

RETURN TO
REPORTS DESK
WITHIN
ONE WEEK

No. E - 195

FILE COPY

67123

This report is not to be published nor may
it be quoted as representing the Bank's views.

INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT

EUROPEAN COAL OUTLOOK

November 29, 1951

Economic Department
Prepared by: S. Lipkowitz
M. C. Beltranena

EUROPEAN COAL OUTLOOK

Introduction

In the immediate post-war period, Western Europe^{1/} suffered from a severe coal shortage which reached a peak in 1947, when net imports amounted to 42 million tons.^{2/} Net imports dropped rapidly in the following three years, reaching a low of 7.6 million tons in 1950. In 1951, however, net imports have increased quite sharply to an estimated 33 million tons.

32

What factors account for this marked change and to what extent are these changes due to non-recurring factors? Appropriate answers to these questions are significant for the balance of payments position of Western Europe, especially when one realizes that in 1951, 24 million tons will be imported from the USA at a landed cost of about \$22 per ton, made up of \$10 (average) for coal f.o.b. vessel, and \$11 - \$13 freight and insurance, much of which must also be paid for in US dollars.

Imports from Poland in 1951 will approximate 10 million tons, while imports of 1 to 2 million from other areas will be more than offset by exports of 3 to 4 million tons to areas outside of Western Europe (Finland, Yugoslavia, Latin America, Africa, etc.)

Post-war trends

The following table summarizes the Western Europe's coal position in the post-war period.^{3/}

Year ended	Production	Total net Imports	% of apparent Consumption	Apparent Consumption		Est. Real consumption after allowances for probable changes in unrecorded stocks
				Adjusted for changes in recorded stocks	Un-adjusted	
Dec. 1946	336.8	21.0	5.9	357.8	n.a.	n.a.
Dec. 1947	365.6	42.1	10.3	407.7	397.3	394
Dec. 1948	396.7	25.7	6.1	422.4	423.0	421
Dec. 1949	430.5	15.2	3.4	445.7	440.2	441
June 1950	437.7	6.2	1.4	443.9	441.9	443
Dec. 1950	439.6	7.6	1.7	447.2	451.2	452
June 1951	449.2	17.9	3.8	467.1	473.9	470
Est. Dec. 1951	460	33	6.7	492	489	484

Note: All figures in millions of metric tons.

1/ Western Europe for the purposes of this paper, is defined as coextensive with OEEC countries, except Turkey and Iceland.

2/ Ton refers to the metric ton (equal to 2204.6 lbs.).

3/ A detailed explanation of the differences as between the three measures of consumption is contained in the section entitled "Consumption Outlook".

It will be noted that after reaching a peak in 1947, Western Europe's net imports fell off markedly until after the outbreak of the Korean war. The following table depicts the coal trade of Western Europe as a whole from 1947 - 1951 inclusive:

Year	Net Imports	Imports from		Net Exports to others ^{1/}
		USA	Poland	
1947	42	34	7	- 1
1948	26	17	12	+ 3
1949	15	10	11	+ 6
1950	7	a)	9	+ 2
1951 est.	32	24	10	+ 2

Note: All figures in millions of metric tons.

a) Less than half million

^{1/} The leading sources of imports other than USA and Poland were Czechoslovakia, and the Union of South Africa. Exports from Western Europe are destined for South America, Canada, Egypt, and European overseas territories in Africa, as well as Finland and Yugoslavia. In all years except 1947, such exports have exceeded imports from sources other than USA and Poland as indicated.

After the outbreak of war in Korea, industrial activity increased rapidly causing a sharp rise in the demand for coal. Most European countries had accumulated large recorded stocks of coal at the pits, notably Belgium and France where production had been reduced for this reason. Probably because of these large stocks and because it was widely believed that the Korean situation would be terminated shortly after initial Allied successes in the fall of 1950, steps were not taken promptly to increase imports from the USA. The memory of slackened industrial activity in the year prior to the Korean war was apparently too fresh in many minds to warrant expenditures of scarce dollars for coal.

The decline in stocks was most drastic in Great Britain, which alone accounted fully for the total decline in recorded stocks. The decline in Belgian stocks was counter-balanced by a net increase in French stocks, made possible by a vast increase (45%) in hydro-electric power output. But the reduction in British stocks led to a curtailment of exports to the Continent, reducing the supplies available to it and causing Continental countries to turn to other sources of supply, especially after the UK began to import US coal.

