

the Science Council dealing with direct investments and multinational corporations.

I do not propose to list all of the difficulties or the peculiar problems facing innovation in Canada, but I should like to refer to one of the recommendations made in the report to the effect that the federal government should use its purchasing power to support innovation in Canada. At page 40 the report indicates that wherever possible the government's purchasing powers should be used increasingly as a tool for implementing national industrial strategy.

The Lamontagne committee report "Targets and Strategies for the Seventies", the second report of the committee, goes into rather more detail with respect to the contracting-out principle. I should like to tell the House that the government of Canada supports the contracting-out principle so far as research and development is concerned, and will seek to advance it wherever possible.

At the present time my ministry is involved in working out criteria with respect to the contracting-out principle. I should like to say that I have appealed, through an open letter in a publication called "Canadian Research and Development" to those in industry and elsewhere to assist me with some suggestions as to how the contracting-out principle might be made more effective. The essential question so far as the contracting-out principle is concerned is, I think, that of spin-off benefits. When research is done in industry it is more likely to generate spin-off benefits which the industry or firm concerned may be able to design or to innovate as a commercial product or process.

This open letter addressed to the research community in Canada posed four questions. One, what are the special areas in which Canada could profitably concentrate with a hope of establishing a competitive position? Two, is there a role for the industrial research association in industries other than pulp and paper? Three, how can the support of research in academic institutions be turned to industrial benefit? What is the place of full-time research institutes? Four, do you know of any work done in government laboratories which could be done more effectively and more cheaply in industry? I am happy to say there has been a response to that letter and that I have received a number of suggestions on these points from private industry.

I should also like to talk about some of the other thrusts of my new ministry this afternoon. I have indicated that we will be concerned and we will give priority attention to industrial innovation and to research and development in Canadian industry. But there are other important areas where we have taken initiatives as well. The first one has to do with the supply and demand of highly qualified manpower. Some of you may have read the Science Council's study which was published within the last six months which indicated that there may well be serious problems in the coming year from the point of view of the balance between the supply and demand, the number of PhD's graduating from Canadian universities and the number of positions available to them in their own specialty. We have initiated a program aimed at establishing, measuring the stock of highly qualified manpower in Canada. We can update this stock by adding to it university graduates and immigrants as immigration takes place, and of course

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adjusting it by deaths and emigration. Part and parcel of this particular study is working with Statistics Canada in developing a program to measure the demand side of highly qualified manpower.

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Basic research is yet another element in the whole area of science policy, and I think you will judge from my remarks this afternoon that when I spoke about science policy I was indicating elements of science policy rather than the conceptual framework sometimes used to describe science policy.

Now, I would like to say a few words about basic research. The Lamontagne committee has made a number of recommendations with respect to basic research. There are 45 recommendations in the second volume, a significant number of which touch upon the question of basic research in Canada. The Science Council also published a green report, that is to say a special background study, on the question of basic research in Canada. At the same time, I am delighted to say that the universities have recognized the special questions in this area and the Association of Universities and Colleges in Canada, under the joint chairmanship of Dr. Bonneau and Dr. Corry, is examining the whole matter of the rationalization of university research in Canada. We will be very much involved in developing criteria for federal support of basic research, and we intend to stress quality rather than quantity. The idea of centres of excellence has considerable appeal for me and my ministry. The concept of centres of excellence will be given a high priority.

I have referred to other areas where you can expect initiatives from the new ministry in the future. Let me go back to the areas of high technology for a moment. These areas affect both the industrial growth of the country and the quality of life in Canada, perhaps in its broadest sense. I refer to such areas as the computer industry, and high energy transmission. At Varennes, Quebec, there is a research enterprise, without question a world leader in high energy transmission. Nuclear power, space questions and transportation—these might all be described as national infrastructure areas of high technology. They will affect the quality of Canadian life and, I hope, they will represent important industrial opportunities in the future as well. We will be looking at the rather special questions of the north on a multi-disciplinary basis and we will be looking at the oceans as something of peculiar and major significance to Canada.

I referred in my opening remarks to another aspect of our responsibilities and I quoted from the Speech from the Throne referring to greater co-operation in international science and technology. I am delighted to report that in the few months of the ministry's existence—it is just about six months—we have been also able to organize a major mission to Japan. This mission will be 40 members strong. It will be drawn, roughly, one third from industry, one third from universities and one third from government service. I think there is a rather special reason to go to Japan. The percentage of the research and development activity in the two countries is comparable. Many people have criticized the Canadian research effort in that it is too basic research oriented, that 23 per cent of our research goes into basic research. The situation is