CESTAR Meeting
April 22, 2005

Introductory Remarks
Mohamed Abdou
Agenda

11:00 AM: Vision for the Energy Center
   (Dean Dhir)

11:10 AM: Introductory Remarks
   (Mohamed Abdou)

11:20 AM: Website Status & Suggestions
   (Neil Morley)

11:30 AM: Group Discussion

12:30 PM: Action Items
Example Discussion Topics

• What kind of Energy Center do we want?
  – **INFORMATION ONLY**: Website plus seminars, publicizing UCLA faculty research in energy-related areas, etc
  – **ACTIVE**: Information plus facilitation of collaboration among faculty, initiative taking for research proposals in energy-related engineering topics, etc
  – **BROAD**: Active for Engineering Sciences related to energy, PLUS energy supply and consumption studies, plus energy policy issues, etc. (perhaps consider partnering with Business School)

• Means for **publicizing** our faculty research in energy-related areas (is the website enough? Periodic newsletter? etc.)

• Examples of **initiatives** that we can undertake to get research projects, etc. Is there any initiative that has a sense of urgency now?

• **How often do we meet?** (Once a month, a quarter, etc.)

• Will significant **administrative** effort be needed? Do we need resources to support this effort?

• Other topics, suggestions
The World, particularly in developing countries, needs a New Energy Source

- Growth in world population and growth in energy demand from increased industrialisation/affluence will lead to an Energy Gap which will be increasingly difficult to fill with fossil fuels
- Without improvements in efficiency we will need 80% more energy by 2020
- Even with efficiency improvements at the limit of technology we would still need 40% more energy

Growth in population and energy demand 1987 – 2020

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<th>1987</th>
<th>INDUSTRIALISED COUNTRIES</th>
<th>DEVELOPING COUNTRIES</th>
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Energy Centers at Other Universities

• Center for Energy Research, UCSD
  http://aries.ucsd.edu/PUBLIC/CER/
• Center for Energy and Environmental Policy Research, MIT
  http://web.mit.edu/ceepr/www/
• Center for Energy Systems Research, Tennessee Tech
  http://www.cesr.tntech.edu/
• Energy Research Center, Lehigh University
  http://www.lehigh.edu/~inenr/
• Center for Energy Studies, Louisiana State University
  http://www.enrg.lsu.edu/
• Center for Energy and Environmental Studies, Boston University
  http://www.bu.edu/cees/
• Center for Energy & Environmental Policy, University of Delaware
  http://ceep.udel.edu/
• National Energy Research Center, Jordan
  http://www.nerc.gov.jo/
• Clean Energy Research Center, University of South Florida
  http://cerc.eng.usf.edu/
• Energy Research Center, University of Kansas
  http://www.kgs.ku.edu/ERC/
Energy Centers at Other Universities

- Center for Applied Energy Research, University of Kentucky
  http://www.caer.uky.edu/
- Energy & Environmental Research Center, University of North Dakota
  http://www.undeerc.org/
- Center for Energy Systems Research, Virginia Polytechnic University
  http://filebox.vt.edu/users/vonspako/cesr/
- Energy Center of Wisconsin
  http://www.madison.com/communities/ecw/
- Oregon Renewable Energy Center, Oregon Institute of Technology
  http://www.oit.edu/orec/
- Iowa Energy Center, Iowa State University
  http://www.energy.iastate.edu/
- Schatz Energy Research Center, Humboldt State University
  http://www.humboldt.edu/~serc/
- Energy Center, Appalachian State University
  http://www.energy.appstate.edu/
- Sarkeys Energy Center, University of Oklahoma
  http://www.sec.ou.edu/
- Florida Solar Energy Center, University of Central Florida
  http://www.fsec.ucf.edu/
The Center for Energy Research (CER) is an organized research unit at UC San Diego. CER provides a venue for interdisciplinary interactions among UCSD faculty, researchers, students and the public, aimed at coordinating and promoting energy research and education.

About Us
Find out more about who we are: our mission, leadership, personnel and collaborators.

Research
Members of CER perform basic and applied research in the fields of fusion energy, combustion, and related disciplines. The center also serves as a focal point for studies of socio-economic and environmental aspects of energy production and use. Look here for a description of our primary research facilities.