By the beginning of 1951, the demand for US coal increased sharply as the industrial output rose, influenced by the repercussions of the Western preparedness program; how rapidly this tendency has taken hold is well illustrated by the following statistics of US exports in millions of tons:^{1/}

^{1/} The figures cited are for US exports converted to metric tons. Because of the obvious lapse of time before the coal is delivered in Europe, especially to such overland areas as Austria and Switzerland, shipments from USA as reflected in import statistics of consuming countries show a few months lag.

	<u>Annual Rate</u>
1949 - Year	9.0
1950 - First half	0.4
1950 - Second half	1.0
1951 - First quarter	15.6
1951 - Second quarter	23.9
1951 - Third quarter	32.2

The other large supplier of coal to Western Europe is Poland, which is expected to supply about 10 million tons in 1951. The following table shows the approximate disposition of Polish coal output in recent years:

Year	Production	Apparent consumption	Total Exports	Western Europe	Czechoslovakia and Finland	Remainder
1947	59.1	39.9	19.2	7.5	1.7	10.0
1948	70.3	43.8	26.5	11.9	3.6	11.0
1949	74.1	45.3	28.8	11.0	4.4	13.4
1950	78.0	50.2	27.8	9.0	4.9	13.9
est. ^{1/} 1951	82	53	29	10	5	14
est. ^{1/} 1952	85	57.5	27.5	9	5	13.5

Note: All figures in millions of metric tons.

The foregoing table indicates that the rapid post-war increase of exports from Poland until 1949 has since, at best, levelled off. A sharp rise in internal consumption and in exports to areas other than Western Europe, mainly the USSR and its satellites, has offset a decline in exports to Western Europe. It appears unlikely that Poland will materially increase its coal exports to Western Europe in the future partly because it may feel that except for Austria and Scandinavia, its coal is considered by Western Europe mainly as a residual source of supply as was evident in 1949-1950.

While the foregoing data would indicate an expectation of only 9 million tons of Polish exports in 1952 to Western Europe, based on Polish estimates submitted to ECE, it is our opinion that 10 million tons can be made available because it is not likely that actual consumption in Poland rose as much in 1950 as is indicated by apparent consumption data or that it will reach the levels estimated for 1952. At the much higher prices now prevailing for Polish coal, ^{2/} Poland will likely make strenuous efforts to maintain coal exports, so long as it can obtain essential materials at favorable relative prices. In the first seven months of 1951, exports to OEEC countries were about 8% above the level for the same period in 1950.

1/ As reported to Economic Commission for Europe, for 1952, except for allocation of 14 million to ECE countries, which we arbitrarily allocated at 9 to OEEC countries and 5 to Czechoslovakia and Finland. 1951 estimates are our own, based on ECE data for 7 months.

2/ Polish coal prices f.o.b. Gdynia to Sweden, which are typical, have fluctuated as follows:

Oct. 1947 - June 1950	-	\$13.50
June 1950 - Oct. 1950	-	10.90
Nov. 1950 -	-	12.90
Feb. 1951	-	15.70
Mar. - June 1951	-	21.50

Production Outlook

A study of the trends in production of Western European coal indicates that production in 1951 will approximate 460 million tons. A breakdown of this estimate in comparison with output for earlier years and with an estimate of ECE for 1952, made in July 1951, is given below:

Country	Production of hard coal in Western Europe 1946 - 1952 (millions of metric tons)							1952 ECE estimates	
	1946	1947	1948	1949	1949-50	1950	1950-51	1951 Est.	1952 adjusted
United Kingdom	193.1	200.6	212.8	218.6	220.7	219.8	221.5	225.5	228.5
West Germany	55.3	72.5	88.4	104.9	109.3	112.3	117.7	121.5	129
France	47.2	45.2	43.3	51.2	51.1	50.8	51.7	52.2	56.5
Saar	7.9	10.5	12.6	14.3	14.9	15.1	15.8	16.5	17.0
Belgium	22.9	24.4	26.7	27.9	27.5	27.3	28.0	29.5	29.5
Netherlands	8.3	10.1	11.0	11.7	12.1	12.2	12.4	12.5	12.5
Others	2.1	2.2	2.7	2.1	2.1	2.0	2.1	2	2
Total ^{1/}	336.8	365.6	396.7	430.5	437.7	439.6	449.2	460	475

Note: Estimates for 1951 are based on data for 8 - 10 months of output in that year. Estimates for 1952 are based on ECE estimates, dated July 3, 1951, modified upward to take account of more recent trends, especially in UK and Belgium, and to include coal produced in the US zone of Germany.

