

**International Energy Agency**  
**Conference on Linking Basic Science and the**  
**Development of New Energy Technologies**



**Paris, 1-2 April 2003**

The Union Internationale des Chemins de Fer (UIC), 16, rue Jean Rey

Workshop Chair: Marianne Haug  
 Director, Energy Efficiency, Technology and R&D, IEA

<b>Day 1</b>
<b>13.30 Registration</b>
<p><b><u>14.00 Welcoming Remarks</u></b></p> <ul style="list-style-type: none"> <li>• Claude Mandil, Executive Director, International Energy Agency</li> </ul> <p><b><u>14.15 Keynote Address</u></b></p> <ul style="list-style-type: none"> <li>• <b>Science and Our Energy Challenges</b> – Ray Orbach, U.S. Department of Energy (given by Lester Morss, U.S. Department of Energy)</li> </ul>
<p style="text-align: center;"><b><u>Session I</u></b></p> <p style="text-align: center;"><b>How Science Can Contribute to the Development of New Energy Technologies</b> (14.45-15.45)</p> <p style="text-align: center;"><b>Session Chair:</b> Ric Cameron, Natural Resources Canada</p> <ul style="list-style-type: none"> <li>• <b>The German Experiences and Perspectives</b> – Klaus Heinloth, University of Bonn</li> <li>• <b>The Japanese Experience</b> – Chihiro Watanabe, Tokyo Institute of Technology</li> </ul>
<b>Coffee (15:45-16:15)</b>
<p style="text-align: center;"><b><u>Session II</u></b></p> <p style="text-align: center;">How Science can Contribute to the Development of New Energy Technologies:  <b>Nanotechnology and Materials Sciences</b> (16.15-18.15)</p> <p style="text-align: center;"><b>Session Chair:</b> Carlo Rubbia, ENEA, Italy</p> <ul style="list-style-type: none"> <li>• <b>Nanotechnology and New Energy Technology</b> – Craig Fairbridge, Natural Resources Canada</li> <li>• <b>Application of Carbon Nanostructured Materials for Energy Storage and Fuel Cell</b> – Jong Won Kim, Korea Institute of Energy Research</li> <li>• <b>Hydrogen (Storage) Technology, a Challenge for Materials Science</b> – Louis Schlapbach, the Swiss Federal Laboratories for Materials Testing and Research</li> <li>• <b>Linking Material Science to New Energy Technology</b> – Yoshiro Owadano, National Institute of Advanced Industrial Science and Technology</li> </ul> <p style="text-align: center;">Rapporteur: Alicia Mignone, Italian Delegation to the OECD, CERT Vice-Chair</p>
<p><b>Conference Apéritif (18.30), Dinner (19.00)</b>          Salons Trocadero et Toit de Paris, 10th Floor, <b>Hilton Hotel</b></p>

<b>Day 2</b>
<p><b><u>9.00 Keynote Address</u></b></p> <ul style="list-style-type: none"> <li>• <b>International Energy Research Collaboration to Meet the Climate Challenge</b> – David King, Chief Scientific Advisor to the U.K. Government</li> </ul>
<p style="text-align: center;"><b><u>Session III</u></b></p> <p style="text-align: center;">How Science can Contribute to the Development of New Energy Technologies:  <b>Advanced Computing</b>            (9.30-11.00)</p> <p style="text-align: center;"><b>Session Chair:</b> David King, Chief Scientific Advisor to the U.K. Government</p> <ul style="list-style-type: none"> <li>• <b>How Advanced Technology has Enabled Access to More Energy</b> – Jens Hagen, Norsk Hydro Oil and Gas, Norway</li> <li>• <b>Exact Numerical Solutions of Turbulence and Turbulent Combustion by Parallel/Vector Supercomputers for New Energy Technologies</b> – Toshio Miyauchi, Tokyo Institute of Technology</li> <li>• <b>Advanced Computing for New Energy Technology – A Fluid Mechanical View</b> – Laszlo Fuchs, Lund Institute of Technology, Sweden</li> </ul> <p style="text-align: center;">Rapporteur: Barry Gale, U.S. Department of Energy, CERT Vice-Chair</p>
<p><b>Coffee</b> (11.00 – 11.30)</p>
<p style="text-align: center;"><b><u>Session IV</u></b></p> <p style="text-align: center;">How Science can Contribute to the Development of New Energy Technologies:  <b>Biotechnology</b>            (11.30-13.00)</p> <p style="text-align: center;"><b>Session Chair:</b> Gérard Goma, Ministère Délégué à la Recherche et aux Nouvelles Technologies, France</p> <ul style="list-style-type: none"> <li>• <b>Application of Microbial Photosynthesis to Hydrogen Production</b> – Yasuo Asada, Nihon University</li> <li>• <b>Building Partnerships for Climate Change Solutions – A Canadian Approach</b> – David Layzell, Queen’s University, Canada</li> </ul> <p style="text-align: center;">Rapporteur: Graham Campbell, Natural Resources Canada, CERT Chair</p>
<p><b>Lunch</b> (13.00-14.30)</p>

<p style="text-align: center;"><b><u>Session V</u></b> <b>The Institutional Challenge</b> (14.30-15.45)</p> <p><b>Session Chair :</b> Graham Campbell, Natural Resources Canada, Chair of the IEA Committee on Energy Research and Technology (CERT)</p> <ul style="list-style-type: none"><li>• <b>Considerations Arising from Current Conceptual Work on Energy R&amp;D in Germany</b> – Sabine Semke, Research Centre Jülich</li><li>• <b>Stimulation of New and Non-Conventional Energy Research in the Netherlands</b> – Frank Witte, Netherlands Agency for Energy and Environment</li><li>• <b>Governance of Science Systems: Institutional Reforms in Science Systems of OECD Countries</b> – Gudrun Maass, Directorate for Science, Technology and Industry, OECD</li></ul> <p>Rapporteur: David Irving, U.K. Department of Trade and Industry, CERT Delegate</p>
<p style="text-align: center;"><b><u>Rapporteurs' Reports</u></b> (15.45-16.30)</p> <ul style="list-style-type: none"><li>• <b>Session II:</b> Alicia Mignone, Italian Delegation to the OECD, CERT Vice-Chair</li><li>• <b>Session III:</b> Barry Gale, U.S. Department of Energy, CERT Vice-Chair</li><li>• <b>Session IV:</b> Graham Campbell, Natural Resources Canada, CERT Chair</li><li>• <b>Session V:</b> David Irving, U.K. Department of Trade and Industry, CERT Delegate</li></ul>
<p><b>Coffee Break</b> (16.30 – 16.45)</p>
<p style="text-align: center;"><b><u>Panel Discussion – The Way Forward</u></b> (16.45-18.00)</p> <p style="text-align: center;"><b>Chair:</b> Marianne Haug, Director, Energy Efficiency, Technology and R&amp;D, IEA</p> <p><b><u>Panellists</u></b></p> <ul style="list-style-type: none"><li>• Carlo Rubbia, ENEA, Italy</li><li>• Lester Morss, U.S. Department of Energy</li><li>• Ric Cameron, Natural Resources Canada</li><li>• Chihiro Watanabe, Tokyo Institute of Technology</li></ul>
<p><b>End of Conference</b> (18.00)</p>