

ENGINEERS FORUM ON SUSTAINABILITY

“Sustainability” is Being Spoken Everywhere!

It is heartening to hear and read the words "sustainability" and "sustainable development" spoken and written increasingly by leaders in government, industry, academia, and the professions. It is also encouraging to note the positive actions taken in recent years.

As examples, between 1990 and 2002, Great Britain trimmed carbon emissions 15% while boosting its economy 36%. Toronto has decreased greenhouse gas releases from municipal facilities by 40% and is saving \$2.7 million annually through energy efficiency improvements. In industry, IBM, DuPont, British Telecom, Alcoa, Norske Canada, and Bayer, have each reduced emissions by at least 60%, collectively saving more than \$4 billion in the process. General Electric has recently committed itself to the use of "eco-imagination" in the development of its products. In the academic world, we are now engaged in the "Decade of Education for Sustainable Development."

In the engineering profession, ASCE promotes sustainable development in its Code of Ethics, and is planning a project on Practice, Education, and Research for Sustainable Infrastructure as a Presidential Initiative. AIChE has an active Institute for Sustainability, and has conducted a chemical industry sustainability survey. ASME offers an excellent education module on sustainable development. And IEEE's conferences and publications are replete with presentations and articles on sustainability and sustainable development.

This issue of the Forum Newsletter summarizes the presentations at the March 11, 2005 Forum meeting. Also included are articles with a diverse mix of sustainability developments and issues, such as arctic climate, sustainable transportation, the millennium ecosystem assessment, and the environmental impacts of emerging contaminants. The next meeting of the Forum is scheduled for Friday, September 16, 2005, in the Lecture Room at the National Academy of Engineering in Washington, D.C. The Forum will meet from 9:00 a.m. to noon, and the AAES International Activities Committee/Engineers International Roundtable will meet in the same room from 1:00 p.m. to 4:00 p.m. Detailed agendas will be e-mailed to you prior to the meetings. Best wishes for a happy and sustainable summer!--Al Grant, Forum Chair

Inside This Issue

GOVERNMENT

| | |
|---|---|
| <u>EPA P3 Awards Announced</u> | 2 |
| <u>Congressional Arctic Climate Briefing Held</u> | 3 |
| <u>NSF Division of Shared Cyberinfrastructure Introduced</u> | 3 |
| <u>Green Highway Charrette Addresses Sustainable Transportation</u> | 4 |

INTERNATIONAL

| | |
|--|---|
| <u>Science Academies Issue Joint Statement on Climate Change</u> | 4 |
| <u>UNSCSD Focuses on New Sustainability Issues for 2006/2007</u> | 5 |
| <u>Millennium Ecosystem Report Released</u> | 5 |

PROFESSIONAL ORGANIZATIONS

| | |
|--|---|
| <u>Sustainable Infrastructure: An ASCE Presidential Initiative</u> | 6 |
| <u>The ASME Professional Practice Curriculum: addressing Sustainability</u> | 7 |
| <u>Institute for Sustainability to Address Environmental Management Systems in spring 06</u> | 7 |

OTHER ORGANIZATIONS AND DEVELOPMENTS

| | |
|---|---|
| <u>U.S. Partnership for the Decade of Education for Sustainable Development</u> | 8 |
| <u>RNRF to Address Environmental Impacts of Emerging Contaminants</u> | 8 |
| <u>CEEQUAL Assessment and Award Scheme Described</u> | 9 |
| <u>Upcoming Sustainability Events</u> | 9 |

GOVERNMENT

EPA P3 Awards Announced

The P3 (People, Prosperity and the Planet) Award was launched in 2004 to respond to the challenges of the developed and developing world in moving toward sustainability. This national competition enables college students to research, develop and design scientific, technical and policy solutions to sustainability challenges. These designs will help achieve the mutual goals of economic prosperity while providing a higher quality of life and protecting the planet. Support for the competition includes more than 40 partners in the federal government, industry and scientific and professional societies.

The P3 Award Competition was held on May 16 and 17, 2005 on the National Mall in Washington, D.C. To win, a team had to successfully describe how their project related to P3 - people, prosperity and the planet - the cornerstones of sustainability. The teams also needed to prove the relevance, significance, and impact of its designs on furthering the goal of sustainability in the developed or developing world. A panel convened by the National Academy of Sciences, advisors to the nation on science, engineering and medicine, judged the competition.