Consumption Outlook

It should be noted that accurate statistics of actual consumption are not available in most countries. In some countries, consumption can be estimated only on the basis of production plus imports, minus exports. In other countries, data on stocks at mines are shown, but little or no data on stocks in consumers' hands are available; only in Great Britain are figures published regularly indicating the level of stocks in the hands of consumers; in the case of a few importing countries, stocks at ports are published.

Under the circumstances, the available data for consumption (especially in cases where detailed data on stocks are not published) cannot be correlated very closely with other data. For Western Europe, as a whole, estimates of consumption in the post-war years have been prepared on three different bases as a prelude to an attempt to estimate probable consumption in 1951 and 1952. These estimates appear in the table on page 1.

^{1/} Totals do not necessarily equal sum of country figures because of rounding.

The changes in consumption over the preceding year for the three different bases are shown below:

	<u>Percentage changes in consumption (year to year)</u>		
	<u>Apparent consumption</u>		<u>Estimated Real consumption</u>
	Unadjusted for changes in stocks	Adjusted for changes in recorded stocks	(After allowance for probable changes in unrecorded stocks) ^{1/}
1947	14	n.a. ^{a/}	n.a. ^{a/}
1948	3.6	6.5	6.9
1949	5.5	4.1	4.8
1950	0.3	2.5	2.5
est. 1951	10.3	8.4	7.1

^{a/} Cannot be computed because of insufficient data but unlikely to have exceeded 10% in view of the sharp known increase in stocks in 1947 and the probable decrease in stocks in 1946.

An analysis of the above table (and of the figures on page 1) indicates that a year in which stocks are greatly increased (e.g. 1947) is succeeded by a year of consolidation (e.g. 1948), one in which apparent consumption (unadjusted) shows a smaller rate of increase than either of the consumption figures adjusted for stock changes. After a sharp decline in stocks in 1950, it is understandable that apparent consumption (unadjusted) should show a very substantial increase in 1951 over 1950, estimated at 10% on the basis of data for 8 - 10 months of actual output and trade. Because stocks were depleted rapidly in the latter part of 1950, it can be readily appreciated that importing countries would take the necessary steps to replenish their stocks wherever possible. Available data indicate that by the end of August 1951, a number of countries including UK, Sweden, Norway, and Portugal, had increased their recorded stocks to a level above those held at the comparable period in 1950. Recorded stocks in Germany, Belgium and France were still below the comparable 1950 levels at that time, but some increase in recorded stocks by the end of 1951 seems quite certain. Stocks in these countries declined steadily throughout 1950 due to rapidly increasing consumption and a lag in output and/or imports, while in the latter part of 1951 output and imports appear to be rising rapidly and the rate of increase in consumption seems to have slowed down.

Furthermore, it is held, although it cannot be verified for lack of published data, that unrecorded stocks have risen sharply in most countries, particularly where Government controls on inventories have been least stringent or totally absent. This tendency has been accentuated by fear of rising prices and scarcity particularly in the first half of 1951. To this phenomenon may be ascribed the fact that recorded stocks have shown little increase and in some cases further declines in the second and third

^{1/} Stocks in the hands of industry and consumers (except Great Britain).

quarter of 1951 at a time when available supplies were increasing rapidly. It is believed that the great bulk of increases in unrecorded stocks had occurred by the end of the third quarter. Continued heavy availabilities of imported coal in the fourth quarter and record post-war internal output should eventually be reflected in increases in recorded stocks, particularly in the last quarter of 1951. The stabilization of unrecorded stocks will be hastened by tightened restrictions on credit and by an apparent slowing down in the rate of increase in industrial output.

For the year 1951 as a whole, we estimate that fully 8 million tons will have gone to replenish stocks; 3 million in recorded stocks and an estimated 5 million for unrecorded stocks. While the increase in recorded stocks is relatively small (as compared with 10 million in 1947) the increase in unrecorded stocks is large (compared with an estimated increase of 2 - 3 million per year in 1947 - 8 and a decrease of 1 million in 1950).

