

development assistance, funds saved in the developing countries can be directly applied to development problems.

Should universal plans for a reduction of military budgets not succeed in the United Nations, the United States should explore the possibilities for regional and bilateral cutbacks. These cutbacks could occur in both the developed world, between NATO and the Warsaw Pact, and in areas of confrontation in the developing world such as Peru and Chile, Algeria and Morocco, India and Pakistan.

The United States should continue its support for the goals of the Second Development Decade (including 0.7% GNP official development assistance) even if military expenditure limitations fail.

Both goals can be furthered if the international community continues to explore the manner in which disarmament and development linkage can be strengthened. Once the technical details are solved, different types of disarmament/development schemes can include military expenditure limitations agreements on bilateral and multilateral terms, an international tax on arms transfers with the proceeds allocated to development, and an international tax on military expenditures to be collected under UN jurisdiction to support UN peacekeeping forces and development assistance.⁶

6. For a further discussion of a tax on arms transfers proposal see Barry M. Blechman and Edward R. Fried, *Disarmament and Development: An Analytical Survey and Pointers for Action*, UN Economic and Social Council, January 26, 1977. For an analysis of an international tax on military expenditures see Daniel Gallik, *Military Expenditures and Development Aid: A New Concept of Restraints and Linkage*, US Arms Control and Disarmament Agency, July 26, 1977 (unpublished) and Daniel Gallik, *Military Expenditure Tax Concept Paper*, US Arms Control and Disarmament Agency, August 18, 1977 (unpublished).

It is often assumed that the Soviet Union and the Eastern European bloc are a self-contained area in energy matters. The Soviet Union is net exporter of petroleum and, though the Eastern European countries are not nearly self-sufficient, they are thought to be adequately supplied by the Soviet in blissful socialist stability.

Meeting Hungary's Energy Demands

GEZA G. SZUROVY, JR.*

Since the early 1970s scholars have increasingly pointed out that there may be some energy problems in the Eastern bloc. Most of these articles deal with the Soviet Union specifically, mentioning the Eastern European bloc only in passing. It is easy to conclude from these fleeting references that, despite some

* Geza Szurovy is a candidate for the MALD degree at The Fletcher School.

minor headaches, the supplying of petroleum to the Eastern bloc is not a major problem for the Soviet Union.¹

This case study of Hungary's oil and gas problems and prospects aims to illustrate the seriousness of the energy problem in the Eastern bloc. Although alternative sources of energy are being developed at an accelerated pace, hydrocarbons will nevertheless be the dominant energy source in the bloc until at least 1995. Eastern European decision makers face just as complex and sensitive an energy problem as their Western counterparts.

Hungary's oil and gas industry was established in the late 1920s with assistance from the United States and Germany. There were two oil companies: MAORT, the Hungarian-American Oil Corporation established in cooperation with Standard Oil of New Jersey; and MANAT, the Hungarian-German Oil Corporation established in cooperation with the German Wintershall AG. Hungary was self-sufficient in crude oil by the end of the twenties and actually exported small quantities to Austria and Germany in the thirties. MAORT and MANAT established a monopoly in the Hungarian market through territorial divisions.

After the war, MAORT and MANAT were divested. Foreign interests were nationalized and the industry was combined into MASZOLAJ, the Hungarian-Soviet Oil Company. Soviet personnel made a very significant contribution to rebuilding the Hungarian oil industry after the war, in the process learning everything they could from the advanced German and American technology left behind.

In 1952, the Soviets officially pulled out of the Hungarian oil industry and the National Oil and Gas Trust (OKGT) was formed. OKGT was responsible for the full cycle of the petroleum business: exploration, extraction, refining, and marketing. In existence ever since, OKGT has developed some seemingly autonomous subsidiary organizations for refining and marketing. Under the surface it remains a typical vertically integrated state monopoly.

The Hungarian petroleum industry, then, is highly developed and has a long history, in contrast to the more recently developed and less experienced Polish, East German, and Czechoslovakian petroleum industries which produce on much lower levels and consequently import an even higher percentage of their oil and gas from the Soviet Union. Presently, Hungary produces about two million tons of oil annually. It is hoped that output can be raised to 2.5 million tons by 1980.

Natural gas has been somewhat more promising. A major discovery was made in 1965 at Algyo near the Yugoslav border. Consequently, Hungary is almost self-sufficient. There is little hope, however, for further discoveries and

1. See for example R. W. Campbell, *The Economics of Soviet Oil and Gas*, Baltimore, 1972; and R. E. Ebel, *Communist Trade in Oil and Gas*, New York 1969; and M. I. Goldman, "The Soviet Union," in *Daedalus*, Fall 1975, pp. 129-145.

by 1980 Hungary will probably be importing significant amounts of natural gas. Hungary is served by an internal system of pipelines, and of course, by the Soviet-sponsored Friendship and Friendship II COMECON pipelines, which are really branch extensions of the main line.² Hungary's oil refining industry, the most up-to-date and vibrant in the Soviet bloc, is still undergoing considerable expansion.