The P3 Awards were presented to the following university teams:

Oberlin College - Oberlin, OH (VISUAL FEEDBACK SYSTEM FOR IMPROVING THE ENVIRONMENTAL PERFORMANCE OF BUILDINGS AND INSTITUTIONS). Researchers designed and tested a relatively low-cost system that enables easy observation and interpretation of total energy and water consumption for individual dormitory floors or an entire college campus.

Rochester Institute of Technology - Rochester, N.Y. (DEVELOPMENT OF A LOW COST, MULTIFUNCTIONAL SOLAR OVEN FOR DEVELOPING COUNTRIES IN LATIN AMERICA). The objective of this study was to develop a series of solar ovens that can be mass-produced at low cost using the capital, labor and materials that are typically available in Latin American nations.

University of North Carolina - Chapel Hill - Chapel Hill, N.C. (ANALYZING THREE SUSTAINABLE DRINKING WATER

TREATMENT TECHNOLOGIES FOR DEVELOPING NATIONS). This research project determined and compared the costs, health and economic benefits, and performance effectiveness of three drinking-water treatment technologies intended for the developing world.

University of Colorado at Denver - Denver, CO. (SUSTAINABLE ENERGY SYSTEMS DESIGN FOR A TRIBAL VILLAGE IN INDIA). The objective of this P3 project was to sustainably meet the energy needs of Trishul, a tribal village in Maharashtra, India, by using locally available materials, integrating different renewable energy systems, and designing environmentally benign, and locally appropriate, energy-storage options.

University of California - Berkeley - Berkeley, CA. (USING ULTRAVIOLET LIGHT TO DISINFECT DRINKING WATER AT THE TAP OR NEIGHBORHOOD WELL). This project is testing two designs in the field using ultraviolet tubes. The researchers are performing monthly biological tests; conducting user preference, health, and willingness to pay surveys; a collecting user feedback on the designs.

Massachusetts Institute of Technology - Cambridge, MA (ENCOURAGING TOXIC USE REDUCTION IN ACADEMIC LABORATORIES). This project involved developing a management model for research labs that allows for selection of less toxic and less polluting green chemical alternatives using the purchasing process. The system will inventory types and volumes of chemicals used by labs and link to alternative green chemical databases.

University of Michigan - Ann Arbor, MI (AMERICAN HOME). This project developed an information gathering and reporting tool that will allow households to monitor their own resource consumption patterns in real time and on-demand. Researchers focused on developing very inexpensive electronics and wireless technology to bring this metering information to a personal computer in real time.

More information on the P3 Awards and Competition can be found at the P3 website, www.epa.gov/P3

Congressional Arctic Climate Briefing Held

A Congressional briefing was held in mid-March on the Arctic Climate Impact Assessment (ACIA) and climate change impacts already observed in Alaska. The assessment is an intergovernmental report based on a four-year scientific study conducted by an international team of scientists and sponsored by eight arctic nations (Canada, Denmark, Iceland, Norway, Russia, Finland, and the United States) and six indigenous people's organizations.

The report concludes that the average winter temperature in Alaska and other arctic regions have increased by 4 to 7 degrees F (3-4 degrees C) in the past 50 years, twice the rate of the rest of the globe, and are projected to continue rising for the next century. Alaska, in particular, is being affected by climate change and experienced its warmest summer on record in 2004, characterized by its worst fire season,

unprecedented outbreaks, and significant coastal erosion. The warming has caused a decline in summer sea ice extent, allowing seasonal storms to increasingly erode portions of the Alaska coastline.

The Government Accountability Office (GAO) estimates costs of \$100-400 million to move an endangered Alaskan village, with some 184 villages seriously susceptible to flooding and erosion.

Legislation to curb carbon dioxide and other greenhouse gas emissions has been introduced in both the House and the Senate, including the Climate Stewardship Act of 2005, the Clean Power Act of 2005, and three bills to promote climate change technology deployment.

For more information, visit www.eesi.org.

NSF Division of Shared Cyberinfrastructure Introduced

At the March 11, 2005 Forum meeting, Miriam Heller, Program Director for Shared Cyberinfrastructure at the National Science Foundation (NSF), provided an overview of her recently formed Division. The Division of Shared Cyberinfrastructure is part of the NSF Directorate of Computer and Information Science and Engineering (CISE).

