

Böhm, Edward

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The Importance of the Soviet Union for the Fuel Supplies of the CMEA Countries

by Edward Böhm, Hamburg*

The six European member countries of the CMEA depend greatly on imports of energy, and oil and oil products in particular, from the USSR. In the coming years the Soviet Union will, however, probably be unable to satisfy all their import requirements so that they are likely to buy more oil in the world market.

The proven and potential fuel reserves of the European CMEA countries¹ and the Soviet Union taken together should be sufficient to ensure their supplies in the long term, for they possess about 60 % of the potential world reserves² and one quarter of the proven reserves which are commercially exploitable under present technical conditions³.

The fuel reserves are, however, spread so unevenly through the CMEA area that only the Soviet Union is really assured of self-sufficiency in all three fossil fuels – oil, gas, coal; about 80 % of all the exploitable fuel reserves are in the Soviet Union. The reserves of mineral oils and natural gas are of especial importance in this respect: the Soviet Union owns 97 and 98 % respectively of the total CMEA reserves of these, so that it holds a monopoly position in oil and gas. There are oil deposits of some significance in Romania and Hungary and of natural gas in Romania, Poland and Hungary, but these do not cover even the internal requirements of these countries.

The issue for a common CMEA fuel policy is therefore essentially the following: What quantities is the Soviet Union prepared to supply to its partners and on what terms?

From the Soviet Union's point of view its quasi-monopoly as an oil supplier involved no economic disadvantages as long as it was able to draw on easily workable reserves in the European part of the country. But the profitability of these oil exports became increasingly questionable when the production had, from the second half of the sixties onwards, to be shifted progressively into the Asian parts of the Union, the more so as the world prices – from which the CMEA prices are derived – tended to fall. Since more finance was needed for the policy of modernization of Soviet

industry with the aid of Western technology which was initiated at that time, additional supplies of fuel were also needed for exports to the West, for fuels are, together with raw materials, the major Soviet exports with outlets in Western markets. Therefore the Soviet Union has been trying since about the early seventies to keep the increase of oil deliveries to its CMEA partners within limits. To the other CMEA countries it suggested that they should seek increased cooperation with oil producing countries.

The CMEA coal reserves are distributed somewhat more evenly. In Czechoslovakia they cover all internal needs, and in Poland – the second largest coal exporter in the world – there is a substantial surplus for exports. The lignite deposits are dispersed even more evenly; major deposits have been found in the GDR, Poland, Czechoslovakia and Hungary.

Significance of the Soviet Deliveries

While their scanty indigenous resources set narrow limits to the European CMEA countries in their aspirations for greater independence as regards oil and gas supplies, their coal and lignite deposits offered them an opportunity to widen their native fuel basis and to lessen at the same time their dependence on the scarce mineral oils and natural gas. They pursued energy policies of this kind within the framework of a common fuel policy of the CMEA states.

It has to be noted first of all that the average annual growth of the aggregate CMEA energy production has

¹ This term is applied in the present article to the six European CMEA countries: Bulgaria, Czechoslovakia, the GDR, Hungary, Poland and Romania. When the Soviet Union is included, reference is made to the CMEA or CMEA area or region.

² Cf. M. Gorywoda: *Współpraca krajów RWPG w gospodarowaniu surowcami*, Warsaw 1978, p. 24.

³ Author's own calculations.

* HWWA-Institut für Wirtschaftsforschung-Hamburg.

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been stepped up considerably since 1973 – from 3.5 % (in 1971-1973) to 4.9 % (in 1974-1978). The European CMEA countries recorded especially good results; their energy production growth rate more than doubled – from 1.1 % in 1971-1973 to 2.6 % in 1974-1978. Nevertheless their energy balance worsened as they failed to curtail the growth rate of energy consumption; at 3.8 % annually in 1974-1978 it increased in fact markedly faster than their energy

production, and their energy deficit grew from 60.1 mn tonnes coal equivalent in 1970 – equalling 12 % of total energy consumption – to 101.4 mn tonnes, the energy gap thus attaining almost one-fifth of consumption.