After World War II, Hungary embarked on a program of rapid industrialization. The conversion from a primarily agrarian to an industrial economy led to sharp increases in the demand for petroleum fuels. In the thirty years since the close of World War II, the annual growth rate in demand has averaged 7.5 percent.³ Indigenous production, on the other hand, has grown by an insignificant 400,000 tons since 1955 (from 1.6 million tons to 2 million tons in 1975). Consequently, Hungary's growing oil demands have been met primarily through imports from the Soviet Union. Hungarian imports have grown from 3.4 million tons in 1967 to 7 million tons in 1975.⁴ Since 1970 the Soviet Union has provided at least 70 percent of Hungary's oil needs.

At present, petroleum comprises 57 percent of Hungary's total energy supply. This share is expected to rise to 64 percent by 1980. Hungary's overseas imports could possibly reach 5 million tons by 1980.⁵

Although Hungary's short run natural gas conditions look somewhat better, in the long run this picture is equally bleak. At present, Hungary produces 5.2 billion cubic meters per year and imports 0.6 billion cubic meters from the Soviet Union and 0.2 billion cubic meters from Rumania. Domestic production is expected to rise to only 6 million cubic meters by 1980. Over the same period no increase is expected from Rumania, while imports from the Soviet Union are forecast to rise from the present level of 0.6 billion cubic meters to 3.8 billion cubic meters.⁶

2. It is interesting to note that many non-party industrialists in Hungary are quite convinced that the main COMECON lines were built through mountainous Czechoslovakia rather than flat Hungary for security reasons. The economic argument certainly has its pros and cons. The route through Hungary is longer, but entirely on flat land, and given the accelerated pipeline construction costs in mountainous areas such as the Carpathians, critics feel that the longer route would have been economically less expensive. The economic criticism is backed by political rationale. The plans for the line were made in the late fifties, in the aftermath of the 1956 Hungarian revolution. At the time Czechoslovakia was the Soviet Union's staunchest ally. 1968 was unforeseeable. Ultimately the tap can always be turned off at the Soviet end, but political considerations must be taken into account, for a revolting satellite can easily disrupt the flow of oil through its own territory to other, maybe more loyal satellites in a crisis situation, creating potentially insurmountable logistics problems.

3. This data may be extrapolated from the *Petroleum Economist's* various yearly estimates.

4. Economist Intelligence Unit, *Soviet Oil to 1980*, London, 1973, p. 49. Also see F. Boroczfy, *As Europai Szocialista Orszagok Gazdasaga*, Budapest, 1975.

5. "Eastern Europe: Hungary Looks for New Supplies," *The Petroleum Economist*, May 1976, p. 188.

6. *Ibid.*

This suggests that the Soviet Union, the traditional source of Hungary's oil, is unwilling to raise exports to satisfy likely future demands. This is indeed so. The most important reason is that the Soviet's 1980 crude production is unlikely to be able to satisfy both domestic and Eastern bloc needs because the increasing demands of the expanding Soviet consumer and military industries and of a rapidly expanding transportation sector (both private and public) seem likely to outstrip the Soviet's capability to expand production from Siberian oil fields. The Soviets have extracted much of their easily accessible oil and they are running into serious technological difficulties as they attempt to extract the "difficult" oil from greater depths and the hostile wilderness of Siberia. Compared to crude oil, Soviet reserves of natural gas are more abundant and accessible. Thus, the jump in Hungary's projected imports of Soviet natural gas seems to present no problem. As a matter of fact Hungary has just started construction of underground gas storage facilities in anticipation of future imports from the Soviet Union's Orenburg gas fields. Natural gas is to come in at an even rate and will be led into the distribution system from the storage caves in order to meet fluctuations in demand.⁷

Soviet bloc countries have two primary national security concerns: internal stability and external security. The state of the economy plays a key role in both. From the point of view of internal stability it is very important within each of these countries to insure a yearly increase in living standards for a broad cross section of society. An important aspect of security is economic self-reliance and the energy connection is obvious. Economic self-reliance includes energy self-reliance. An adequate increase in living standards depends crucially on economic expansion which is impossible without adequate energy supplies.

