

constitutes a major factor in risk assessment.<sup>(26)</sup> Consequently, and considering the importance of establishing criteria on health and environmental protection, the Committee hopes that bodies whose expertise and independence cannot be doubted will play an active part in the debate on assessing the radiological risks associated with any potential waste fuel disposal facility.

## The Energy Challenge

In its report entitled *Our Common Future*, the World Commission on Environment and Development argues that the human race has the capacity to ensure sustained development and to meet present energy needs without mortgaging the prospects of future generations. As far as energy is concerned, the Commission argues that the principle of sustainability has certain key elements that must be reconciled, two of these being recognition of the safety risks inherent in energy sources, and protection of the biosphere.<sup>(27,28)</sup>

Although it is not part of the Committee's mandate to launch a debate on the advantages and disadvantages of the various energy options, the Committee was pleased when, in the spring of 1987, the Department of Energy, Mines and Resources created a national advisory committee to preside over a public review of Canada's energy options into the twenty-first century. As we head into an era of "energy plurality," the "energy options" approach is one that will enable us to investigate the principles that should shape the formulation of an energy policy for Canada.<sup>(29)</sup> The Committee is also pleased to note that the House of Commons Standing Committee on Energy, Mines and Resources is conducting a study of the economics of nuclear power in Canada.

Following the lead of the World Commission on Environment and Development, the Committee believes that an intensive effort must be made to promote the development and use of renewable energies (solar, wind, tidal, etc.). Of these, hydrogen constitutes one of the most promising avenues to explore. In addition to having the highest energy density per unit weight, hydrogen burns, leaving water as its only by-product. Moreover, unlike other fuels, hydrogen can be easily produced by electrolysis.<sup>(30)</sup> Hydrogen has been the subject of many major studies,<sup>(31)</sup> and its potential use in Canada remains very attractive from the environmental standpoint. The recent report of the Advisory Group on Hydrogen Opportunities maintains that the introduction of hydrogen use would be beneficial on four environmental levels: "site-critical environments", which include confined spaces such as mines and warehouses; urban environments; continental environments (reduction in acid rain); and the world environment (slowing of the greenhouse effect).<sup>(32)</sup>

In the same vein, the Committee is interested in the current state of knowledge about nuclear fusion and its applicability. It is generally conceded that "perhaps the greatest scientific and technical challenge the human race has so far undertaken is the attempt to

<sup>(26)</sup> Advisory Committee on Nuclear Safety, Atomic Energy Control Board, *A Report on the Public Perception of Risk*, Ottawa, July 1986, 46 p.

<sup>(27)</sup> World Commission on Environment and Development (1987), p. 169.

<sup>(28)</sup> A National Task Force on Environment and Economy, established by the Canadian Council of Resource and Environment Ministers (CCREM) in October 1986, recently tabled a report recommending that Canada increase its role in the international movement to integrate environmental protection and economic development.

<sup>(29)</sup> Energy Options Advisory Committee, *The Energy Question*, Ottawa, 1987, 28 p.

<sup>(30)</sup> House of Commons, Special Committee on Alternative Energy and Oil Substitution (Thomas H. Lefebvre, Chairman), *Energy Alternatives*, Ottawa, 1981, p. 183-184.

<sup>(31)</sup> National Research Council of Canada, Energy Division, *Program Overview: Hydrogen and Energy Storage, 1979 to 1985*, Ottawa, October 1985, 106 p.

<sup>(32)</sup> Advisory Group on Hydrogen Opportunities, *National Mission for Canada*, June 1987, p. 35-38.