The CISE mission is to: 1) Enable the U.S. to remain competitive in computing, communications, and information science and engineering; 2) Promote understanding of the principles and uses of advanced computing, communications, and information systems in service to society; and 3) Contribute to universal, transparent, and affordable participation in an information-based society. CISE has four divisions; Computing and Communications Foundations, Computer and Network Systems, Information and Intelligent Systems, and Shared Cyberinfrastructure.

The role of the Division of Shared Cyberinfrastructure (SCI) is to 1) Design, develop, deploy and upgrade the resources, services, and facilities that are part of the national cyberinfrastructure for scientific and engineering research and education; and 2)

Encourage research on experimental infrastructure to ensure the advancement of cyberinfrastructure to meet the demands of tomorrow's science and engineering community.

Cyberinfrastructure can be defined as an integrated system of interconnected computation/communication/information elements that supports a wide range of applications. It consists of:

- *Computational engines (supercomputers, clusters, workstations, small processors...)
- *Mass Storage (disk drives, tapes,...)
- *Networking (including wireless, distributed, ubiquitous)
- *Digital libraries/data bases
- *Sensors/effectors
- *Software (operating systems, middleware, domain specific tools/platforms for building applications)
- *Services (education, training, consulting, user assistance)

The goal of SCI is to have a cyberinfrastructure in ten years that is:

- *Rich in resources, comprehensive in functionality, and ubiquitous;
- *Easily usable by all scientists and engineers, from students to emeriti;

- * Accessible anywhere anytime needed by authenticated users;
- * Interoperable, extendable, flexible, tailorable, and robust;
- * Funded by multiple agencies, states, campuses, and organizations;
- * Supported by and utilized by research and educational programs at all levels.

The Division of Shared Cyberinfrastructure provides funding for workshops, unsolicited research (single investigator/small groups/division specific), small grants for exploratory research, special solicited initiatives, center-based research, industrial partnerships and international collaborations, and education projects (research, curriculum development, training, capacity building).

Cyberinfrastructure for sustainability can address, for example, ecosystems biocomplexity,

-

Green Highway Charrette Addresses Sustainable Transportation

The Green Highways Charrette convened in Philadelphia on June 2, 2005, to begin the Mid-Atlantic Green Highways-Sustainable Transportation Initiative. The Initiative, sponsored by the Environmental Protection Agency, the Federal Highway Administration and the American Coal Ash Association, is exploring the creation of an award and certification program to promote sustainability in the planning, design, construction and maintenance of highways. This mid-Atlantic activity is a prototype for national private/public collaborations for sustainable transportation.

The Charrette involved about 100 representatives of federal and state environmental and transportation agencies, design and construction professionals, and materials associations. Interests in practices for sustainable highways ranged from those for teamwork among proponents, regulators and stakeholders to streamline sustainable project development, to

contaminant transport, marine microorganisms, and seismic structure response. Micro-sensors, on-board processing, and Wireless interfaces are feasible at very small scale, and can monitor phenomena "up close." Spatially and temporally dense environmental monitoring is enabled. Embedded networked sensing can reveal previously unobservable phenomena.

For more information, contact Miriam Heller, Ph.D. mheller@nsf.gov. Phone 1-703-292-7025

those needed for functional and environmentally sound uses of recycled materials. Substantial progress has been made by the states in practices for environmental stewardship as described in a recent report of the National Cooperative Highway Research Program. Charrette participants expressed strong support for the development of an awards program for green highways, but uncertainty about the potential of a voluntary certification program.

The next major event in the Green Highways Initiative will be the Mid-Atlantic Green Highways Forum at the University of Maryland, September 26-29, 2005. The Forum expects to showcase examples of sustainable highways, build the foundation for a green highways awards program, and explore the formulation of a voluntary green highways certification program. Registration information is available from www.wetlandsworkgroup.org.

INTERNATIONAL

Science Academies Issue Joint Statement on Climate Change

The leaders of the National Academies of Brazil, Canada, China, Germany, India, Italy, Japan, Russia, the United Kingdom, and the United States, have issued a Joint Statement on Global Response to Climate Change.