When there is a tight supply of energy the contradictions between national and interregional policies emerge. Both the Soviet Union and Hungary have their own interests to consider. Since the relationship between the two countries is a dominant-subordinate one, the Soviets also have to make a priority decision in terms of what is and is not to be "allowed" Hungary. This has a curious reverse effect. Once an indication is given to Hungary that it should attempt to develop independent (i.e., non-Soviet) sources of energy, it becomes very hard for Hungarian decision makers to decide just how far to proceed. Contradictions in economic interests also compound the problem. The Soviets would like to get the same prices as OPEC for its oil, while Hungary would prefer to keep prices as low as possible. This problem is compounded by the Soviets' desire for hard currency with which to buy more Western technology and ease their trade deficit with the West. The Hungarians, as importers, have to buy non-socialist oil with hard currency. Perpetual internal power struggles in Hungary and in the Soviet Union compound the problem.

7. See G. Szurovy, Sr., "Underground Gas Storage," *Ele es Tudomány*, 1977, No. 7, Vol. 32.

The Soviet Union's energy policy attempts to satisfy domestic needs and maximize the economic profitability of their exports. Political factors are also important in all Soviet bloc trading. Pressure to increase their oil export prices to OPEC levels had to be used indirectly and very delicately. First, at a Bucharest COMECON meeting in January, 1975, the price of oil was increased by approximately half the OPEC increase (from \$2.50 to \$6.95 a barrel) and a formula was adopted to gradually raise the prices to world levels by 1980. Then in early 1976, Hungary was informed that the per barrel cost of Soviet oil would be approximately \$7.50. The Soviets also announced that the prices would be subject to yearly review. It was also stated that Hungary would be expected to contribute both technically and financially to developing the Siberian fields.

Hungary's need to import ever-increasing amounts of foreign oil creates additional problems. Permission has been granted by the Soviets, but the issue is not a simple matter of purchasing foreign oil because Hungary is chronically short of foreign currency. Barter is difficult because the quality of Hungarian goods is frequently inferior to those that can be bought from the West with oil money. Nevertheless, on certain functional items such as transformers, Hungary's lower labor costs may permit a profitable exchange.⁸ Interestingly, the products of joint ventures between Hungary and Western companies are far more competitive in the oil producing nations than Hungarian goods.

Hungary can also offer technical assistance in exchange for oil. Hungary has obtained three exploratory drilling contracts at Jambur in Iraq; however, it missed a much greater opportunity because of cumbersome indecision. Had Hungary acted decisively in negotiations with Iraq during 1970-71, she could have had the development and technical maintenance contracts for both the Rumaila fields and a great portion of the Kirkuk field. Before telling any other foreigners about these two giant fields, Iraq specifically invited a Hungarian delegation of technical experts and offered them this lucrative development deal.⁹ The party administrators were flabbergasted at the prospects of taking such an independent step. The Soviet Union had to be consulted. Although the Soviets publicly gave their consent, the administrators still hesitated. More meetings were called. Finally, as Iraqi patience ran thin, she began to approach the other COMECON nations and Hungary obtained the much smaller Jambur contract.

8. There have been numerous examples of the producers' dissatisfaction with Hungarian products that proved inferior, e.g., buses in Iraq. On the other hand, there has been general satisfaction with electric equipment, e.g., transformers in Kuwait. Contracts for the joint venture products have just been made recently. Their long-term success still remains to be seen.

9. Such offers are often made without public or irrational tenders if personal contacts between Ministry officials and industrialists of the countries involved lead to a preferential selection for a contract.

To summarize, buying oil from non-socialist sources is not a financially desirable solution to Hungary's future energy supply problems. Internal management problems have to be overcome if Hungary is to attain effective results, and overall Communist bloc political objectives cannot clash too violently with what may seem an individual country's best interest. From the Soviet point of view, the Eastern bloc countries' increasing dependence on non-socialist oil sources has contradictory ramifications. It means that more oil is available to fulfill the Soviet's domestic development and growth requirements and that the Soviets can export surplus oil to the West for hard currency. But increased Eastern bloc reliance on non-Soviet oil can also mean a security threat to the whole Soviet bloc. Independent dealings of Eastern bloc nations on a large scale may make them too independent of the Soviet Union. If bloc members become accustomed to making independent decisions in situations where the Soviet Union is not adversely affected, the process may snowball in future situations where the Soviets may be hurt. It is because of these political considerations that the Economist Intelligence Unit concludes that the Soviets prefer that the Eastern bloc nations only import from other countries the minimum amount of oil necessary to prevent short-term supply shortages. Indeed, should the political situation merit it, oil would be taken away from the Soviet domestic market and sold to Eastern Europe.¹⁰ In conclusion, this case study of Hungary's needs and sources of petroleum energy illustrates how world energy problems manifest themselves within the socialist environment. The world of the socialist energy policy maker is just as full of dilemmas and paradoxes as that of his Western counterpart, his feelings of imbalance just as great.

10. Economist Intelligence Unit, *Soviet Oil to 1980*.