1	0.1	0.4	2.0	0.2	0.5	-	0.1	2.1	2.4	-	9.2	0.1	4.6	4.3	0.8
1982	1.4	0.8	-	0.1	0.1	0.2	0.4	2.0	0.2	0.5	0.2	1.9	1.4	1.9	-	6.8	0.1	2.4	3.8	0.7
1983	1.1	0.7	0.1	0.1	0.2	0.2	0.2	0.9	0.2	0.6	-	0.1	1.0	1.6	-	7.7	-	2.7	2.8	0.6
1984	0.8	0.5	0.1	0.1	0.1	0.1	0.2	1.1	0.2	0.5	-	-	(1.0)	(1.7)	-	7.7	-	-	(2.4)	(0.5)

TABLE F

NUMBER OF MEN / HOURS REQUIRED
PER TONNE OF CRUDE STEEL PRODUCED
IN THE COMMUNITY COUNTRIES

- PRODUCTIVITY CHANGES -

Unit : hours and hundredths

MEMBER COUNTRIES	1974	1980	1974/80	1981	1980/81	1982	1981/82	1983	1982/83	1984	1983/84	1980/83	1980/84
	TIME	TIME	% CHANGES OVER 6 YEARS	TIME	% MOVEMENT	TIME	% MOVEMENT	TIME	% MOVEMENT	TIME	% MOVEMENT	% annual rate of movement over 3 years*	% annual rate of movement over 4 years**
Bundesrepublik Deutschland		6.94		6.87	+ 1.0	7.22	- 4.8	6.71	+ 7.6	5.94	+ 13.0	+ 1.12	+ 3.95
France		8.13		7.87	+ 3.3	8.42	- 6.5	8.14	+ 3.4	7.03	+ 15.8	- 0.03	+ 3.69
Italia		6.19		6.18	+ 0.2	6.20	- 0.3	5.91	+ 4.9	5.35	+ 10.0	+ 1.54	+ 3.71
Nederland		6.16		5.93	+ 3.9	6.78	-12.5	6.61	+ 2.6	5.23	+ 26.4	- 2.32	+ 4.18
Belgique		6.13		5.64	+ 8.7	6.23	- 9.5	6.05	+ 3.0	5.35	+ 13.1	+ 0.04	+ 3.47
Luxembourg		5.93		6.34	- 6.5	6.55	- 3.2	6.28	+ 4.3	4.13	+ 52.1	- 1.90	+ 9.46
United Kingdom		..		10.96	..	10.34	+ 6.0	7.99	+29.4	7.32	+ 9.2	+17.13 (1)	+10.61 (2)
Ireland		..		..	..	..	..	..	..	..	..	.. (3)	.. (3)
Danmark		..		..	..	..	..	5.49	..	5.13	+ 7.0	..	..
TOTAL COMMUNITY Without United Kingdom, Ireland, Denmark, Greece		6.84		6.70	+ 2.08	7.05	- 4.96	6.70	+ 5.22	5.83	+ 14.9	+ 0.66	+ 4.07
TOTAL COMMUNITY Without Ireland, Denmark Greece		..	..	7.23	..	7.46	- 3.08	6.88	+ 8.43	6.02	+ 14.3	..	..

(1) 1981-1983
(2) 1981-1984
(3) With United Kingdom for 1981-83 and 1981-84
.. Data not available

*: FORMULA

$$\frac{(1 + \text{Annual change})}{(1 + \text{Annual change})} = \text{number of years}$$