The upward movement in 1947-8 and the decline in 1950 are predicated on the trends of industrial activity and prices. In early 1950, it is probable that unrecorded stocks declined substantially in view of declining prices for coal, mounting stocks at mine pits in Continental Europe and substantial increases in availability of water power in such important consuming countries as France and Italy. The trend was reversed after Korea, but because supplies could not be obtained too readily due to a decline in export availabilities from Britain and the lag in resuming imports from the USA, in all probability unrecorded stocks could not be built up as rapidly as desired.

Our hypothesis can be tested, in part, by a year to year comparison of the percentage rates of growth of industrial production in Western Europe with increases in coal consumption.

	<u>Increase in Industrial production^{1/}</u>	<u>Increases in coal consumption</u>		
		<u>Apparent Unadjusted</u>	<u>Apparent Adjusted</u>	<u>Estimated Real</u>
1948 vs 1947	15	3.6	6.5	6.9
1949 vs 1948	11.4	5.5	4.1	4.8
1950 vs 1949	10.7	0.3	2.5	2.5
est. 1951 vs 1950	12	10.0	8.4	7.1

^{1/} Computed from Economic Survey of Europe, 1950, for the OEEC countries only. Estimate for 1951, our own based on trends for 6 - 8 months.

When comparison is made of the relationship of changes in industrial output with apparent consumption of coal, unadjusted figures, as one would expect, do not accurately reflect the real situation. The increase in industrial output in 1949 over 1948 is noticeably smaller than for 1948 over 1947; yet apparent coal consumption rises by a larger percentage in the latter period than in the former. The very large increase in stocks in 1947 is the main cause of this apparent anomaly. In 1950, the situation is reversed because stocks were drawn down heavily.

As between the increase shown by apparent consumption adjusted for changes in recorded stocks, and our estimate of real consumption, which takes account of probable changes in unrecorded stocks, the differences in the 1947 - 1950 period are quite small. Either estimate fits in fairly closely with the trends in industrial output, when account is taken of the fact that a large amount of coal is used for purposes not directly related to industrial output such as domestic heating (probably over 20% in Western Europe as a whole).

At first glance, the increase in coal consumption in 1950 over 1949, appears too low in comparison with the 1949 gain over 1948, considering that the increase in industrial output was approximately the same in both periods. The fundamental relationship is between industrial production and total energy use (including not only coal but other forms such as electric power and heating oils). The main cause of the apparent discrepancy is the fact that hydro electric power output was unusually low in 1949, but rose very substantially in 1950. It is estimated that if hydro power output both in 1949 and 1950 had remained at the 1948 percentage of total electricity output, coal consumption in 1949 and 1950 would have been reduced by 7 million and 2 million tons respectively. Adjusting coal consumption for this factor the increases in coal consumption in both 1949 and 1950 would show a gain of about 3% per year over the preceding year.^{1/}

It appears probable that industrial production in 1951 will have risen about 12% over 1950, an even more rapid rate than the increases registered in 1949 and 1950. While this may seem over-optimistic when compared with ECE predictions early in 1951, it should be recalled that the pessimism of that group was based on the belief that inadequate supplies of raw materials would retard industrial output.^{2/}

In consequence, industrial output in Western Europe has clearly surpassed the expectations of the ECE as recorded in the Economic Survey of Europe, 1950, a fact recognized more recently in that group's Economic Bulletin for the second quarter of 1951. A natural concomitant of such increased output is an increase in coal usage, particularly because additional fuel needs have been supplied in very large degree by coal, since hydro power could not be expected to increase in 1951 by so large a percentage as in 1950, when compared with the low water year of 1949. It is

^{1/} Whereas the comparison in estimated real consumption (before adjustment) is between 4.8% and 2.5%, the comparison after adjustment is between 3.1% and 3.7%. It is not practicable to estimate closely the factors responsible for the remaining small difference.