There was little need for purchases outside the CMEA market to cover the energy deficiency of the European CMEA countries because the Soviet Union made up most of the shortfall. It was able to do so as it had in this period further increased the surplus of its energy production over its own energy consumption; during 1974-1978 its energy production rose at an annual average of 5.5 %, its energy consumption, on the other hand, only by 4.3 %. The energy surplus of the Soviet Union actually increased so much that it was not only able to compensate the larger energy deficit of its partner countries but the CMEA as a whole (USSR and European CMEA countries together) recorded a larger exportable energy surplus than in the preceding years (see Table 1).

Table 1
Energy Production^a and Consumption in the
European CMEA Countries and the Soviet Union
in 1970-1978

(in mn tonnes coal equivalent)

	1970	1973	1978
Production			
European CMEA countries	423.0	436.9 ^b (453.5)	496.6
USSR	248.8	1,418.2 (1,450.4)	1,854.2
European CMEA countries + USSR	671.8	1,855.1 (1,903.9)	2,350.8
Consumption			
European CMEA countries	462.6	497.0 (513.7)	598.0
USSR	1,074.1	1,175.2 (1,262.9)	1,445.4
European CMEA countries + USSR	1,536.7	1,672.2 (1,776.6)	2,043.4
Energy balance (production – consumption)			
European CMEA countries	– 39.6	– 60.1 (– 60.2)	– 101.4
European CMEA countries + USSR	+ 135.1	+ 182.9 (+ 127.2)	+ 307.5

^a Primary energy incl. hydro- and nuclear energy; ^b New revised figures. Sources: UN (ed.): World Energy Supplies 1973-1978, New York 1979, p. 38 ff; World Energy Supplies 1950-1974, New York 1976, p. 106 f.

Dependence on Soviet Oil

The favourable general picture of CMEA energy production hides however significant differences between the various sources of energy. In the European CMEA countries (not including the Soviet Union) the oil production has not been increased any further since 1973 but has been even slightly on the decline. The annual growth rate of oil consumption has, however, been reduced greatly – from 12.2 % in 1970-1973 to 6.3 % in 1974-1978. To prevent the oil deficit

Table 2
Production, Consumption^a and Coverage of the Requirements^b of Fuels in the European CMEA
Countries in 1970-1978

	1970	1973	1975	1976	1977	1978
Oil and oil products						
Production (mn tonnes)	16.27	17.03	17.41	17.55	17.45	16.57 ^c
Consumption (mn tonnes)	51.83	75.00	82.00	87.72	94.46	101.83
Production in % of consumption	31.4	22.7	21.2	20.0	18.5	16.3
Natural gas						
Production ^d (bn m ³ ^e)	35.01	46.60	50.47	56.24	56.11	57.9
Consumption (bn m ³ ^e)	37.44	51.66	61.79	69.95	71.23	74.43
Production in % of consumption	93.5	90.2	81.7	80.4	78.8	77.8
Coal						
Production ^f (mn tonnes)	180.30	196.10	210.95	218.37	224.78	231.64
Consumption (mn tonnes)	172.92	184.12	193.94	200.72	208.65	215.00
Production in % of consumption	104.3	106.5	108.8	108.8	107.7	107.7
Lignite						
Production (mn tonnes)	442.2	434.2	442.0	441.9	454.8	459.2

^a Production + imports – exports; ^b Production in % of consumption; ^c Estimates; ^d Incl. gases produced together with crude oil; ^e at 0° C and 1,013.25 mbar; ^f Incl. anthracite; net production.

Sources: Cf. E. Böhm: Die Rolle der Sowjetunion in der Brennstoffwirtschaft des RGW (The role of the Soviet Union in the fuel economy of the CMEA), Report No. 57 of the HWWA-Institut für Wirtschaftsforschung-Hamburg, indication of source material on p. 55; author's own calculations.

worsening, oil consumption should, however, not have risen at all; the – albeit substantial – slowing of consumption growth was not enough. The oil deficit has therefore increased, both absolutely and relatively (in proportion to the aggregate oil consumption). In 1973 indigenous production (17.4 mn tonnes) still covered 22.7 % of local consumption; by 1978 the output was down to 16.6 mn tonnes and its share of consumption to 16.3 % (see Table 2). The shortfall to be covered by imports had gone up from 68.7 mn tonnes in 1973 to 99.4 mn tonnes in 1978, and the supplies from the Soviet Union from 55.2 to 73.2 mn tonnes in the same period. The share of Soviet deliveries in total oil imports into the six European CMEA countries has thus fallen from about four-fifths in 1973 to three-quarters in 1978.