TABLE G

CHANGES IN HOURS WORKED PER ANNUM AND PER WORKER
IN THE IRON AND STEEL INDUSTRY OF THE
EUROPEAN COMMUNITY

Unit : hours worked per annum

Member country	1980	1981	1982	1983	1984	Percentage change					
						1980/1981	1981/1982	1982/1983	1983/1984	1980/1983	1980/1984
	Hours										
B. R. Deutschland	1 513	1 488	1 430	1 420	1 494	- 1.7	- 3.9	- 0.7	+ 5.2	- 6.1	- 1.3
France	1 658	1 668	1 602	1 545	1 537	+ 0.6	- 4.0	- 3.6	- 0.5	- 6.8	- 7.3
Italia	1 632	1 557	1 586	1 427	1 572	- 4.6	+ 1.9	-10.0	+ 10.2	-12.6	- 3.7
Nederland	1 542	1 552	1 440	1 506	1 607	+ 0.6	- 7.2	+ 4.6	+ 6.7	- 2.3	+ 4.0
Belgique	1 594	1 548	1 445	1 522	1 563	- 2.9	- 6.7	+ 5.3	+ 2.7	- 4.5	- 1.9
Luxembourg	1 708	1 729	1 721	1 658	1 297	+ 1.2	- 0.5	- 3.7	- 21.8	- 2.9	- 24.1
Mean 7 countries											
1) Weighted	1 585	1 557	1 510	1 470	1 526	- 1.8	- 3.0	- 2.7	+ 3.8	- 7.3	- 3.7
2) Arithmetical	1 608	1 590	1 537	1 513	1 512	- 1.1	- 3.3	- 1.6	- 0.1	- 5.9	- 6.0
United Kingdom	..	1 748	1 736	1 779	1 790	..	- 0.7	+ 2.5	+ 0.6	..	..
Mean 7 countries											
1) Weighted	..	1 589	1 545	1 512	1 562	..	- 2.8	- 2.1	+ 3.3	..	..
2) Arithmetical	..	1 613	1 566	1 551	1 551	..	- 2.9	- 1.0	0	..	..
Danmark	..	..	..	1 785	1 760	..	..	..	- 1.4	..	..
Mean 8 countries											
1) Weighted	..	..	..	1 513	1 562	..	..	..	+ 3.2	..	..
2) Arithmetical	..	..	..	1 580	1 577	..	..	..	- 0.2	..	..

.. Data not available

Table H

STEEL PRODUCTION AND CAPACITIES IN THE ECSC IRON AND STEEL INDUSTRY

Unit : million tonnes

YEAR	TOTAL CRUDE STEEL (1)	OF WHICH		TOTAL PRODUCTION CAPACITIES		
		CONTINUOUS CASTING %	OTHER PROCESSES %	QUANTITIES	RATIO CAPACITY/ CRUDE STEEL PRODUCTION %	RATIO CRUDE STEEL PRODUCTION/ CAPACITY (2)
1974 Q	156.3	12.0	88.0	178.9	115.0	86.9
1975 Q	126.0	16.0	84.0	190.1	151.4	66.1
1976 Q	134.8	20,0	80.0	197.6	147.5	67.8
1977 Q	126.7	24.4	75.6	200.9	159.3	62.8
1978 Q	133.3	27.5	72.5	202.1	152.4	65.6
1979 Q	141.0	29.4	70.6	203.5	145.1	68.9
1980 Q	128.6	36.4	63.6	202.5	157.5	63.5
1981 Q	126.1	42.2	57.0	197.9	156.9	63.7
1982 Q	111.4	48.6	51.4	198.3	178.0	56.2
1983 Q	109.5	54.9	45.1	190.2	173.7	57.6
1984 Q	120.3	(61.0)	(39.0)			
1990 Q	119.6 *	(75.0)	(25.0)			

(1) For 1974 to 1979 inclusively, Community without Greece

(2) Utilisation rate

( ) Estimate.

