

REPORTS ON CONFERENCES

3RD MIAMI INTERNATIONAL CONFERENCE ON ALTERNATIVE ENERGY SOURCES 15-17 December 1980, Bal Harbour, Miami, U.S.A.

Organizers: Clean Energy Research Institute,
School of Engineering and Architecture
University of Miami, Coral Gables, Florida

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In the tradition of the alternative energy conferences held throughout the world, the 3rd Miami International Conference on Alternative Energy Sources held at Bal Harbour (Miami) proved once again a highly successful event. The conference organizers for the third time in succession provided a forum in the accelerating search for new, clean, and unlimited sources of energy with due concern for the rapidly depleting conventional sources throughout the world. The objective of the conference from the time of its inception has been to consider as many topics as possible, thus including Wind, Water, Ocean, Solar, Nuclear, Geothermal, Hydrogen, and Coal all at one conference. This might be one of its shortcomings, as was realized by a large number of participants whose specialization did not allow them to attend several of the sessions. However, the conference succeeded to a great extent in providing the latest information on the status and the future of various alternative energy sources. Participants came from every imaginable agency of the Government, Industry, Universities and Research Organizations, and included professionals and other individual researchers from throughout the world. There was a limited representation from Saudi Arabia, which must play an ever-increasing role in understanding the energy strategies of the future, and this was brought to my notice by other participants.

The primary emphasis during the conference was laid on the technologies associated with each energy source and thus the presentation on the economic, social, and environmental issues related to alternative energy research and application was limited. Some of the more interesting sessions of the conference were on Solar, Geothermal/Ocean, Wind, Hydro, Nuclear breeders and fusion, Synthetic Fuels from Coal, Hydrogen utilization, energy policies, and conservation. There was also concern expressed on the education of future professionals in the area of energy

design, utilization, and conservation in a session on Energy Education. In this particular session, the role of teachers as well as scientists was emphasized in the teaching of the overall relationship between Man and Energy and the basic principles of climatic design, energy utilization, and conservation to future professionals in the physical environmental design and planning disciplines. A great amount of interest was also focused on the availability and future exploitation of geothermal and synthetic fuels. However, in the grand old tradition, solar energy captured the imagination of the majority and a large number of papers, some with recurring thoughts, were presented on solar collectors, passive solar, heating and cooling, applications, and solar cells. It is my opinion that solar hardware production and industrialization will achieve great momentum in the near future, and a design sophistication similar to that of conventional systems. This should improve its usage and marketability in private buildings. The economics of investment and return in the area of solar space heating has become more acceptable in recent times. Solar cooling still remains in the laboratory and is used mainly for monitoring or demonstrative purposes.

Seasonal storage the thermal energy in aquifers takes advantage of natural occurring porous rock formations containing large quantities of water. A comprehensive research program by the U.S. Department of Energy provided interesting possibilities. Among the Economics and Policy papers, the decentralization of solar energy and electrical utilities provided an approach to planning infrastructure in the developed as well as developing countries. Decentralized solar options can play an important role in supplementing conventional energy production (which is generally centralized) and provide potentially less harmful sources of energy. This may be of great significance to the developing countries where the

infrastructure is not complete and the planning can include solar options without conflicting with the available electric or gas utilities. This may be of value in the planning and development of an energy source for cogeneration such as a turbine and hot water source using solar energy. The synergistic use, for example, of solar collectors providing shelter, electrical generation, heat generation, and night radiative cooling is of interest to designers of the built environment. I believe that the synergistic use of an alternative

energy sources is of particular interest to the professionals involved in the design of the physical environment for man. Over the whole spectrum from the development of a large region to an individual habitat, the designer may be involved in the synergistic use of an energy source in the future.

The extended abstracts were published at the time of the conference with a view to publishing the complete papers at a later date by Pergamon Press, New York.