



Workshop Summary Report

G8 Workshop on Energy Research and Innovation

11-12 May, Oxford, UK

“Improving Collaboration on Clean Energy”

Energy science and technology managers, researchers and other interested individuals from the G8 plus five developing nations (Brazil, China, India, Mexico, South Africa) discussed ways to improve collaboration on clean energy at a two-day workshop in Oxford on 11-12 May 2005. The workshop was a follow-up to the initial meeting in Washington, DC in April 2004 on implementing the Evian Action Plan that committed G8 nations and their research organisations to convene to compare and link programmes and priorities on clean energy.

This technical workshop was convened to stimulate ideas for making energy research and innovation more effective and to encourage closer working relationships.

Existing cooperation to advance clean coal technologies and carbon capture and sequestration (e.g. Carbon Sequestration Leadership Forum), hydrogen and fuel cell technologies, (e.g. International Partnership for the Hydrogen Economy), renewable energy and energy efficiency (e.g. REEEP, REN 21, MEDREP) and nuclear energy (e.g. GEN IV Global International Forum and International Thermonuclear Experimental Reactor) is established and operational. The existing partnerships include some key developing countries and complement the broad spectrum of energy technologies being progressed by the International Energy Agency (IEA).

The workshop participants from G8 countries recognised the pressing need to meet growing global energy demand whilst addressing the challenges of energy security, air pollution and climate change. Developing country participants highlighted the importance of poverty alleviation, economic development and the need for solutions amenable to their needs.

The participants found the workshop valuable, particularly with respect to the sharing of information. However, given the appetite for information exchange and the time limitations, participants were not able to produce specific action oriented proposals.

The workshop participants made the following observations and recommendations with respect to energy research and innovation, to be put forward for consideration by the Governments of the participating countries.



1. A range of international networks in developed and developing countries already exist for information sharing and collaboration. Participants did not wish to propose additional international structures.
2. There was a widely perceived need to improve current arrangements for collaboration among developed and developing countries. Examples of areas where greater co-operation would be beneficial included: fossil-based systems, carbon capture and storage, solar PV, electricity networks, energy storage, bio-energy, built environment, distributed generation, transport and systems approaches to energy. Bio-energy was cited as an area in which developing countries had experience - although still faced challenges - that developed countries did not. The Italian government alerted participants to its forthcoming International Workshop on Bio-energy in Rome on 14th June 2005.
3. There were broad similarities in outlook among all participants in the workshop, along with some differences in perspective based on different national circumstances and levels of development. Participants agreed on the importance of environmental considerations, on the need for secure and affordable energy supplies to power economic growth and development and on the need to avoid increased energy capacity leading to negative long-term legacies. Participants **recommended** that participating countries continue to work together to explore these shared objectives, analyse further the needs of developing countries and propose solutions for enhancing participation in existing networks. How best to progress this was not fully agreed, although a number of countries saw value in a further meeting.
4. A range of international networks in developed and developing countries already exist and are seen to be working well but were often not widely known beyond their participants. The workshop participants saw a need to raise awareness of the networks, their participants and their activities, preferably through the compilation and publication of a network inventory, which could facilitate better interaction.
5. The IEA's valuable networking role and its ongoing technology programme was acknowledged. Participants **recommended** that the IEA raises the visibility of its activities and reinforces links with the international business community and developing countries. This was seen as a responsibility that IEA shares with its member Governments.



6. Participants saw benefit to all nations of an increase in the shared knowledge base regarding decision tools (e.g., roadmaps, scenarios) for planning and prioritising research activities. They also saw benefit, especially in developing countries, of sharing experience in assessing and evaluating the impact of research programmes.
7. Participants acknowledged the importance and challenge of effectively advancing technology beyond the research and development phase.
 - Participants identified that the deployment of new technology required significant increase of scale or size of projects beyond that used during laboratory research of new technologies. They acknowledged that new research challenges associated with this increase in scale may arise during the deployment stage. Additionally, participants recognised that there can be problems in obtaining financing for initial deployments as the technology is frequently at a pre-commercial viability stage, where private sector support is difficult to secure.
 - Participants noted the desirability, in principle, of international demonstration projects which would help to share knowledge and accelerate deployment. However, they also acknowledged a number of practical issues that need to be addressed. These included siting projects and the capacity of countries to exploit the results. Attendees expressed a desire to see an improved framework based on existing and planned international partnership programmes for taking forward international demonstration projects, which would address these challenges. This could usefully take account of existing and already planned demonstration projects with a view to moving towards a more coherent network of further improvements in international demonstrations.
8. The workshop participants recognised the need to develop human capital able to undertake research development and demonstration into clean energy technologies in both developed and developing countries, preferably using existing networks and initiatives such as exchange and scholarship/fellowship arrangements.