

mark, West Germany, Ireland, Italy, Japan, Luxembourg, the Netherlands, Norway, the United Kingdom and the United States at Brussels in September 1974), Canada agreed to a plan for stockpiling oil and reducing consumption in the event of sudden shortages. Basically, each nation was to accumulate an emergency oil reserve sufficient to maintain consumption within its borders for 90 days, without net oil imports. Canada has technically been able to meet this requirement (through existing tankage and pipeline fill) without establishing a stockpile because the Agreement applied to the country as a whole and not merely to the Atlantic Provinces, which rely on imported oil for virtually all their petroleum needs and where a prolonged interruption in supply would have a profound impact. As the necessity of shipping oil from Western Canada to the East Coast via the Panama Canal during the 1973 Arab oil embargo demonstrated, the Maritimes are extremely vulnerable to oil shortages. This is a matter of grave concern to Easterners.

The National Energy Program, tabled in the House of Commons on 28 October 1980, addressed this problem by stating that it is a matter of national priority that a natural gas pipeline be extended beyond Quebec City through New Brunswick to Nova Scotia to displace imported oil used in space heating and in certain industrial processes. It was anticipated by the National Energy Board that a natural gas pipeline extension to the Maritimes could be in place and operating by late 1983 and that it, coupled with an extension of the pipeline system in British Columbia to Vancouver Island, could displace some 44 million barrels of crude oil annually by 1990 (Canada, EMR, 1980f). But 1984 seems more likely as a completion date for the Maritimes extension because delays have been encountered in routing the pipeline.

CONCLUSION

The Committee supports the Government of Canada in proceeding immediately with the construction of a natural gas pipeline to the Maritimes. This should be an energy project of first priority in the effort to diversify our energy system and to reduce Eastern Quebec's and the Maritime Provinces' overwhelming dependence on foreign crude oil.

In the realm of alternative energy, Canada participates in RD&D through its membership in the International Energy Agency (IEA). The IEA has operated since 1974 within the framework of the Organization for Economic Co-operation and Development (OECD) and has as one of its basic aims, & co-operation among IEA Participating Countries to reduce excessive dependence on

oil through energy conservation, development of alternative energy sources and energy research and development" (IEA, 1980b). The IEA coordinates specific projects on alternative energy sources and technologies, and in 1979 Canada was directly involved in over 20 such studies, including R&D in energy conservation, coal technologies, solar power, wind power, biomass energy, nuclear fusion and hydrogen.

Considering the wealth at Canada's disposal and the professed commitment of Canadian Governments to overall energy self-sufficiency, the actual contribution of this country to the international effort has been disappointing. In 1979, Federal Government expenditures on RD&D amounted to \$163 million, a decline of 4.5% from 1978 in real terms and an increase of only 3% from 1974. In 1979, Canada was among the highest in per capita energy consumption in the IEA but (at the Federal Government level) ranked third last in the ratio of energy RD&D expenditures to total primary energy demand. Canada ranked eleventh in terms of per capita expenditures on energy RD&D, and conventional nuclear R&D accounted for over 60% of the total expenditure. Energy conservation RD&D expenditures amounted to \$12.5 million, or 7.7% of the total, and new energy source RD&D accounted for \$21.7 million, or only 13.3% of the total (IEA, 1980b, p. 14, 19, 109). In 1978, provincial government expenditures on energy-related RD&D amounted to \$99.9 million in total, or 63% of the Federal expenditure for the same year. Table 4-1 sets forth the Canadian position relative to other IEA member countries. Clearly, Canada has a long way to go to match the efforts being exerted by most other members. Even with provincial expenditures taken into account, Canada's effort, while more respectable, is not impressive.

RECOMMENDATION

In its own best interest and in the interest of furthering the objectives of the IEA, Canada should accelerate the rate of increase in its alternative energy RD&D expenditures.

7. SOCIAL CONCERNS

The lives and livelihoods of all people are unavoidably affected by energy concerns. Canadians in particular are especially affected because they use energy intensively for a number of reasons. The extremes of temperature experienced annually in this country are one factor and the broad geographical extent of our land and the fact that it is sparsely populated are others. Nevertheless, no matter where one lives, basic human requirements for food and shelter can only be met through the expenditure of energy. This is not to say,