Biogas Technology, Transfer and Diffusion

Edited by
M.M. EL-HALWAGI

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National Research Centre, Dokki, Cairo, Egypt

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BIOGAS TECHNOLOGY, TRANSFER AND DIFFUSION

Proceedings of the International Conference held at the National Research Centre, Cairo, Egypt

17–24 November 1984

on

Biogas Technology, Transfer and Diffusion: State of the Art

PREFACE

The International Conference on the State of the Art on Biogas Technology, Transfer and Diffusion was held in Cairo, Egypt, from 17 to 24 November 1984.

The Conference was organized by the Egyptian Academy of Scientific Research and Technology (ASRT), the Egyptian National Research Centre (NRC), the Bioenergy Systems and Technology project (BST) of the US Agency for International Development (US/AID) Office of Energy, and the National Academy of Sciences (NAS). A number of international organizations and agencies co-sponsored the Conference. More than 100 participants from 40 countries attended.

The purpose of the Conference was to assess the viability of biogas technology (BGT) and propose future courses of action for exploiting BGT prospects to the fullest extent.

The Conference emphasized a balanced coverage of technical, environmental, social, economic and organizational aspects relevant to biogas systems design, operation and diffusion. It was organized to incorporate experiences that are pertinent, for the most part, to developing countries. In addition to the wide spectrum of presentations and country programs, structured and non-structured discussions among the participants were strongly encouraged in thematic sessions at round-table discussions, and through personal contacts during poster sessions and field trips. It was clear from the enthusiastic response of most participants that the Conference, in large measure, succeeded in fulfilling its mission. Although draft papers were distributed to all participants, it was felt that the results obtained were worthy of organized and refined documentation. And this is precisely what this book intends to do.

One of the important goals of the Cairo Conference was to identify a set of guiding principles for the most promising future investment opportunities relevant to BGT in developing countries. Evidence presented

at the Conference seems to indicate that BGT can be applied with the expectation of success when, for instance:

- Its potential is extended beyond the renewable energy base by better demonstrating the system multiple outputs of prospective market value including sanitation, energy, fertilizer and animal feed supplements.
- It is used as an adjunct to agricultural-processing enterprises such as relatively large animal/animal product operations.
- Its application can affect management improvement in an existing activity with resultant economic payoffs. The required institutional and financial support for successful applications of these technologies is more often available at the commercial or cooperative enterprise scale than in support of smaller-scale operations. Developing such infrastructure at the smaller scale requires considerable government involvement and long periods of time to mature and would therefore be prohibitively difficult and expensive.

Throughout the pre- and post-Conference periods, many persons contributed much effort, help and support. I am greatly indebted to each of them. In particular, my special thanks go to those of the staff of the Pilot Plant Laboratory of the NRC who extended their unlimited assistance under the capable leadership of Dr A. Abdel Dayem and Dr M. A. Hamad; to Dr Paul Weatherly, Mrs Betsy Amin-Arsala and other members of the BST staff; to Mr Jay Davenport, Mr A. Nasmith, Mrs Maryalice Risdon and Miss F. R. Ruskin of the US National Academy of Sciences (NAS); to the NAS biogas project panel: Dr P. Goodrich from the University of Minnesota, Dr H. Capener from Cornell University, and Dr T. Prakasam from the Metropolitan Sanitary District of Greater Chicago; to Dr D. C. Stuckey from Imperial College, London, and Dr R. Mah from the University of California, Los Angeles. Finally, I should like to express my profound appreciation to Dr M. Kamel, President of the Egyptian Academy of Scientific Research and Technology and former President of the Egyptian NRC, for all his support and encouragement.

M. M. EL-HALWAGI
Editor and Conference Organizer

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