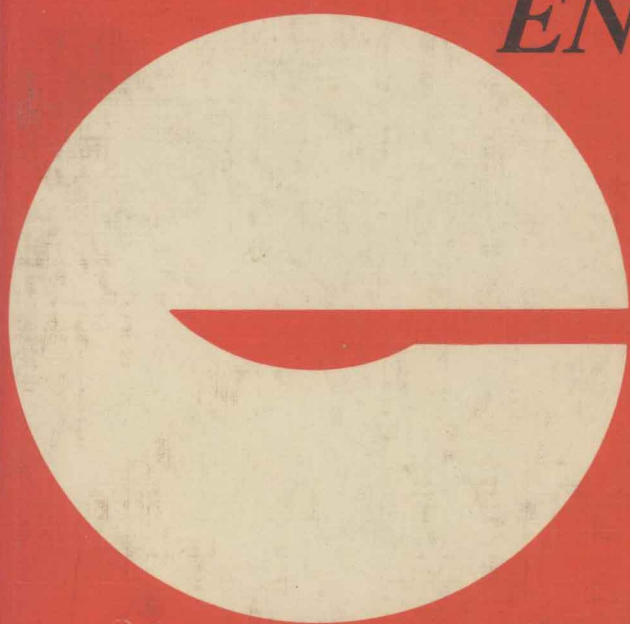


CHANGING ENERGY USE FUTURES



Edited by

**Rocco A. Fazzolare
Craig B. Smith**

Volume III

Pergamon Press

CHANGING ENERGY USE FUTURES *Volume III*

Second International Conference on
Energy Use Management
October 22-26, 1979
Los Angeles, California

Edited by

**Rocco A. Fazzolare
Craig B. Smith**

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***CHANGING
ENERGY USE
FUTURES***

**Proceedings of the
Second International Conference on
Energy Use Management**

**Los Angeles, California
October 22-2, 1979**

ORGANIZED BY

The Interdisciplinary Group for Ecology, Development and
Energy (EDEN), Los Angeles and Paris, France

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The U.S. Department of Energy

IN COOPERATION WITH

University of Arizona
The Alliance to Save Energy
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PREFACE

ICEUM-II has been planned as a result of the success of the First International Conference on Energy Use Management (ICEUM-I) held in Tucson, Arizona, in October 1977. Now in 1979; we must focus on the future— the next ten to twenty-five years, and explore changing lifestyles, economic, institutional, and environmental issues, and technological approaches related to more efficient use of energy resources.

How will current and future energy constraints affect our lives and those of our children? What are Society's options for improved energy utilization? Why and how does energy flow in the world's economic and social system? How can we provide for an equitable distribution and preservation of natural resources for our generation as well as those of the future?

These and related questions are the issues which have been chosen as the focal point of the Second International Conference on Energy Use Management. This conference has been planned to examine the issues, problems, and perspectives of energy utilization. It will be unique because it will focus on the progression and evolution of Society faced with resource limitations. Ways of minimizing undesirable socio-economic impacts will be a major point of discussion in the more than sixty conference sessions.

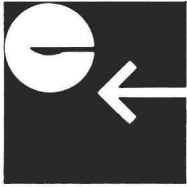
It is the goal of ICEUM-II to approach all issues in an objective fashion by bringing together a multidisciplinary group of concerned individuals from all areas of the world. To complement the action-oriented approach of ICEUM-II, the conference results will be summarized and documented in the form of pragmatic recommendations for change. These recommendations will be submitted to major decision-makers as well as the general public throughout the world.

Thus, the organizers of ICEUM-II and all individuals involved in planning this international forum are hopeful that it will serve as an impetus toward a new evolution of life in a world where energy constraints will not signify despair. Instead, we can work toward our goal with a positive spirit and envision a secure future for generations to come.