* Maximum expected production

ECSC STEEL INDUSTRY HOURS NOT WORKED

Table I

Unit: 1000 h

PERIODS	BUNDES-REPUBLIK DEUTSCHLAND	FRANCE	ITALIA	NEDERLAND	BELGIQUE	LUXEMBOURG	UNITED KINGDOM	IRELAND	DANMARK	COMMUNITY TOTAL (excluding Greece)
				MONTHLY AVERAGES						
Years.										
1980	228	108	208	..	297	0	..	0	11	..
1981	397	200	580	108	250	220	406	0	5	2 166
1982	1 377	173	785	219	405	430	249	7	14	3 659
1983	1 455	264	1 811	109	404	334	85	0	0	4 462
1984	221	25	1 286	3	154	133	13	0	1	1 836
Quarters										
1980 I	120	27	134	..	45	0	..	0	0	..
II	8	48	233	..	32	0	..	0	0	..
III	74	17	206	2	338	0	..	0	9	..
IV	709	342	258	300	774	0	..	0	36	..
1981 I	559	332	403	217	394	0	1 136	0	8	3 049
II	255	246	763	20	250	0	380	0	0	1 914
III	363	108	652	13	156	437	90	0	11	1 830
IV	410	112	502	182	201	444	18	0	0	1 869
1982 I	366	28	402	202	193	439	48	0	4	1 682
II	351	22	380	107	324	399	79	0	2	1 664
III	1 586	39	821	168	342	394	179	28	26	3 583
IV	3 206	604	1 535	400	760	486	692	0	24	7 707
1983 I	2 246	561	2 227	303	610	450	256	0	0	6 653
II	1 230	305	1 856	87	386	358	37	0	0	4 259
III	1 318	108	1 400	13	286	275	10	0	0	3 410
IV	1 027	80	1 763	32	332	253	37	0	0	3 524
1984 I	602	67	1 844	11	256	190	18	0	0	2 988
II	220	11	1 578	0	133	146	12	0	0	2 100
III	43	9	883	0	95	96	6	0	0	1 132
IV	19	14	838	0	131	97	15	0	2	1 116

CHAPTER VII

SUPPLY

Section 1. SCRAP

So far it has generally been accepted that for a whole range of products, and in particular long products, the scrap-fed electric arc process is the most profitable. Compared with integrated plants, mini-mills, as we have already said in previous Objectives, have the advantage of :

- needing lower investment costs;
- requiring easier management;
- having better flexibility to cope with market changes.

However, this situation depends entirely on the availability and the price of scrap. The Commission has made an in-depth study of these two points, and findings were sent on 4 May 1984 to the Member States and to the trade organizations affected. This document has now been revised and updated and is reproduced hereafter.

There are, however, certain conclusions that must be drawn, especially after the period of extreme tension that has prevailed on the scrap market for two years. These conclusions are as follows :

(a) the export of scrap to non-Community countries has now become structural in character due largely to a reduction in American exports which have traditionally been directed towards countries that are now seeking supply within the Community;

(b) the collection of scrap is becoming more and more of a "production" operation, largely because of the technical requirements described in the Annex.

Consequently, the price of scrap will not drop back down to the level that made the electric furnace process so attractive to steelmakers. In addition, account has to be taken of the evential repercussions of the dollar rate, since scrap prices follow the "composite price", which is fixed in US currency.

Company strategies, especially where new investments are concerned, must therefore take account of this structural change in the supply of scrap. In particular, the electric furnace option must be based, in terms of profitability, on other economic criteria than the (speculative) price of scrap. In the medium and long-term, the Community can expect structural problems related to the supply of scrap. The potential availability, the technical means (and attendant investments) required for the "production" of scrap that can be used in the steel industry and, more generally, the various economic factors involved will thus have to be examined on a priority basis and dealt with in highly detailed technical and economic studies. Only on this condition can production structures based on the electric furnace be properly evaluated.

ANALYSIS OF THE STEEL SCRAP MARKET - PROSPECTS FOR 1990

INTRODUCTION

As a result of the tensions which dominated the scrap market at the end of 1983, the Commission (in Document COM(84) 33 final of 26 January 1984) indicated that the big increase in exports to non-Community countries was the main reason for the steep increase in scrap prices and proposed that the Council should set a ceiling on these exports in order to prevent such a situation occurring again.

Before proposing measures to restrict exports, the Council asked the Commission to :

1) trace the short - and medium-term aspects of the phenomenon by making a very careful statistical check of prices and export levels;

2) identify the structural components of the phenomenon in order to determine whether the Community market was tending towards a state of instability which - because of price movements - could interfere with the Community's steel policy measures.

This document aims to deal with the second point in a rapid survey of supply and demand.

1. SUPPLY

Scrap, insofar as it is a raw material for the steel industry, is made up of :

- scrap arisings in the different production stages;
- scrap arisings in the conversion industries;
- the recovery of steel from obsolete equipment.

Production scrap in the steel industry

Steel making produces scrap all along the production line. The type and age of the installation and the structures and quality of the product result in more or less scrap being produced and determine the different amounts of circulating scrap produced by the steel industry in the various countries. In the seventies a number of technological innovations led to a reduction in the amount of scrap produced but the main stage in which this trend played a really important part was that in which liquid steel is processed into semi-finished products by continuous casting which eliminates the ingot casting stage. Continuous casting gives 10% less scrap than the ingot route, i.e. a reduction of 100 kg/t.

