

50 per cent in 1981) of its total energy utilization. The government also intends to reduce total energy consumption. (The Mitterrand government has since lowered its previous objectives for the 1990 Global Energy Consumption Program). In the policy of spreading requirements over a number of energy types, the most important gainers will be nuclear power, coal and natural gas.

Nuclear power, which provided only about 12 per cent of primary French energy needs, is targeted to contribute 26 to 28 per cent by 1990. Coal and natural gas clearly will continue to play very significant roles in the energy supply equation over the next decade.

Canada has already made some initial steps toward becoming a supplier of coal to France. Arctic natural gas has yet to be shown economically feasible for development and export to Europe but, if this does prove to be so, Canada should be in a position to entertain supply to France of this product also. Both of these specific opportunities are discussed in further detail below. With regard to opportunities in industrial co-operation, the reader is referred to Section 7, page 31.

I. COAL

The Opportunity

Discussion of the market for coal must make a distinction between the two types of utilization: for thermal or for metallurgical purposes. In the case of France, the primary opportunity is for exports of thermal coal. However, should the steel industry, which accounts for about 30 per cent of total coal consumption, regain its strength, there are medium to long-term prospects for some contracts for coking coal in France.

Forecasts of French thermal coal demand for the 1980s indicate two trends. First, thermal coal demands overall will remain essentially stationary during the decade. (Table VI shows the evolution of domestic production and importation of coal since 1900.) The second trend is the gradual decline of coal use by the utility sector and the increasing use by the industrial sector, where coal utilization by the cement and other industries is forecast to more than double. The expected industrial shift to coal will depend on a combination of two factors, namely the success of government programs to encourage conversion to coal, coupled with the expectation that the real cost of oil will continue to rise as a long-term trend.

French coal production, which was 56 million tonnes in 1960, has rapidly declined to 15 million tonnes in 1981. It is expected to stabilize at about this level although the French government has placed heavy emphasis on the need to increase domestic coal production.

Current demand is divided between 15 million tonnes for the coking coal market, 28 million tonnes (including 2 million tonnes brown coal) for electricity generation, 0.5 million tonnes for the cement industry and

8.5 million for other sectors. Demand by the electricity sector is forecast to drop to 25 million tonnes this year, 20 million tonnes in 1985 and 15 million in 1990. The cement industry will have virtually completed its conversion to the utilization of coal by 1985 with requirements estimated at 3 million tonnes annually.

Coal demand by the so-called "other" sectors is forecast to show the most dramatic increase from 8.5 million tonnes in 1979 to 9.5 in 1982, 14 million in 1985 and 21 million tonnes in 1990. Included in this sector would be industrial and commercial users other than the cement industry, residential users, and coal required for new gasification uses. It must be said that, while this group shows the largest projected increases, estimates are also subject to the greatest degree of imprecision.

The Republic of South Africa, Poland, the U.S., Australia and the Federal Republic of Germany have been important suppliers for coal imports in the last few years (Table VII). Uncertainties and supply limitations in some or all of these countries suggest that there are likely to be changes in the relative and absolute importance of these countries as sources for French coal requirements. Expressed interest in Canadian coal properties and recent visits of French coal officials suggest that Canadian coal may supply some of France's thermal coal needs in the 1980s. French interests already have minor equity positions in two mining operations in Northeastern British Columbia and one in Alberta. These ownership positions are manifestations of French government policy to encourage and intensify participation in mines outside of France. The objective is to command a production outside of France of some 10 million tonnes per year.

The Canadian Industry

Coal is mainly exported from Alberta and British Columbia to markets in the Far East, South America and to a very modest extent, Western Europe. Limited tonnage (approximately 5 per cent) originates in Nova Scotia. The industry can be considered in two main sectors: 1) coking coal for coke making in steel works, and 2) thermal coal for power stations and industrial heating. The latter is the type most relevant to this sector opportunity.

After a decline in the 1950s and early 1960s due to a transition to petroleum throughout the economy, Canadian coal production has recovered and increased steadily to reach a total of 40.1 million metric tonnes in 1981. Estimates of coal resources in Western Canada, where it is believed 93 per cent of Canadian resources are located, indicate over 200 billion tonnes including all types. The resurgence of coal production over the past decade has been paralleled by a vast change in mining, transportation and marketing for the various types of coal. The supply situation has strengthened greatly in Western Canada due to major expansions. In the next few years, several additional mines will come into production. These will contribute to achieving production for the latter 1980s of some 60 to 70 million tonnes