ALTERNATIVE ENERGY SOURCES II

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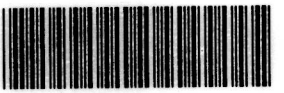
Solar Energy 1



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ALTERNATIVE ENERGY SOURCES II

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Preface

The world population is growing fast. It is now about 4.5 billion and is projected to double every 35 years. Peoples of the world are demanding more and more energy, since they aspire to raise their standard of living, and since the standard of living is directly proportional to the energy consumed. Nations consuming more energy per capita have better living standards than the others. Because of this natural desire to improve living standards, world energy consumption is increasing much faster than the world population. In fact, it is doubling every 10 to 12 years.

Today most of the world's energy demand is met by fossil fuels, mainly petroleum and natural gas. But their production is not keeping up with the demand. By now we know that world production of fossil fuels will start to decrease in the next 20 to 30 years. If we do not start introducing alternative energy sources to meet the growing demand, a proportional reduction in the living standards would result. Fortunately, there are many options before us: solar energy, in its direct and indirect forms, nuclear breeders, thermonuclear power, geothermal energy, synthetic fluid fuels, and hydrogen as an energy carrier to complement the nonfossil energy sources. However, before these energy alternatives can be utilized, in most cases it is necessary to conduct extensive research and development work.

The second Miami International Conference on Alternative Energy Sources, held December 10-13, 1979, two years after the successful first conference, provided a forum where the world's leading energy scientists, economists, and planners, from some 40 countries, met and presented their latest research findings in 42 technical sessions. The papers presented covered the technological advances for the utilization of energy alternatives as well as conservation, environment, economics, planning, strategies, and policy matters.

The papers recommended by the session chairpersons and co-chairpersons, together with the invited lecture and keynote address (published in the introduction, Vol. 1) are arranged in the nine volumes in 43 parts, by subject. The index is found at the end of Vol. 9. The reader should be advised that it was difficult to specifically classify some of the papers when there was an overlap in the subject matter. In such cases, we tried to make the best possible choice.

Alternative Energy Sources II is a valuable reference collection for engineers, architects, scientists, economists, planners, and decision makers in their efforts to find solutions to the important and growing problem of our times—energy.

T. Nejat Veziroğlu

Acknowledgments

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We also extend sincere appreciation to the invited lecturer, Robert Tanenhaus, International Energy Agency, Paris, France; to the keynote speaker, James E. Funk, University of Kentucky, Lexington, Kentucky, U.S.A.; and to the banquet speaker, the Honorable Mike McCormack, U.S. Representative from the state of Washington, U.S.A.

Special thanks are due our authors, lecturers, and panelists, who provided the substance of the conference as published in this nine-volume compendium.

And last, but not least, we extend our gratitude to the session chairpersons and co-chairpersons for organizing and executing the technical sessions and for helping in selection of the papers published. In acknowledgment, we list these session officials on the following pages.

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