The table below gives the increase in continuous casting for the main producer countries (continuously cast steel as a percentage of the total amount of steel produced) :

	1981	1983	1984	1990
EEC	45,1	61,4	64,8	(75)
SPAIN	40	46	49(EST)	(58)

This trend, which was particularly marked in Japan and the EEC, led to the following decreases in scrap production in the steel industry (scrap as a percentage of the total amount of steel produced) :

	1972	1981	1983	1990
EEC	21	16	15	13
SPAIN	21	17	16	14

The difference between the starting figures reflects the up-to-date nature of the installations; changes over a period of time express technological changes, particularly the effect of the continuous casting method.

Scrap arisings in the conversion industry

There has been little change in the pattern of scrap production in the conversion industries in the last few years in spite of the introduction of major new technologies in certain sectors (e.g. numerically controlled machines tools in engineering). The differences in the amount of scrap obtained in the main producer countries are the result of differences in the structure of their conversion industries.

Scrap production remained more or less constant in the last few years and breaks down as follow (as a percentage of steel consumption) :

	1984
EEC	14 - 15%
USA	16 - 17%
JAPAN	11 - 12%

Recovery of obsolete products made from steel

There is a very low correlation between the recovery of these materials and the steel-making variables, production and consumption. It depends on the structure of the scrap-collecting industry which varies enormously from country to country and ranges from the small one-man outfit to large scrapyards equipped to handle and select scrap.

The most important products from the point of view of scrap collection are old cars and other means of transport, household appliances, obsolete industrial equipment, rails and machine tools.
Good quality scrap is also obtained from shipbreaking. The shipping crisis of the last few years has brought about an increase of some 100% in shipbreaking worldwide. The steel contained in buildings,

pylons, bridges and other structures which become obsolete represents a further reserve of scrap. The fact that this type of scrap is coming on to the market is the consequence of high prices in the scrap market; these must be such as to cover the cost of demolition and still allow an acceptable profit.

Although the various collection systems examined have generally shown themselves to be elastic in relation to demand, there is very little mechanization in the collecting structures, at least in some countries, and this might lead to problems in future. Each country, then, has a reserve of scrap which is linked to the average life of the steel consumed (up to 15 years).

The biggest reserves are held by the most highly industrialized countries - which therefore also have a high per capita steel consumption - but during the 1970s changes in indirect exports (e.g. car exports from Japan) have resulted in transferring a large quantity of potential scrap to other countries which, in general, are less developed.

Reserves are growing in steel-importing countries, i.e. in those that consume more than they produce. These include several developing countries as well as the USA. The latter, which also has a very high per capital consumption, has the world's largest reserves.

Global supplies on the Community's markets are given in the following table :

CHANGES IN THE SOURCES OF THE SCRAP AVAILABLE ON THE COMMUNITY MARKET

(t/000)

	Apparent consumption of crude steel (excl. liquid steel for casting)	Crude steel production	Sources						
			In the steel industry			Deliveries from the national market			
							of which		Total ressources of the national market
			Scrap arising	Scrap arisings as a percentage of crude steel production	Internal Recovery	Total	Scrap arisings in the conversion industries	Other sources	
1974	129.159	155.587	30.981	21	1.463	36.786	18.653	18.133	69.230
1976	122.366	134.136	25.936	19	968	34.790	17.681	16.828	61.413
1977	116.751	126.121	24.899	20	969	33.529	16.851	16.678	59.397
1978	116.545	132.580	24.341	18	990	37.238	16.826	20.898	63.055
1979	124.352	140.195	25.211	18	1.087	37.595	17.932	20.076	63.893
1980	119.139	127.734	22.846	18	1.146	35.023	17.085	18.010	59.015
1981	115.240	125.144	21.871	18	1.254	36.618	16.591	20.468	59.743
1982	108.258	110.509	18.146	16	1.166	35.753	15.550	20.203	55.065
1983	105.586	108.668	16.791	15	1.119	37.910	15.207	22.703	55.820

2. DEMAND

Almost all scrap used in the iron and steel industry is used in steel making but marginal quantities are also used in blast furnaces and in re-rolling.