Not counting Romania, which was not supplied by the Soviet Union, the Soviet share of the aggregate oil imports of the other five CMEA countries rises to 85 %, both in 1973 and in 1978; when measured not by the oil import figures but by the (lower) oil consumption of the five countries, the Soviet share was even higher – 90 % in 1973 and 88 % in 1978. These high percentage figures testify to the dependence of the European CMEA countries on the Soviet Union for their oil supplies.

A portion of the oil imported by the five countries was re-exported which accounts for the fact that they exported more than twice as much oil as they produced. These re-exports probably involved the re-sale of cheaply acquired Soviet oil as well as oil from third countries. The five CMEA countries exported in 1973 and 1978 5.8 and 6.6 mn tonnes of oil respectively (see Tables 2 and 3). These re-export deals can hardly make the Soviet Union any more amenable to the ever growing requests of its CMEA partners for more oil.

Natural Gas Supplies

As regards natural gas, the European CMEA countries find themselves in a similar supply situation as with respect to mineral oil. They were able to lower the average annual consumption growth rate – from 11.2 % in 1971-1973 to 7.7 % in 1974-1978 – but this reduction was not sufficient to cut down the natural gas deficit because the rate of average production increase fell off in the same period – from 10.2 to 4.5 %. In 1973 the indigenous natural gas production of the European CMEA countries, amounting to 46.6 bn m³, still covered 90.2 % of gas consumption. The shortfall of 22.2 % equal to 16 bn m³, had to be covered by 94 % through imports from the Soviet Union. Although the bulk of the natural gas imports thus consisted of Soviet gas, the dependence on the Soviet Union was smaller than in the case of mineral oil, as the Soviet gas supplies accounted for only 21 % of the consumption of the European CMEA countries.

Coal Production

Coal is of particular importance for the fuel policy of the CMEA countries, and not only the European CMEA members. The Soviet Union is also interested in making more use of coal from its own immense deposits, wishing to ease its own oil position by burning more coal. Because of this importance of coal for the European CMEA countries as well as the Soviet Union the success to date of the CMEA energy policy can be judged in great measure by the enhanced standing of coal in the fuel balance, i. e. in fuel production and consumption.

It can be seen from Table 2 that the European CMEA countries have been successful in raising the average growth rate of coal and lignite production. The increase

Table 3
The Fuel Imports of the European CMEA Countries and the Soviet Union's Share of these Imports in 1970-1978

	1970	1973	1975	1976	1977	1978
Mineral oils^a						
Total imports ^d (mn tonnes)	45.6	68.7	77.3	85.6	91.1	99.4
Imports from the Soviet Union (mn tonnes)	40.2	55.2	63.3	68.4	69.7 ^b	73.2 ^b
Imports from the Soviet Union (% of total imports)	88.2	80.4	81.9	79.9	76.5 ^b	73.7 ^b
Natural gas						
Total imports ^d (bn m ³)	2.73	5.38	11.57	13.99	15.57 ^b	16.05 ^b
Imports from the Soviet Union (bn m ³)	2.18	4.82	10.50	12.49	14.48	15.94
Imports from the Soviet Union (% of total imports)	80	90	91	89	94	94
Coal^c						
Total imports ^d (mn tonnes)	28.5	31.7	28.2	27.7	27.4	24.8
Imports from the Soviet Union (mn tonnes)	16.0	17.6	18.0	18.2 ^b	18.7 ^b	
Imports from the Soviet Union (% of total imports)	56.1	55.7	63.9	65.6 ^b	68.3 ^b	

^a Crude oil and oil products; ^b Estimates; ^c Incl. coke; ^d Sum total of imports into the individual countries.

Sources: See Table 2.

of the average annual growth rate by 0.6 and 1.7 percentage points shown for 1974-1978 compared with 1971-1973 may at a first glance seem small but it is not insignificant considering how capital-intensive investments in the coal and lignite industry are. The average annual growth rate of coal consumption had also risen – to 3.1 % in 1974-1978 – though at a slower pace than the average annual growth rate of coal production which had reached 3.4 %. Thus not only the local consumers but exports (to non-CMEA countries) benefited from the extra output.