The statement is organized under three headings:

- 1) Climate Change is Real
- 2) Reduce the Causes of Climate Change,
- 3) Prepare for the Consequences of Climate Change

The statement calls on world leaders, including those meeting at the Gleneagles G8 Summit in July 2005, to:

*Acknowledge that the threat of climate change is clear and increasing.

*Launch an international study to explore scientifically informed targets for atmospheric greenhouse gas concentrations, and their associated emissions scenarios, that will enable nations to avoid impacts deemed unacceptable.

*Identify cost-effective steps that can be taken now to contribute to substantial and long-term reduction in net global greenhouse gas emissions. Recognize that delayed action will increase the risk of adverse environmental effects and will likely incur a greater cost.

*Work with developing nations to build a scientific and technological capacity best suited to their circumstances, enabling them to develop innovative solutions to mitigate and adapt to the adverse effects of climate change, while explicitly recognizing their legitimate development rights.

*Show leadership in developing and deploying clean energy technologies and approaches to energy efficiency, and share this knowledge with all other nations.

*Mobilize the science and technology community to enhance research and development efforts, which can better inform climate change decisions.

UNSCSD Focuses on New Sustainability Issues for 2006/2007

At its eleventh session, following the World Summit on Sustainable Development in Johannesburg, the United Nations Commission on Sustainable Development (UNSCSD) decided that its multi-year program of work beyond 2003 would be organized on the basis of seven two-year clusters. The last two years, 2004/2005, UNSCSD 13/14 focused on water, sanitation, and human settlements. Over the next two years, 2006/2007, the UNSCSD will focus its agenda on energy, industrial development, air pollution, and climate change.

In each cycle, thematic clusters of issues will be addressed in an integrated manner, taking into account economic, social and environmental dimensions of sustainable development. The Commission agreed that the implementation process should cover all these issues equally and noted that the selection of some issues for a given cycle did not diminish the importance of the commitments undertaken with respect to the issues to be considered in future cycles.

The Commission further agreed that means of implementation should be addressed in every

cycle and for every relevant issue, action and commitment.

The four focus areas for 2006/2007 are:

- *Energy for Sustainable Development
- *Industrial Development
- *Air Pollution/Atmosphere
- *Climate Change

The following linkages to other crosscutting issues are also to be addressed in every cycle. They are: Poverty eradication; Changing unsustainable patterns of consumption and production; Protecting and managing the natural resource base of economic and social development; Sustainable development in a globalizing world; Health and sustainable development; Sustainable development for Africa; Other regional initiatives; Means of implementation; Institutional framework for sustainable development; Gender equality, and Education.

For more information, visit www.un.org/esa/sustdev/

Millennium Ecosystem Report Released

Biodiversity plays a central role in underpinning sustainable development, and in protecting

society from the consequences of unexpected shocks such as water shortages, the emergence of

infectious diseases, extreme weather events and the genetic vulnerability of crops and livestock. In recent decades, economic development and technological advancement have helped to improve living conditions for many of the world's people, and to lift some of the poorest members of the human family from absolute poverty. Yet over that same period, unsustainable patterns of production and consumption have reduced biological diversity of life on our planet more than any other time in history, threatening the capacity of ecosystems to sustain the economic advances humankind has struggled to achieve.

According to the synthesis report of the recently released Millennium Ecosystem Assessment, virtually all ecosystems on the planet have been transformed by human activities. For example:

* 25 percent of commercially exploited marine fish stocks are over-harvested, leading to the

PROFESSIONAL ORGANIZATIONS

Sustainable Infrastructure: An ASCE Presidential Initiative

Infrastructure includes constructed facilities that shelter and support human activities: buildings of all types, communications, energy generation and distribution, transportation of all modes, water resources, and waste treatment and disposal. ASCE defines sustainable development as "the challenge of meeting human needs for natural resources, industrial products, energy, food, transportation, shelter, and waste management while conserving and protecting environmental quality and the natural resource base for future development."