Steelworks' consumption depends on changes in the various steel-making processes. Technological change has brought about structural changes in conversion processes. Throughout the world the Thomas and Bessemer processes - as well as the Martin-Siemens have now disappeared and been replaced by various generations of oxygen converter and by electric furnaces.

In particular, there have been the following changes in the EEC :

STEEL PRODUCTION BY PROCESS - 1974 and 1984
(as a percentage of total steel production)

	Oxygen		Electric		S.M.		Other	
	74	84	74	84	74	84	75	84
Germany	69	81	11	18	17	1	3	=
France	58	81	12	19	11	=	19	=
Italy	44	47	41	53	15	=	=	=
Netherlands	92	95	7	5	=	=	=	=
Belgium	80	93	4	7	1	=	15	=
Luxembourg	65	100	2	=	=	=	33	=
United Kingdom	48	66	23	34	28	=	1	=
Ireland	=	=	51	100	49	=	=	=
Denmark	=	=	4	100	96	=	=	=
Total EEC	62	74	16	26	15	=	7	=
Spain		43 (EST)		57 (EST)				

Thus, whereas at Community level steel production in electric furnaces represents 26% of total production, in the U.K. and Italy it accounts for a much higher percentage and, consequently, a very high consumption of scrap. The abovementioned two processes use very different quantities of scrap per tonne of steel produced.

From the strictly technical point of view the proportion of scrap charged in oxygen steelmaking is theoretically highly elastic. A big charge gives better conversion because it uses from the melting the heat from the exothermic reaction and maintains the temperature of the fluid mass at near-optimum level.

In practice, the scrap charge may very between 10 and 30% but it is mainly the availability and the price of scrap which determine the actual amounts used. For instance, Japan, which is a steel-importing country, uses 11% on average. By contrast, the USA uses over 30%. In the EEC the amount is some 22%.

Electric furnaces on the other hand use at least 95% scrap as a raw material because it is available and costs less than cast iron and pre-reduced products.

Scrap consumption in the steel industry is therefore related to the spread of use of electric furnaces and the percentage of scrap used in oxygen converters.

	1984
Germany	374
France	317
Italy	674
Netherlands	251
Belgium and Luxembourg	370 (EST)
U.K.	501
Ireland	over 1000
Denmark	over 1000
EUR 9	449
Spain	746

3. SCRAP CONSUMPTION IN FOUNDRIES

Foundry production in the EEC in 1984 amounted to 9.2 million tonnes of finished products (8.2 million tonnes in cast iron and 1.0 million tonnes in steel), amounting to some 15% of world production (65 million tonnes). The amount of material used to produce these 9.2

million tonnes of castings was 14.400.000 (i.e.160% of the weight of the finished products) and breaks down as follows :

- Total pig iron (including hot metal)	3 000 000
- Ferro-alloys	264 000
- Steel and cast iron scrap	6 900 000
- Returned scrap	4 250 000

Scrap consumption in EEC steel works and foundries therefore amounted to some 11.1 million tonnes of which 4.2 million were own scrap arisings and 6.9 million were recovered scrap. Of the latter 6.9 million tonnes of scrap some 4.2 million were steel scrap, a quantity which helps cover total demand for scrap in the Community market.

4. THE BALANCE BETWEEN SUPPLY AND DEMAND AND EXTERNAL TRADE

For the Community as a whole consumption is easily covered by internal sources as imports represented only 2.3% of the total in 1974 and 3.2% in 1984. In addition, if we look at the external trade balance, we can see that the Community has become a net exporter since 1980.

On the other hand, exports and imports broken down by country show a different picture resulting from the level of intra-Community trade. France, Germany and the United Kingdom are the biggest exporters whilst Italy and Spain are the biggest importers.
The major trade flows are between countries in close geographical proximity (from France and Germany to Italy; from the United Kingdom to Spain) because freight costs for this very low-cost product are high.

External trade

Scrap is traded in a free market and price is determined by demand and supply. However it is a world market. The principal index of world prices is the "Composite Price" calculated by "Iron Age" - this is expressed in dollars (U.S.). During 1984 demand has significantly increased in several third markets with developing steel industries, such as Spain, Korea, India, Turkey - also in some state trading

countries. As a result Community exports (4.063 M/t in 1982) have reached 5.631 M/t in 1983 and are expected to be about 6.5 M/t in 1984.

