

Climate change and sustainable energy have been quoted as the UK's main science policy issue of the next decade. Hence, major attention and new resources will continue to be focused in these areas for the foreseeable future. It is therefore most timely, and extremely opportunistic, that Deputy Minister Peter Harrison has taken on a new role to encourage research collaboration between Canada and the UK when his department, NRCan, conducts a great deal of research in these fields.

A recently published review of *Energy R&D* in the UK has identified six research areas as priorities for increased funding: CO₂ sequestration; energy efficiency; hydrogen production and storage; nuclear (including safety, waste management and decommissioning); solar photovoltaics; and wave and tidal. It also called for the creation of a dedicated national Energy R&D Centre, and the forthcoming Spending Review is expected to announce significant funding increases to help implement these recommendations. A proposal to establish more formal links between Canada and the UK, to encourage collaboration in energy R&D, has recently been suggested and progress is already being made in this regard.

Climate Change: The UK's Tyndall Centre for Climate Change Research has recently expressed an interest in working with Canada to develop a climate change research agenda which approaches adaptation and mitigation. The Centre has partners in Europe, but is looking to North America and favours Canada over the US, in light of respective positions regarding Kyoto. Interest has also been expressed regarding possible Canadian participation in: (1) the UK-Norway *Rapid* project - which aims to improve one's ability to quantify the probability and magnitude of future rapid change in climate, with a focus on the role of the Atlantic Ocean's thermohaline circulation; and (2) the CryoSat radar altimetry mission - which is dedicated to observing the polar regions and aims to study possible climate variability and trends by determining the variations in thickness of the Earth's continental ice sheets and marine sea ice cover. Finally, the Natural Environment Research Council is also looking to launch a significant initiative - the *Quest* programme (Quantifying the Earth System) - to support UK research on global warming by aiming to balance the global carbon budget.

Other priorities likely to emerge in the near future include cross-Research Council initiatives on: **the rural economy and land use** - including research on water resources, minimisation of pollution, maximising biodiversity, minimising animal disease, and land management strategies to mitigate climate change; and **environment and health** - including research into the impacts of climate change on health; endocrine disruptors; and increased antibiotic resistance etc.

Physical Sciences/Engineering

Announced in the 2000 spending review, the £98m **e-Science** programme is currently developing pilot application projects in distinct science and technology areas, most of which are highly data-intensive, e.g. particle physics, health and bioinformatics, oceanography, climatology, meteorology, geology, fluid dynamics, national social science resources, in-silico design and testing etc. The programme also supports core computing technologies including the implementation of a National e-Science grid testbed based on a network of regional centres and support for involvement in international e-science activities.

Also announced in the 2000 spending review, the £44m **basic technology** programme is supporting fundamental new technologies that will be applied to the entire scope of scientific, engineering and technology endeavour in the next 10 to 20 years. Such technologies include; nanotechnology, photonics, sensors, imaging, tissue engineering and quantum computing. In terms of **nanotechnology**, two £9m interdisciplinary research collaborations have recently been