Education
Research programs in CER offer many opportunities for graduate and undergraduate studies. We perform outreach activities in the local and national community, and offer on-line documentation to assist the public in learning more about energy.

Resources
This area of our web site archives our publications, presentations and administrative information for our own members as well as the general public.

News and Events
Look here for a listing of seminars, event calendars and recent news as it pertains to the CER.

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INTRODUCTION
Welcome to CEEPR, the focus at MIT for research activity in energy economics since the Center's founding in the mid-1970's, and in environmental economics since the early 1990's. CEEPR provides financial support for careful and objective research at MIT on issues related to energy and environmental policy, and publishes the results of that research to support the decision-making processes of government and industry. The Center is jointly sponsored by MIT's Sloan School of Management, Department of Economics, and the Laboratory for Energy and the Environment - itself an interdisciplinary center for scientific and engineering research on energy technology and related issues. In turn, CEEPR is one of the two MIT research centers sponsoring the Joint Program on the Science and Policy of Global Change and it is allied with a similar center at the Cambridge University in the United Kingdom as part of the Cambridge MIT Institute.

Policy research contributes primarily to the solution of real problems facing industry and government rather than to the advancement of the frontiers of an academic discipline. This research seeks to inform the policy process and, more fundamentally, to develop the underlying concepts that will help to define policy issues. Policy research may be directed to issues of public concern, such as climate change or energy security, or corporate concern, such as options valuation, or of both, such as electric utility restructuring.

The Center's distinguishing characteristic is its dedication to high-quality, empirically-grounded economic analysis of corporate and public policy issues. This research has contributed to fundamental advances in energy-related policy research since the early 1970's. The Center's research is conducted through close working relationships with MIT's faculty and Center Associates.

The Center's director is Paul L. Joskow, Elizabeth and James Killian Professor of Economics and Management. Its Executive Director is A. Denny Ellerman, senior lecturer in the Sloan School of Management and former president of the International Association for Energy Economics. Loren C. Cox is Associate Director for Program Development, former Director of CEEPR and former professional staff member, Ways and Means Committee, U.S. House of Representatives.
The Center for Energy Systems Research is Born

The former Center for Electric Power, has changed its name to reflect an expanded research focus while still performing a service to the electric power industry. When considered broadly, energy systems research can direct researchers into many new fields. For example, new composite materials could be more energy efficient to use and to produce. The new moniker easily encompasses the broad spectrum of projects that center researchers are studying from bridge design, to robotics, to construction materials, fluid flow modelling, and of course power plant efficiency.

Mission

To advance and apply scientific and engineering knowledge associated with energy systems and in particular with electric power while supporting the instructional program of Tennessee Technological University (TTU) in academic areas associated with energy systems.

History

The Center for Electric Power was established in 1985. The name of the Center has now been changed to Center for Energy Systems Research in order to reflect the broadening of activities. Over the years several funding agencies have sponsored projects. These include 20 major electric utilities, EPRI and Federal Agencies such as DOE, NASA, NSF, and ONR. In addition, several other industries have sponsored research projects.

CESR operates within the TTU System. The Center draws upon the expertise from the Engineering College faculty as well as from other faculty on campus. Participating faculty and faculty associates represent Chemical Engineering, Civil and Environmental Engineering, Electrical Engineering, Manufacturing and Industrial Technology. Support in the form of travel money and graduate student support is provided to faculty members to encourage them to submit proposals through the Center, where needed support for marketing research concepts is also provided.
Energy Research Center

The Energy Research Center is a multidisciplinary research group involving professional staff, faculty, and students. As the focal point for energy related research at Lehigh, the Center manages the University's energy research program and serves as the main energy research contact between the University, industry and government.

The Center was founded in 1973 to provide solutions to the Nation's energy problems. The faculty and staff of the Center participate in many aspects of energy research, with major emphasis on research dealing with energy conversion, power generation and environmental control. The Center's projects cover the spectrum from fundamental engineering and science issues to applied research topics.

Research within the Center is supported by contracts and grants from government and industry. The Center has particularly close ties with industry, with a significant number of joint research projects involving Lehigh faculty, staff and students and staff from private industry. The Center also operates the Energy Liaison Program, which provides consultation and problem-solving assistance to participating companies.