Higher demand has caused high prices - between January'83 and January '84, the 'Composite Price' has risen by 55%, but the effect on the Community has been more severe, as a result of exchange movements in favour of the dollar. Thus during the same period prices in ECUs have doubled, even although it should be noted that January'83 prices were at a historic low.

This situation caused problems for those Community countries which had to pay this price to obtain the supplies they needed - principally Italy, Denmark and Ireland, which on several occasions requested the Commission to fix a third country export ceiling in order to reduce the level of prices.

Although since February 1984 dollar prices have tended to be stable, the erratic dollar exchange rate has continued to disturb the Community scrap market during 1984 and in the first part of 1985. Meanwhile certain countries, notably Italy have complained of supply problems particularly for good quality scrap.

In fact the steel industry requires increasing quantities of good quality scrap, for which supply continues to diminish. Such material arises principally from within the steel industry and the steel conversion industries.

Factors causing this reduction in supply are varied - increasing use of the continuous casting process, improved steel fabricating technology, lower activity in the steel using sectors and more rational use of raw materials (in this case steel).

5. PROSPECTS FOR 1990

Forecasts for 1990 can be prepared on the basis of official statistics, the latest evaluation for 1984 and the facts and figures contained in this study.

The following assumptions are made :

- In 1990 scrap produced by the steel industry will represent 13% of crude steel production as a result of technological innovations in processes and, in particular, the wider use of continuous casting;

- In 1990 the ratio of oxygen-refined steel to electric-furnace steel production will be 70/30%;

- These assumptions are based on present restructuring plans some of which have not yet clearly defined the new structures in steel works. A cautious assumption has therefore been made.

- Demand for steel scrap in foundries will be around 4 million tonnes.

Finally, the optimistic scenario on steel production has been chosen.

The forecast is therefore as follows :

	1982	1984 (est.)	1990
Steel production	110,4	120,3	119,7
Scrap consumption(1)	48,5	53,2	54,5
Own production in the steel industry	19,3	18,0	15,5
Quantities to be bought	29,2	35,2	39,0
Purchases by independent iron foundries	3,5	4,0	4,5
TOTAL requirements	32,7	39,2	43,5

On the basis of these figures the steel industry should purchase about 43.5 M/t on the market in 1990. The internal market is theoritically capable of satisfying this demand given the level of reserves and the structure of the scrap recovery system. In contrast it is not clear whether the quality of the supply will be able to satisfy the standards of requirements which grow daily more demanding.
In this context the Commission's staff have demonstrated, already in 1984, the risk of a quality inbalance in the Community market.

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(1) Including integrated and separate steel works, integrated iron foundries, blast furnaces and rolling mills.

Section 2. RAW MATERIALS SUPPLY FOR THE COMMUNITY STEEL INDUSTRY

Apart from scrap, iron and manganese ore as well as alloy ores and the ferro-alloys made out of them are raw materials used by the steel industry. Of these, only iron and manganese ore plus high-carbon ferro-manganese are covered by the ECSC Treaty, whereas alloy ores and the other ferro-alloys are covered by the EEC Treaty.

1. Iron ore

In terms of quantity there is unlikely to be any worldwide shortage of iron ore in the future. However, the immediate future will see profitability and competition in the steel sector force demand towards the best (and at the same time cheapest) sources of raw materials. Thus, instead of a problem of quantity there will be a problem of quality. Short-term supply bottlenecks should not however be excluded.

Iron-ore mining in the Community will continue to decline

Since, with the exception of Greece, where iron ore concentrates are obtained as a by-product of nickel-ore mining, existing mines supply only the local steel industry with iron-ore, their fate will depend very largely on how that industry fares.

Iron-ore mining in Germany, France, Greece and the United Kingdom, which amounted to around 18 million tonnes in 1984, will have sunk to about 12 million tonnes per year in 1990, which should correspond to an iron content of about 4 million tonnes. Indigenous iron-ore mining would therefore cover less than 5% of the total ore consumption in the Community and hence fade into insignificance. Furhter technical aids to make the remaining ore reserves competitive would seem to serve little purpose and would not prevent pit closures, but merely provide an artificial means of delaying such closures in the short term.

