

Private Sector Perspective

Fields of Dreams: Sustainability in Industry

Michael S. Brown (michaelsbrown@earthlink.net)

The other day, I read an article about British Aerospace (BAE) investing in the development of green weapons, because "We all have a duty of care to ensure that from cradle to grave products are being used appropriately and do not do lasting harm."¹ I could not help but think—what is the world coming to? BAE's spokesperson was very clear that it is the responsibility of all companies to think about the long-term impacts of their products, even when products are designed to do significant short-term damage to people and nature. That BAE is even thinking about things such as lead-free bullets and reductions in toxic exposures for those handling munitions is cause for (some) celebration in the industrial ecology community.

Today looks a whole lot different in what people in industry are saying and doing than even a decade ago. Wal-Mart expects to be the leading purveyor of organic food and clothing. DuPont is on the leading edge of reductions in greenhouse gas emissions. The Gap has earned (perhaps grudgingly) acknowledgement that conditions in its contractor factories have improved. Yes, lots of companies are liberally sprinkling their public pronouncements with terms such as sustainability, stewardship, and corporate responsibility, the substantive content of which is still ill-defined. And industry, like all institutions in modern society, is not monolithic in thought and action. But, I think we are seeing a time which might best

be characterized as one of growing convergence around general ideas of environmental and social responsibility. Expectations are shifting such that we are not so far away from the day when most companies—whether in Asia, the Americas, Africa, or Europe—will be saying something about its commitment to the environment and social responsibility. That's a good thing.

Still, it is not easy to find examples of exemplary companies that provide true substance to sustainability. And while the Brundtland Commission definition (meet the needs of today without compromising the ability of future generations to meet their needs) remains an almost common denominator, the substance of what individual companies are doing remains so varied that one is tempted to concur with U.S. Supreme Court Justice Stewart in his concurring opinion on obscenity, "I know it when I see it."

In the absence of a widely shared view of the substance of sustainability, what I see is individual organizations doing their best to come up with their own definitions, and in doing so, converging towards some common themes. Here is what I see out there:

- Global warming is the pre-eminent environmental issue of the day and that is driving companies towards ever greater levels of efficiency

Continued on page 2

Inside....

Chris Kennedy, Helga Weisz and Lei Shi with an ISIE conference update

Brad Allenby in the President's Corner

Barbara Karn on LCA/Nanotechnology workshop

Edgar Hertwich on PSIE

Student research reports

1. BBC News, "BAE goes big on 'green' weapons," 26 October 2006, accessed at <http://news.bbc.co.uk/2/hi/technology/6081486.stm>, 29 October 2006.

Industry continued

in energy use and towards renewables. In the short-term, renewables are being addressed through utility green energy purchases, RECs (renewable energy credits), and off-sets, but there is rapidly growing interest in establishing direct production of green energy.

- Incorporating life cycle thinking in product and materials development. Whether it is vehicles, apparel, electronics, banking, or personal care products and services, the structure of R&D is evolving to incorporate considerations about the what and how of resource use, efficiency, emissions, environmental and human safety, and what happens to products and materials at all points in a life cycle. How to incorporate all these considerations is a key question.
- Bio-based materials are being viewed as potential replacements for petroleum-based materials, but with a degree of skepticism about the potential costs in fossil fuels and threats to biodiversity of bio-based materials.
- Product recovery is increasingly viewed as a potential valuable source of materials in a world of material scarcity. More and more thinking is going on about pulling materials out of products at the end of their useful life and how that relates to material and product design and production processes. At the moment, the logistics of getting relatively low value commodities back to the appropriate place in the supply chain for reuse/recycling into "new" product seems daunting.
- The social content of products and services as reflected in the supply chain is on the agenda of companies as needing at least as much attention as their environmental performance.
- Demand is growing for tools to help evaluate the environmental and social profiles of materials and products to help make better business decisions. For some companies, off the shelf commercial software is meeting the need for understanding life cycle issues. For others, simpler, less expensive tools that focus on issues

that the individual organization considers critical to their products and business are being developed.

- Some companies are starting to ask how to move sustainability forward in a larger regional and even global context rather than simply within an individual company. Recognition that global warming will not be good and that reducing greenhouse gas emissions is imperative for a ski resort is not enough if other sources of emissions aren't reduced.

I do not think these trends are universal, but I do see these concerns being reflected in the actions of an increasing number of business organizations across the globe. Sometimes it is markets that are pushing companies to think about these issues—their customers are demanding better corporate responsibility performance—while elsewhere companies have taken it upon themselves to address these issues. I expect that we will see more companies defining for themselves what sustainability, stewardship, and corporate responsibility mean and how they will act.

