The Canadian situation in the field of coal is quite different from that of most other countries. Canada is a nation which has rich coal resources, very rich, but at the present time we use only a small amount of coal in our energy supply mix. We hope to change that. Currently, only about 9 per cent of our primary energy is derived from coal. This contrasts dramatically with the ratios of our western nations. Twenty per cent of the primary energy needs of the United States is supplied by coal. In the United Kingdom the figure is 36 per cent. It is 38 per cent in Australia and about 68 per cent in South Africa. In fact, South Africa leads the world in the introduction of coal into its energy supply mix, and it presently derives a significant fraction of its supply of liquid fuel directly from coal.

• (1700)

I am sure members opposite will want to know that Canada has estimated coal reserves of some 50 million tons of all types. In 1980 Canadian coal production rose by approximately 9 per cent, in physical terms, over that of 1979; and while our coal production in 1979 amounted to some 33 million tons, Canada remained a net importer. This situation will likely reverse itself as early as 1982 or 1983 due to the expected increase and demand for Canadian thermal coal on both the domestic and export markets.

However, Canada has been a net exporter of metallurgical coal for a number of years. It is worthy of note that Canada exports a higher percentage of its coal production than does any other country. Indeed, we exported fully 45 per cent in 1978. It is interesting that, in contrast with other energy sources, coal is relatively unregulated in Canada, and coal and coke enter and leave Canada duty-free. Importing countries have been attracted to Canada because they see us as a secure supplier. Canada is a nation whose coal production is still small in relation to its reserves and whose dependence upon its coal resources for its own needs is still not great. But we are doing much in this area.

I would like to cite some of the federal government's initiatives with regard to coal. We are, of course, actively seeking new markets but, more important, we are carrying much of the financial burden of new coal development by ensuring that the infrastructure is present to adequately handle the increase in coal traffic. We will have a new coal port built at Ridley Island. The coal terminal at Thunder Bay is expected to be expanded and upgraded. There will be major expenditures for the purchase of bulk rail cars and improvements to rail facilities on the west coast, the east coast and areas adjacent to the Seaway.

The oil sands could well be the major source of Canada's future oil supply. We are currently examining processing techniques at the tar sands, and we are convinced that under certain circumstances coal can be useful in both the extraction process and in the upgrading of these oils. Where steam is required to stimulate the production of heavy oil, coal could be used to generate that steam. Where carbon dioxide is required for enhanced recovery, this also could be provided from coal using processes such as the production of methanol. The linkage between the technologies needed for the optimum development of our oil sands resources and for the coal conversion processes is important. The Alsands group, a consortium led by Shell Oil, is planning a major oil sands mining and upgrading plant north of the existing Syncrude facility. This group of companies intends to use fluid coking as the main technology to upgrade the separated bitumen.

Another interconnection of the oil sands and the coal liquefaction process is being studied in our own laboratories here in Ottawa. For many years we have believed that in the long run it is better to treat the bitumen with hydrogen to upgrade it in order to expand the quantity of liquids which can be produced from the raw feed stock. Our scientists and engineers found that it was better to use a disposable catalyst supported by coal in conjunction with what is called a hydrocracking process. When the object of the process is to upgrade bitumen only, a small quantity of coal is used—that required to supply the necessary catalyst. However, it has become evident that coal could play a much larger role in this process and that coal might be increased to as much as 50 per cent of the feedstock weight. In this mode of operation, what we call coal processing, both bitumen and coal are significant contributors to the final liquid fuel product. These projects are all under the auspices of the federal government.

Coal liquefaction, here in our Canmet laboratories and also in Alberta—the member opposite expresses some doubt. I invite him to examine some of the work which is being carried on.

Mr. Gurbin: I was just agreeing with you.

Mrs. Erola: Coal liquefaction and gasification processes are the most exciting aspects of the current and future research and development programs in this sector. In this connection I think it is appropriate for Canada to take an outward look at the situation. The government recognizes this and has provided yet another incentive. We have offered to finance a large portion of the technical risk involved in the introduction of new technologies—indeed, up to the point of commercial use. A number of serious studies of the liquefaction of coal are currently under way. In Alberta—and, I might add, on a very amicable and co-operative basis—our department has joined the department of energy and natural resources of that province to support a study being undertaken by the Nova group into the application of liquefaction technology to sub-bituminous coals.

In another development of interest, the Fording Coal Company has been examining the possibilities for building another major electrical generating station. In this study the possibility of removing liquids from coal prior to combustion of the char is being examined. I would like to acknowledge the efforts in this field over the years of the research council of Alberta. I would also like to commend the intention of the government of Alberta significantly to expand its coal research and development efforts. Studies have also been made of the conditions under which coal can be used in place of gas as a feedstock.