The accession of Spain and Portugal to the Community will, at a first stage, increase the Community production by some 7-8 million tonnes. Although both countries dispose of iron ore resources virtually all of this production comes from Spanish mines. Since most of the iron ore

resources of the iberian peninsula are only worthwile to exploit in the context of a local steel industry - given their relatively reduced Fe-content and impurities - the future of various iron ore mines will be determined by the restructuring plans for the steel industry.

Nevertheless Spain exports iron ore, nearly exclusively to Community countries. Export quantities, which were in 1983 of the order of 1.6 million tonnes, are expected to fall in the future because of the increasing quality requirements for ores.

Consequently, the Community is forced to concentrate its raw material supplies on sources in other countries, particularly overseas.
At the moment some 25% of supplies are covered by the direct involvement of the Community steel industry in iron-ore mining overseas. However, if the financial situation, for example, of the Community undertaking in Liberia does not pick up of its own accord or with aid from third parties, in the near future some 7-8 million tonnes a year would be lost and the Community's direct involvement in mining in other countries would decrease accordingly.

About 65% of current iron-ore supplies to the Community are covered by long-term agreements, meaning that some 10% of supplies are negotiated on the spot market. It must be said, however, that approximately 80% of all supplies come from only five countries. In addition, many supplier countries could find themselves confronted in the near future with economic or political problems and suddenly cease to be suppliers, meaning that the supply of raw materials is secure only to a degree.

At the moment, the expected shutdown on the world market of about 50 million tonnes a year for reasons of exhausted deposits or profitability is offset only by the tapping of new reserves in the Carajas project in Brazil. However,some mining companies are currently only working to 70% of their capacity while other projects, particularly in Australia, are waiting for the right moment for implementation. A development of this kind, however, would bring about the adverse effects of a further reduction in the number of iron-ore supplier countries.

In view of this change in iron-ore supplies, the Community sould direct its attention to ore projects in West Africa. Should these prove to be economically viable every effort must be made to include these deposits in a Community raw materials supply policy.

2. Manganese and ferro-manganese

In the steel industry manganese is used :

- in blast furnaces in the form of manganese ore, and
- in melting shops as :
  - . high-carbon ferro-manganese,
  - . refined ferro-manganese,
  - . super-refined ferro-manganese, and
  - . ferro-silico-manganese.

Blast furnace consumption of manganese ore has already fallen significantly and will soon cease altogether.
Melting-shop consumption is about 6 kg manganese per tonne of steel, but the trend is downwards and high-carbon ferro-manganese is giving warn to the other manganese alloys. By 1990, an average specific consumption of only 4.5 kg per tonne (equivalent to 3.4 kg manganese) can be expected. Since high-carbon ferro-manganese is the variety which the Community produces most of - still meeting about 75% of requirements - such a decline will have a negative effect on the development of this sector in the Community. Social and regional repercussions will also have to be borne in mind.

As far as the security of manganese supplies is concerned, there is no problem as regards quantity, buth the geographical distribution of ore deposits is very concentrated, and this requires special attention.

3. Other alloys

The Community is deficient in raw-material deposits in the alloys sector. Workable chromium and nickel ores are found only in Greece and tungsten in Southern France and the United Kingdom. In terms of quality and quantity, however, they are not comparable with the abundant ore deposits found overseas.

The Community's strength has so far been in the processing of alloy ores. Since, however, the Community has few advantages in this sector other than know-how and installations that in some cases are no longer highly modern, and ore-producing countries in the Third World are insisting on taking over the processing into ferro-alloys for themselves, our industry, e.g. mass-produced alloys, is running into difficulties.

In some raw materials there is also the danger of "outside" oligopoly or monopoly with the amalgamation of associations with common interests in which the Community industries have little or no influence. With the current good economic situation in both the production and consumption of ferro-alloys there are only slight signs of a development of this kind. Nonetheless, the indigenous production capacity in ferro-chromium has already had to be reduced once by two thirds.

On raw-material supply policy grounds, the Community adopted a scheme whereby the steel industry purchases the remaining production. Whether the steel industry will stay faithful to the indigenous ferro-chromium industry in the event of a further crisis or whether it will rely entirely on non-Community producers on account of short-term profits remains to be seen. A similar trend is also emerging for other mass-produced alloys (cf. ferro-manganese).