A more differentiated view must be taken of the development of the coal industry in individual CMEA countries. The surplus coal was mined almost exclusively in Poland; all the other European CMEA countries except Czechoslovakia depend on coal imports, with the GDR and Bulgaria importing as much as 94 and 99 % of consumption requirements, respectively. Coal imports from the Soviet Union accounted in 1973 for 55.7 % and in 1977 for 68.3 % of all coal imports. In terms of the coal consumption of the European CMEA countries the Soviet deliveries are less important, however, because they covered in 1973 only 10 % and in 1977 only 9 % of consumption.

Taking an overall view, the six countries seem to be largely independent of Soviet supplies. However, this does not apply to the GDR and Bulgaria; these two countries' supply of coal has been safeguarded to an overwhelming extent by deliveries of Soviet coal.

Unsatisfactory Results in the USSR

In the Soviet Union coal production has not developed as well as in its partner countries; it has not even been possible to maintain the previous growth rate. The average annual growth rate of coal production declined from 2.1 % in 1970-1973 to 1.7 % in 1974-1978 and that of lignite production from 2.0 to 1.2 %. The unsatisfactory results are to be ascribed in the main to plant obsolescence. After years of neglect the investments in the coal and lignite industry have to be used not only for providing new mining capacities but for modernizing existing mines as well. There are no signs of this stagnation in the Soviet coal and lignite industry (in 1979 the production actually showed an absolute decline) being overcome in the near future. The present unsatisfactory production figures will, however, not necessarily lead to export cutbacks, for coal exports, unlike those of mineral oils, account only for a small proportion – never more than 5 % – of the Soviet production. (The lignite production figures are of no importance for the export trend because lignite is not exported by the Soviet Union.)

To sum up, it may be stated that in the total CMEA area (Soviet Union and European CMEA countries) production and consumption have remained highest in the natural gas and oil area, with the result that the relative share of the solid fuels, which was to have been enlarged, has declined further to 39.7 % of production and 43.8 % of consumption. The European CMEA countries managed a slight improvement of the share of solid fuels in total fuel *production* – to 81.5 % – but did not prevent the recessive trend of the share of coal in total fuel *consumption*. Until 1978 at least, the aimed-at restructuring of the fuel balance in favour of coal failed to materialize. In the Soviet Union the failure has been even more marked; here the share of the solid fuels declined in production as well as consumption.

Supplies under Contract

It is not yet clear what deliveries the Soviet Union will make under contract in the new five-year plan period. Soviet quarters have announced a 20 % increase in total fuel and energy deliveries to CMEA countries⁴. Whether this rise will apply equally to all kinds of fuel was left open. (Additional oil deliveries may conceivably be offered for payment in hard currencies.) This would be a smaller rate of increase than took place in 1976-1980 compared with 1971-1975. On the assumption that the foreshadowed 20 % increase applies to all fuels equally, about 445 mn tonnes of crude oil, 55 mn tonnes of oil derivatives and 105 bn m³ of natural gas will be supplied in 1981-1985. This means an annual average of 100 mn tonnes of crude oil and derivatives and 21 bn m³ of natural gas of which an estimated 90 % (90 mn tonnes of crude oil and derivatives) would go to the European CMEA countries. Compared with the deliveries of 76.9 mn tonnes of crude and derivatives forecast for 1980⁵, this would be an increase of oil exports by approximately 17 %. If the oil requirements of the European CMEA countries continue to grow up to 1985 at an annual rate of 6 % as hitherto, they would have to import in 1985 over 60 mn tonnes of oil from third countries instead of 26 mn tonnes as in 1978, and assuming an annual advance of the world market price of crude oil by 10 % – which is probably an underestimate – their convertible-currency outlays would more than treble. To finance this expenditure the European CMEA countries would not only have to expand the exports of products which are already being sold to other countries but have to create new markets for new products.

⁴ B. R a c h k o v: How Soviet Union Views Future Oil Production Exports, in: *The Oil and Gas Journal*, 1979, No. 49, p. 54.

⁵ Cf. *Nachrichten für Außenhandel*, April 5, 1980.