^{2/} For example, ECE estimated that Western Europe would receive only 12 million tons of US coal in 1951, while receipts will actually amount to about 24 million tons. The 12 million ton mark was passed during August, and the rate accelerated rapidly to about 3 million tons per month in September and October. Furthermore, European availabilities of non-ferrous metals and steel have proven more adequate than predicted, partly because the pace of US buying for stockpiling has been greatly moderated; in fact, US stocks both private and governmental have been drawn down in recent months in copper, lead, zinc, and tin.

as yet too early to make precise comparisons for 1951 with 1950, in an attempt to isolate the factors responsible for the substantial increase in real coal consumption (estimated at 7.1%) as compared with about 3% per year (adjusted) in 1949-1950; a slightly higher rate of increase in industrial output (including an increasing proportion in heavy fuel-consuming industries, such as metals, and machinery) and greater proportionate use of thermal power in 1951 than in 1950, are at least partial answers.

It is believed highly unlikely that in 1952 the industrial output of Western Europe can match the accomplishments of 1951. Whereas industrial output increased by about 14% in the first half of 1951, the increase in the second half may be only about 10%. Output for 1952 will have to be compared with the very high levels of 1951, which probably cannot be increased by more than 6 - 8% at a maximum because the obstacles are apt to be more intractable. Chief problems are labor shortages and plant capacity limitations, rather than availabilities of raw materials which can be more readily overcome by increased imports at the expense of stockpiling programs, where policy considerations permit.

In our view, a 6 - 8% increase in industrial output can be achieved with an increase in coal consumption of about 3%, taking account of the possibility of operating thermal plants at unusually high rates of load, and assuming that household usage is not greatly increased either because of a moderate winter or by deliberate governmental limitations. It should also be noted that if the estimates for increases in recorded and unrecorded stocks for 1951 are accurate, it is unlikely that there will be any appreciable change in the total of such stocks in 1952. On the basis of an estimated real consumption of 484 million tons in 1951, it is unlikely that real consumption in 1952 will exceed 500 million tons, an increase of 3.3%.

1952 Coal Balance Sheet

If the foregoing estimate is accurate, the coal balance sheet for 1952 would compare with that for earlier years, as follows (in millions of tons):

Year	Total supply	Pro-duction	Net imports	Imports from		Net trade with others- (Imports + Exports-)
				USA	Poland	
est. 1952	500	475	25	17	10	-2
est. 1951	492	460	32	24	10	-2
1950	447	440	7	a)	9	-2
1949	446	431	15	10	11	-6
1948	422	396	26	17	12	-3
1947	408	366	42	34	7	+1

a) Less than one half million.

On this basis, Western Europe is likely to incur an expenditure for US coal equivalent at present prices to perhaps \$374 million in 1952 as compared with an estimated cost of \$528 million in 1951. Not all of this cost is incurred in dollars, since some of the coal is shipped in European flag vessels; in 1951 probably less than half was so shipped. To the extent that coal imports from the USA can be reduced, the saving is likely to be entirely on dollar account since it may be assumed that dollar shipping is marginal for Europe and the availabilities of European vessels for this trade will be at least as large in 1952 as in 1951.

It will be noted that the expected saving on dollar imports amounts to about \$150 million, the landed cost of 7 million tons of American coal. ^{1/}

Production in Western Europe is expected to increase by 15 million tons in 1952, almost equal to the amount of increased use. Since coal trade with other areas is expected to remain at 1951 levels, the reduction in imports from the USA as forecast is considered feasible only because imports in 1951 include an estimated 8 million tons to replenish stocks depleted in 1950, a phenomenon unlikely to recur in 1952.

After 1952, reductions in dollar imports of coal will depend almost exclusively on the ability of Western Europe to increase coal output at a faster rate than usage rises; appreciably increased coal availabilities from such non-dollar areas as South Africa and India cannot be expected in the short run. While Poland could increase her exports to Western Europe and expand her output appreciably, such action would be taken only if major changes in the world political situation occurred. With appropriate efforts and substantial new investments, Western Europe could eliminate her dependence on coal imported from the USA by the late 1950's. If coal consumption were to increase at a rate of 2% per annum, an increase in output at the rate of 3% per annum would close this gap in five years or less.

^{1/} As indicated above, the estimated reduction for 1952 in purchases of dollar coal is almost wholly dependent on an accurate estimation of changes in European stocks in 1951. If the increase in stocks estimated for 1951 proves over optimistic, the reduction in dollar outlays will be less than estimated.