The example of ferro-chromium is symptomatic of the situation in the entire Community ferro-alloy industry and is likely to give the steel industry food for thought. Whether and to what extent the Community ferro-alloy industry, like the steel industry, should or must commit itself, either alone or with financial aid from the Community, to projects in non-Community countries for raw-material supplies will, in the end depend also on the attitude of the steel industry towards the ferro-alloy industry.

Section 3. ENERGY SUPPLY FOR THE COMMUNITY STEEL INDUSTRY

1. Introduction

In quantitative terms, no difficulties are anticipated in supplying the iron and steel industry up to 1990 and beyond.

It is expected that the injection of solid fuels will be extended in blast furnace operations, and that further progress will be made in the rational use of energy upstream and downstream of the blast furnace.

2. Solid fuel requirements for blast furnace operations

As indicated in Chapter III, the working hypothesis used is that of a yearly Community production of crude steel of, at most, 120 million tonnes in 1990, i.e. the same as in 1984. If, for quality reasons, electric-furnace steel will, to a large extent, be specified for the manufacture of long products, a stable production level of electric-furnace steel of around 31 million tonnes is to be expected. Oxygen-blown steel will make up the remaining (120 - 31) = 89 million tonnes, and for the production of this pig iron and blast-furnace fuels are required.

With oxygen-blown steel production at 89 million tonnes it may be assumed that pig-iron requirements, including foundry pig iron, will lie between 82 and 85 million tonnes (1984 : 83.5 million tonnes), according to the quantity of scrap used in the converter(1).

The use of coke and coke breeze grew to 600 kg/tonne in 1981, owing to cuts in oil consumption. Since then there has been a continuing reduction in the use of solid fuels : a level of 550 kg/tonne is expected in 1990, 510 kg of which being coke, including breeze, and 40 kg raw coal for injection. In 1984 seven facilities for injecting coal into blast furnaces were in operation in the Community, using

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(1) The use of scrap is extremely variable between companies and can even fluctuate from one period to another.

about 0.5 million tonnes of injection coal, replacing about the same quantity of coke; it is expected that the use of this process will increase rapidly.

Other coke-replacement processes are unlikely to cause a significant reduction in requirements by 1990.

On the basis of the above assumptions, the average yearly coke requirements of the steel industry are calculated at between 42 and 43.5 million tonnes. Requirements outside the steel industry are estimated at between 5 and 6 million tonnes a year. If we add to this net annual exports of from 2 to 3.5 million tonnes, the total coke requirement for 1990 comes to between 49 and 53 million tonnes, for which from 66 to 72 million tonnes of coking coal will be required.

3. Supplies of solid fuel

With a level of utilization of 90%, a coking plant capacity of 54-59 million tonnes/year would be required for the production of the 49-53 million tonnes of coke mentioned above. According to the latest submissions from Community coking plant operators, coking capacity will fall from 66 million tonnes in 1984 to 64 million tonnes in 1987. It must be expected that capacity will continue to fall after 1987; however it should still be sufficient in 1990 to cover the coke requirements estimated above.
No difficulties are expected in the preparation of the coking coal; the same is also true of other solid fuels.

4. Supplies of other forms of energy for the iron and steel industry

For the supply of liquid fuels, gas and electricity for the manufacture and further processing of steel, no difficulties are forecast up to 1990 and beyond.

5. Energy savings

The steel industry accounts for about 8% of primary and 20% of industrial energy consumption in the Community.

Energy conservation is an essential means to improving in the Community steel industry's competitiveness and viability. Energy accounts for about 25-30% of production costs in an integrated steel works and 15-20%(1) in an electric furnace steel plant.
Potential energy savings in 1990 can be reckoned at 5% of 1983 energy consumption (i.e. 4-5 million tpy). These savings can be achieved notably by :

- using optimal-energy raw materials : for instance, making maximum use of indegenous scrap;
- more efficient energy management coupled with the reduction of losses in existing plant and machinery and processes(2);
- greater use of energy recovery and waste-gas recirculation techniques, e.g. the re-use of back-pressure at the furnace throat, or the recovery of converter gas.

(1) Not counting the energy content of scrap.

(2) For instance, heat recovery.