

nuclear power plants, a proven cost-effective option, also requires continued R&D support. In the USA, extension of the lifetime of current reactors to 60 years is becoming a competitive reality. For CANDU reactors to achieve similar lifetime targets, additional R&D by AECL and the utilities will be necessary. If R&D funding is curtailed, Canada's investment in nuclear power could be prematurely written off, leading to major expenditures for replacement power, largely from fossil-fired plants. Furthermore, international marketing of CANDU reactors would be seriously jeopardized, since CANDU customers need and expect after-sale R&D support from AECL.

High-tech jobs result from Canada's investment in nuclear science and engineering R&D. About 150 firms and a further 3,000 subcontractors across Canada benefit from each foreign CANDU sale. To ensure that CANDU reactors remain competitive, AECL is developing new CANDU designs with reduced capital and operating costs, improved efficiency and enhanced safety features. In the international market, future CANDU designs must compete against advanced reactor designs of other vendors, based on R&D done in the national laboratories of countries such as the USA, France, Germany and Japan. Canada's international competitiveness will suffer if CANDU does not have strong R&D support.

ENVIRONMENTAL CONTROL

Because of adverse global climate changes resulting from the increasing quantities of CO₂ and other greenhouse gases (GHG) in the atmosphere, an international agreement was reached at the Kyoto Climate Change Conference in 1997 to reduce GHG emissions. Canada has committed to a reduction of 6% in GHG emissions below 1990 levels by the year 2010. About 80% of Canada's electricity is generated by hydro and nuclear plants, which do not emit GHG, while only about 20% is generated by fossil fuels, which emit GHG. The lay-up of eight nuclear reactors in Ontario has resulted in increased emissions of GHG and other air pollutants from coal-fired units. If Canada is to meet its Kyoto commitments without severe economic disruption, all the laid-up reactors must be returned to service as soon as possible and operated to 2010 and beyond.