In February 2005, ASCE convened all seven of its institutes, six of its divisions, councils and committees, and the Civil Engineering Research Foundation, in the Forum on Technical Opportunities for Sustainable Infrastructure. The Forum concluded that engineers, and other decision makers, such as planners, architects, contractors, owners, and operators of infrastructure, need sound practices to guide their decisions for functional, safe, economical, esthetic and sustainable infrastructure

The Forum recommended that ASCE, in cooperation with other professional and trade organizations and federal, state and local governmental agencies, create a program, Practice, Education and Research for Sustainable Infrastructure (PERSI). PERSI will assess

closure of many fisheries with significant socio-economic consequences;

* Changes in land cover, in particular tropical deforestation and desertification, tend to reduce local rainfall and contribute to desertification and water shortages.

* The capacity of ecosystems to mitigate the effects of extreme weather events such as the recent tsunami in the Indian Ocean has been reduced as a result of the conversion of wetlands, forests and mangroves.

The report of the Millennium project issued in January offers a number of practical proposals for reaching the internationally agreed goal of significantly reducing the rate of biodiversity loss by the year 2010. Market mechanisms, policy reforms, improved regulations and investments in the management of critical ecosystems are a critically important part of the picture and can also foster progress towards other Millennium Development Goals.

current practices and knowledge and develop an agenda for:

1. Implementation of best available practices,
2. Development of improved practices to exploit available knowledge,
3. Research to fill important gaps in knowledge, and
4. Education of current and future infrastructure professionals and technicians.

The ultimate objectives for PERSI are to:

1. Provide the practices needed for substantial renewal of America's infrastructure to respond to marketplace values and meets society's needs.
2. Embed sustainability provisions in the practices regularly used for planning, design, construction, Commissioning, operation, maintenance, renovation and removal of infrastructure.
3. Assist all educational programs in architectural, civil and construction engineering, and related Technology, in incorporating principles for sustainable infrastructure in their curricula.
4. Establish an enduring program of research to provide critically needed knowledge for Improvement of practices for sustainable infrastructure.

5. Engage the U.S. infrastructure community in international efforts for sustainability.

The PERSI report was approved by the ASCE Committee on Sustainability in early June 2005, and has been adopted by Dennis Martenson,

current President-Elect of ASCE, as his Presidential Initiative. Detailed planning for PERSI is proceeding. To download the report, follow the link www.asce.org/instfound/techcomm_cs.cfm, and scroll down to "Highlights."

The ASME Professional Practice Curriculum: addressing Sustainability

ASME is committed to helping engineering students and practicing engineers strengthen their professional and managerial skills by providing resources for them on the issues and strategies critical to their development. Within those services you find the Professional Practice Curriculum (PPC), an on-line program of study for engineering students and early-career engineers. It contains both career guidance and professional issues content aimed at providing information helpful in preparing for entry into and early advancement in the engineering profession. Its modular content is designed for individual use and for incorporation by faculty into engineering courses

There are currently 40 online modules that cover a range of topics including Legal and Business Issues, Project Management, Product Lifecycle Management, Engineering Design, Writing Winning Proposals and Sales and Marketing for Engineers. Two of the PPC modules address the concept of Sustainability: 1) [Sustainability: Intro](#) and 2) [Sustainability: Engineering Tools](#).

"Sustainability: Intro" presents student and professionals with an understanding of what sustainable development is and why it is necessary. It provides an overview of its history, emphasizing the importance of engineers and their crucial role in creating the world's infrastructure and carrying out projects that meet human needs. Several examples are

given relating sustainability and engineering that highlight the driving factors and current trends in Sustainable Engineering.

The second module, Engineering Tools, introduces several of the tools that can be used to address sustainability in engineering practices, and explains what they are. Among the tools mentioned are: Design for the Environment, Life Cycle Assessment, Eco-labeling, Eco-Efficiency, Input/Output Economics and Standardized Sustainability Metrics. The module also presents current engineering opportunities in the field of sustainability, and emerging disciplines and their underlying trends.

Both modules have been supported by ASME's [Technology & Society Sustainable Engineering Program Committee](#), where various professionals provide their expertise to present in a clear manner the importance of the role of engineering in addressing the issues for Sustainable Development.

Check it out at www.professionalpractice.asme.org. ASME is continuously seeking to expand and improve the PPC, and welcomes your ideas. If you have suggestions or would like to contribute your expertise to the development of the PPC, please contact Marian Heller at hellerm@asme.org.

