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Energy for Western Europe

Intense concern about energy has abated in the United States, but in Western Europe it will continue for the foreseeable future. In the United States a combination of conservation, improved energy efficiency, and substitution of alternative sources of energy for oil has reduced imports markedly. A growing petroleum reserve provides a buffer against short-term interruptions of supplies. Europeans also have practiced conservation and attained increased energy efficiency, but in contrast to the United States their local resources of fossil fuels are tiny. There is practically no oil on the western portion of the continent. North Sea oil supplies only about one-fifth of the region's requirements. The remainder must be imported from countries that have repeatedly brandished the "oil weapon." The best coal deposits of Western Europe have been exhausted. West Germany obtains one-third of its energy from coal, but to achieve this must engage in a gigantic strip-mining process. Towns and villages are dismantled, and overburden as much as 200 meters thick is moved to get at lignite deposits.

In view of the uncertainties associated with supplies of oil and the difficulties, costs, and pollution associated with coal, the Europeans expanded their use of natural gas during the 1970's to the point where it amounted to about 200 billion cubic meters (bcm) or approximately 15 percent of total energy needs. Most of it is burned for residential heating. But reserves of natural gas in Western Europe are inadequate, and they are dropping. A major source is located at Groningen in the Netherlands. It supplies part of the needs of Belgium, France, Italy, and West Germany. Proved reserves at Groningen total 1600 bcm. Until recently this resource has been exploited at the rate of about 95 bcm per year. In practice the amount that can be produced drops with time; the Dutch estimate that they will be obtaining about 60 bcm in 1990. Exports will be sharply reduced. The North Sea is another source of natural gas. Gas from the British sector flows to the United Kingdom at an annual rate of about 32 bcm. Gas from the Norwegian sector (23 bcm) is sent south to the continent. Additional reserves, totaling about 1600 bcm, have been discovered in the Norwegian sector south of latitude 62°, but they are difficult to exploit. It is estimated that 12 to 14 years must elapse before the reserves could be used.

The other major supplier of natural gas to Western Europe is the Soviet Union. It has been delivering small quantities for roughly a decade and currently delivers about 25 bcm annually. The projected new pipeline would carry 28 bcm annually. Construction of facilities to bring Siberian gas to Western Europe will be a big project, but not a difficult one—5000 kilometers of large pipe and some compressor stations. Production capability is already in place. Soviet proved reserves are enormous (39,000 bcm), and much of the country has not been fully explored. In comparison, reserves in the United States are about 5600 bcm. The Russian reserves contain the energy equivalent of more than 200 billion barrels of oil, which in turn is more than the oil reserve of Saudi Arabia.*

Leaving ideology and national security aside, there is reason for cooperation between the Soviet Union and Western Europe. The former is rich in energy resources and wants high-technology imports. The latter needs natural gas and the jobs associated with producing goods. In contrast, the United States competes with Europe for both oil imports and sales of goods on the world market. In taking on an additional 28 bcm per year from the Soviet Union, the security of energy supplies of Western Europe is not much diminished beyond what it would be if more oil were imported instead. In contrast, were more coal supplied from the large, highly accessible reserves of the United States, and were practical gasification facilities in being, the hazards of an interruption of gas supplies might be minimized.

In dealing with its European allies, the United States should adopt a long-term view. In a few years, the current political issues may or may not be resolved. But the reality of the U.S.S.R. as a major producer of fossil energy will remain, as will the needs of Western Europe.—PHILIP H. ABELSON

*Office of Technology Assessment, *Technology & Soviet Energy Availability*, November 1981.