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Long-Range R&D Opportunities for Renewable Energy – Foreword

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This special issue of CHIMIA contains the Proceedings of the Workshop on Long-Range Research and Development Opportunities for Renewable Energy, held in Charmey, Switzerland, from 6th through 9th September 1988.

Renewable energy sources have long been recognized for their possible role in improving energy security and replacing imported oil or fuels in scarce supply. The established R&D initiatives of IEA Member countries and international collaboration brought to maturity several technological options during the last decade or so. In other cases, further breakthroughs are expected as well as improvements and progress in existing technology. The long-term prospects of renewable energy sources, however, seem to have been gradually changing and expanding over time. In recent years, emphasis has been shifting towards environmental issues and the necessity to preserve the global ecological balance. As a consequence, new solutions and thinking would be required.

Given this evolving context, the purpose of the event was twofold, first, to provide a forum and means for discussing new concepts and directions for future R&D programmes in the area of renewable energy sources. A second aim was to gain insight into unconventional ideas and innovations that may contribute to a more extensive use of renewable energy technology.

The Workshop was hosted and organized by the Federal Government of Switzerland and the Paul Scherrer Institut with the sponsorship of the International Energy Agency (IEA), its Committee on Energy Research and Development, and the Working Party on Renewable Energy

Technologies. More than forty international experts participated and several gave outstanding contributions. Three introductory lectures on electricity generation, solar driven chemistry, materials and processes helped to frame problems and to organize subsequent brainstorming sessions. Group discussions then led to identification of subject areas of interest, R&D priorities, possibilities for international co-operation, definition of synergisms. A key element to the success of the Workshop was the selection of the participants. There was clear recognition that the development of renewable energy systems requires convergent effort, cross-cutting expertise, and creativity. Participants represented a wide variety of backgrounds ranging from R&D management, to national energy planning, utility operation, biotechnology, chemistry, materials science, equipment manufacturing.

These proceedings reflect the unique atmosphere of the event. Clearly, the opin-



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ions expressed in the individual contributed papers, summaries, and documents may not represent the views of the IEA or governments of its Member countries, but the material presented appears to provide forward-looking views and disclose new horizons. Quite a few of the proposals are challenging and worth considering in future work. The results achieved by Workshop organizers, in particular the dedication shown by Dr. Paul Kesselring, must be commended. The location selected for the event and the warm hospitality offered by the Federal Government of Switzerland added to the success of the meeting. Another advance in energy R&D and international collaboration was accomplished.

International Energy Agency

The International Energy Agency (IEA), located in Paris, France, is an autonomous body which was established in November 1974 within the framework of the Organisation for Economic Co-operation and Development (OECD) to implement an International Energy Program. It carries out a comprehensive programme of energy co-operation among twenty-one of the OECD's twenty-four Member countries. The basic aims of IEA are:*

- *co-operation among IEA Participating Countries to reduce excessive dependence on oil through energy conservation, development of alternative energy sources, and energy research and development;*
- *an information system on the international oil market as well as consultation with oil companies;*
- *co-operation with oil producing and other oil consuming countries with a view to developing a stable international energy trade as well as the rational management and use of world energy resources in the interest of all countries;*
- *a plan to prepare Participating Countries against the risk of a major disruption of oil supplies and to share available oil in the event of an emergency.*

** IEA Member countries: Australia, Austria, Belgium, Canada, Denmark, Germany (FRG), Greece, Ireland, Italy, Japan, Luxembourg, Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, Turkey, United Kingdom, United States of America.*

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