Institute for Sustainability to Address Environmental Management Systems in spring 06

There is an increasing pressure from consumers and regulatory agencies on companies to develop more sustainable business practices. It appears that to meet rapidly changing market conditions, the "best" sustainable decisions are made with the acknowledgement of Health, Safety, and the Environment (HSE) as a valued component of business. To examine the role of HSE in the

sustainability of business, the Institute for Sustainability and the Sustainable Engineering Forum will hold the topical conference "**Infusing Sustainability: HSE and Business Workflows**" in Orlando Florida from April 23-27, 2006 at [Walt Disney World Dolphin Resort](#). The topical will focus on the design, development and practical implementation of

sustainability as a key component of HSE and long-range development of business workflows. Leading international experts from industry, academia, and regulatory communities will discuss: Managers and their Response to HSE Management Systems and Sustainability; Auditing and How to Make a Resulting Change in Performance; along with the role of Green Engineering, Business cases for Sustainability

and the role of university based sustainability programs. For more information or to inquire about participation, contact Rebecca Pehler, Webb Murray and Associates, Inc rpehler@kingwoodcable.net or Richard Smith, Pollution Prevention Team Leader, Texas Commission on Environmental Quality, Austin, TX, rismith@tceq.state.tx.us.

OTHER ORGANIZATIONS AND DEVELOPMENTS

U.S. Partnership for the Decade of Education for Sustainable Development

As a side event to the Commission on Sustainable Development, April 16th was the first face-to-face gathering of young people who have been working together through the leadership of the Youth Sector Team of the US Partnership for the Decade of Education for Sustainable Development. Held in New York City, this first strategic planning meeting for a national youth council represent groups focusing on a diverse range of topics such as human rights and social justice, youth empowerment, climate change, environmental racism, inner city youth mentoring, social entrepreneurship as a career choice and education for sustainable development. Diverse participation from across geographic, racial, gender, and class-based

boundaries is critical to a legitimate national youth council.

In addition to instant cross sector networking that began even before the 16th, the meeting led to the formation of a of a working group that will develop a draft statement of the purposes for a National Youth Council for Sustainable Development in the coming weeks. Sponsors of the event included the Institute for Sustainability and the US Partnership for the Decade of Education of Sustainable Development. For more information, contact darls@aiche.org or dnr6@cornell.edu.

RNRF to Address Environmental Impacts of Emerging Contaminants

Pesticides, pharmaceuticals and personal care products, industrial chemicals, and nanoparticles are being detected increasingly throughout the environment and in tissues of humans, animals, amphibians, and fish. As contaminants proliferate in our environment, we are forced to confront the reality that too little is known about their effects on the earth's inhabitants and habitats.

The Renewable Natural Resources Foundation (RNRF) will convene a national, multidisciplinary congress to examine how several representative, emerging contaminants are being assessed, monitored, and regulated. The Congress on Assessing and Mitigating Environmental Impacts of Emerging Contaminants will be conducted December 1-2, 2005 in Washington, D.C.

The overall goals of the Congress are to raise awareness (including within the professional and scientific communities) of emerging contaminants and their impacts, and to develop

findings and recommendations through interdisciplinary discussion and action. To achieve these goals, the Congress will focus on the following objectives:

1. Identify the variety and magnitude of the challenges presented by emerging contaminants.
2. Examine current regulatory control mechanisms for a variety of emerging contaminants to identify regulatory strengths and deficiencies, and to offer potential solutions.
3. Examine research and monitoring programs, and identify adjustments required to better understand, predict, and mitigate potential impacts of emerging contaminants on human, ecosystem, and wildlife health.
4. Identify the roles and responsibilities of various communities (including professional and scientific societies, public health organizations, academia, NGO's, industry, government, and the public) in building understanding of the issues; and in addressing research, monitoring and regulatory control needs.

The Congress program will include several detailed case study presentations on emerging high impact contaminants.

For more information on RNRf and the 2005 Congress, visit www.rnrf.org

CEEQUAL Assessment and Award Scheme Described

At the March 11, 2005 Forum meeting, Amar Chakar of the Civil Engineering Research Foundation outlined CEEQUAL - The Civil Engineering Environmental Quality Assessment & Awards Scheme. CEEQUAL provides an incentive to apply best environmental practices. It is designed to deliver improved environmental performance in civil engineering projects in the United Kingdom, and to assist in achieving government and industry targets for sustainable construction.