Rocco Fazzolare

Craig B. Smith

ICEUM-III



ANNOUNCING

**THE THIRD INTERNATIONAL CONFERENCE
ON ENERGY USE MANAGEMENT**

**OCTOBER 26-30, 1981
BERLIN, WEST GERMANY**

**CONFERENCE HEADQUARTERS WILL
BE THE MAGNIFICENT INTERNATIONAL
CONGRESS CENTER IN BERLIN,
WEST GERMANY**

**ICEUM WILL BE ORGANIZED BY
THE INTERDISCIPLINARY GROUP FOR
ECOLOGY, DEVELOPMENT AND
ENERGY (EDEN)**



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INTERNATIONAL CONFERENCE ON ENERGY USE MANAGEMENT

Highlights

Sunday, October 21

2 PM to 5 PM Registration

Monday, . October 22 through Friday, October 26

7:00-8:15 AM Speaker's Breakfast

8:15-9:30 AM Plenary Session

10:00-12:30 PM

2:00-5:45 PM Simultaneous Technical Sessions

6:00-6:30 PM Review of Day's Activities

Tuesday, October 23—ENERGY-LA DAY AND CITIZENS WORKSHOP

Saturday, October 27—Topical Coordinators & Conference Chairmen Forum

DAILY PLENARY SESSION THEMES

Monday, October 22—INTERNATIONAL PERSPECTIVES

Tuesday, October 23—COMMUNITY ASPECTS OF ENERGY MANAGEMENT

Wednesday, October 24—ENERGY, ECONOMICS AND INTERNATIONAL
DEVELOPMENT

Thursday, October 25—TECHNICAL INNOVATIONS

Friday, October 26—ENERGY & SOCIETY

RECEPTIONS

Sunday, October 21—5-7 PM— Registrars' Reception

Monday, October 22—6-7:30 PM— Chairmens' Reception

Thursday, October 25—8-11 PM— "Una Noche en California Antigua"

Friday, October 26—8-11 PM— "Regency Disco"

TECHNICAL PROGRAM AND ORGANIZERS

A. STRATEGIES AND ALTERNATIVES

James Dyer, Mechanical Engineering, Long Beach State University, Long Beach, California

G. Melese— d'Hospital, Senior Technical Advisor, General Atomic, San Diego, California

A.1 Effective Resource Utilization

Craig B. Smith, ANCO Engineers, Santa Monica, California

A.F. Beijdorff, Shell International Petroleum Company, Ltd., London, England

A.2 International Comparisons

Lee Schipper, Lawrence Berkeley Laboratory, University of California, Berkeley

A.3 Future Supply/Demand Options

Fritz Kalhammer, Electric Power Research Institute, Palo Alto, California

Bernhard Stoy, Rheinisch-Westfalisches Electrizitatswerk, Esses, FRG

A.4 Appropriate Paths to Development

Paul P. Craig, University of California, Davis

A. 5 Energy and Economic Growth

John Landis, Senior Vice President, Stone and Webster Engineering Corp., Boston, Massachusetts

A.6 Research and Development Priorities

R. Stephen Berry, Department of Chemistry, University of Chicago, Chicago, Illinois

Geoffrey Heal, School of Social Science, University of Sussex, Falmer, Brighton, UK

A.7 Global Strategies and Policies

Daniel Hickey, International Affairs, US Department of Energy, Washington, D.C.

Peter Kelly, International Energy Agency, Organization for Economic Cooperation and Development, Paris, France

A.8 Energy Use Pattern—2001

Frank Kreith, Solar Energy Research Institute, Golden, Colorado

A.9 Evaluation of Conservation Programs

Eric Hirst, Minnesota Energy Commission, St. Paul, Minnesota (on leave from Oak Ridge National Laboratory, Oak Ridge, Tennessee)

B. MODELS, ANALYSIS, AND ASSESSMENT

David Pilati, Brookhaven National Laboratory, Upton, Long Island, New York

B.1 Assessing the Future: Models and Scenarios

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B.2 Energy Information Systems

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B.3 Energy as a Numeraire in Economic Analysis

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Martha Gilliland, Energy Policy Studies, Inc., El Paso, Texas

B.4 Building Sector Modeling

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B.5 Industrial Sector Modeling

David Reister, Institute for Energy Analysis, Oak Ridge National Laboratory, Tennessee

B.6 Transportation Sector Modeling

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B.7 Multisectorial Models

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C. ECOLOGY AND ENVIRONMENT

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C.2 Environmental Models

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C.3 Adaptability of Society to Change

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C.4 Environmental Impact of Technology—The Next Twenty Years

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C.5 Environmental Assessment of Technology

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D.2 Community Action

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D.6 Attitudes and Behavior

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Howard Westlake, Hill and Knowlton, Los Angeles, California

D.8 Energy Impact on Society

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F.2 Community Energy Management

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F.3 Regional and Climatic Comparisons

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F.4 Utility Management

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F.5 Planning Methods and Models

Martin Wachs, School of Architecture and Urban Planning, University of California, Los Angeles

F.6 Community Waste Utilization

Raymond A. Sierka, Department of Civil Engineering, University of Arizona, Tucson

F.7 The Schoolhouse—Its Administration, Students, and Role in the Community

Shirley J. Hansen, American Association of School Administrators, Arlington, Virginia

G. BUILDINGS AND DWELLINGS

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Forrest Higgs, Department of Architecture, Louisiana State University, Baton Rouge

G.1 Environmental Systems: Heating, Cooling, and Lighting

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G.2 Commercial Buildings

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