A manual is provided to all applicants that include assessment questions, scores and guidance. The 12 areas covered by over 150 CEEQUAL questions are: Project Environmental Management, Land Use, Landscape, Ecology and Biodiversity, Archeology and Cultural Heritage, Water Issues, Energy, Use of Materials, Waste Management, Transport, Nuisance to Neighbors, and Community Relations.

Weighting is built into individual scores. Each question is weighted for its relative importance within the section, and then overlaid with the

relative importance of the section within CEEQUAL. Four levels of achievement are provided, depending on exceedance of the statutory and regulatory minima: exceed by 25% - Pass, exceed by 40% - Good, exceed by 60% - Very Good, exceed by 75% - Excellent (Certificates for excellent state the percentage).

The issues related to possible application of CEEQUAL in the U.S. include: 1) It is linked to UK legislation, regulations, organizations, acronyms, and terminology, 2) It is a proprietary system administered by a non-U.S. entity, 3) There is no specific mention of sustainability goals (sustainability is viewed only as a by-product of environmental quality), and 4) Some of the questions may be moot points (issues already addressed by the U.S. regulatory framework).

For further information, contact Amar Chakar at achakar@asce.org

Upcoming Sustainability Events

VIRTUAL MEETING ON CLIMATE CHANGE

Thursday, July 7th from 10:00 am to 12:00 noon Eastern Daylight Time. Sponsored by the Sustainable Engineering Forum and EPA. Number of participants is limited; contact Earl Beaver, Chair Emeritus, Institute for Sustainability at erbeav@aol.com to register.

SUSTAINABILITY AND THE CHEMICAL ENTERPRISE: AIChE/ACS Joint Symposium on Sustainability

230th National Meeting of ACS August 28 - September 1, 2005 in Washington, DC. Sessions will be offered that focus on the key drivers for sustainable operating practices, and business methods and scientific and technological developments that facilitate sustainable operating results. Registration for the meeting is available at discounted prices July 5 to August 3 at: www.acs.org.

INTERNATIONAL CONFERENCE ON ENERGY, ENVIRONMENT AND DISASTERS (INCEED 2005)

July 24-30, 2005, Charlotte, North Carolina

Call for papers and additional information can be found at: www.iseg.giees.uncc.edu/inceed2005/.

LIQUEFIED NATURAL GAS (LNG) CONFERENCE

Discuss LNG's current environmental and safety challenges and help build a roadmap for the future at "LNG: The Environmental and Safety Agenda," Sept. 11-14, Vancouver, BC, Canada. Attendees will include a variety of professionals working in LNG, including transporters and suppliers of LNG as well as policy makers. Sponsored jointly by AIChE and CSE. Learn more and register at www.aiche.org/conferences/lng/index.htm

SUSTAINABLE ENGINEERING

AIChE Annual Meeting, October 30-November 4 Cincinnati Convention Center. Topics will include: Sustainable Hydrogen Production, Separation & Capture of CO₂ for Sequestration, Materials for Sustainability, and Sustainable Energy, Green Chemistry for Sustainability - Co-sponsored by ACS, Industrial Ecology & Life Cycle Assessment of Sustainable Designs, Strategic Sustainability Management, and Incorporation of Sustainability in Education. For additional information see: <http://www.aiche.org/annual/topical/sustainability.htm>

2005 ASME International Mechanical Engineering Congress & Exposition, November 5-11, 2005 Orlando, Florida. Workshops on Sustainability will be offered on November 8, 2005. The workshops will introduce the concepts of sustainability, metrics and measurement tools and their application. To register for the conference go to: <http://www.asmeconferences.org/Congress05>. For information on the workshops, contact erbeav@aol.com or timo.marquez@gmx.net

-

For more information on this newsletter
Please contact:
Darlene Schuster
AIChE Institute for Sustainability
3 Park Avenue
New York, NY 10016
Phone: 410-458-5870; Fax 717-854-1798
E-mail: darls@aiiche.org

For more information on the three
societies sponsoring this newsletter
Please visit their web sites:
ASCE: www.asce.org
American Society of Civil Engineers
ASEE: www.asee.org
American Society for
Engineering Education
AIChE: www.aiche.org
American Institute of Chemical Engineers