A decade ago, I would readily say that few companies embraced the tenets of industrial ecology and that the lack of interest was a reflection of the field's failure to speak to the industrial community. Today, I have to say that there is a wide cross-section of industries and companies that have embraced many of the big ideas generated by our field. If this is a trend, I hope that it stays.

Mike Brown is a principal in the environmental consulting firm of Brown and Wilmanns Environmental, LLC working with businesses, nonprofits, and public sector organizations. Mike previously oversaw the internal environmental program for Patagonia, the outdoor clothing company, and is currently the case studies editor for the Journal of Industrial Ecology.



What's New In ISIE?

The Latest on ISIE 2007

Christopher Kennedy

(christopher.kennedy@utoronto.ca)

Helga Weisz

Lei Shi

More than 400 abstracts have been submitted for the ISIE bi-annual conference, to be held in Toronto, 17-20 June 2007. The technical committee and other ISIE members are busy reviewing the submissions. The bulk of the abstracts are in theme, Sustainable Social Metabolism, which adds a social twist to some traditional areas of industrial ecology. We expect to have particularly strong sessions on LCA, MFA, Global/International Material Flows, Sustainable Consumption and Eco-efficiency.

Between 40 and 50 abstracts have been submitted for each of the conferences other three themes: Infrastructure for Sustainable Cities, IE for Developing Countries; and Transitions to Sustainability in a Complex World. We expect substantial sessions on Sustainable Cities/Regional Metabolism; Sustainable Buildings/Neighborhoods; and Concepts/Applications of IE in Developing Countries.

The last of the four conference themes brings transition management and complex systems theory together with the latest thinking on sustainability to point to some possible future directions for industrial ecology. Thanks to the efforts of Lauren Basson and Gerard Dijkema the Complex Systems topic has generated lots of interest. More than 20 abstracts have also been submitted on Integrated Sustainability Assessment Models, to be chaired by Claudia Binder.

Elsewhere in the technical program, Marion Chertow and others have their hands full reviewing more than 30 abstracts submitted on Industrial Symbiosis (eco-industrial parks and networks). A strong session on Supply Chain Management is also expected in the area of

Business and Management for IE. Innovations in Manufacturing Processes features strongly among the Technology and Engineering for IE abstracts. Ten abstracts have also been submitted in the area of Education and Training.

The main program features plenary presentations on the four conference themes by:

- Marina Fischer-Kowalski (Austria)
- Aromar Revi (India)
- Yi Qian (China)
- Henry Regier (Canada)

Three plenary debates are planned on:

- Business Strategy for the Environment
- The Relevance of IE for the Developing World
- Is IE consistent with Sustainability?

We are also pleased to have a presentation by Frans Berkhout from the International Human Dimensions Project - Industrial Transformation, on the opening day of the conference.

Students of course play a huge role in the conference. The ISIE's student body is planning a fun event for the first night, and will have its chapter meeting at lunch time on June 19th. Other social events included with the conference are a barbecue on the opening day; the main conference dinner; and continuing a tradition started in Stockholm, a boat cruise of the Toronto Islands. Registration will begin in the New Year. We look forward to seeing you all in Toronto!

For more information, see the conference website: <http://www.isie.ca>



(more) What's New In ISIE?

ISIE Elections Coming Soon!

Watch your e-mail for your opportunity to vote for the ISIE leadership. This year Society members will vote to fill the following seats:

- President-Elect (*Brad Allenby will fulfill his term as president at the end 2006 and Marina Fischer-Kowalski will assume the presidency*)
- Treasurer
- Secretary
- 2 Council positions
- 2 Nominating Committee positions

Since its inception, ISIE has been fortunate to have dedicated leaders and committed members. Your participation in the annual elections contributes to ensuring that our Society remains representative and strong.

New Members

Kjell Oren, Norway
Annica Carlsson, Sweden
Kathleen Fotheringham, Canada
Katsuyuki Nakano, Japan
Yasunori Kikuchi, Japan
James Winebrake, USA
Valerie Nibler, USA
Weiqiang Chen, China
Matthew Fraser, Canada
Hwong-wen Ma, Taiwan
He Xu, China
Paola Kistler, Canada
Naohiro Goto, Japan

Strong interest in the Postgraduate School of Industrial Ecology

Edgar Hertwich (edgar.hertwich@ntnu.no)

PhD students and young researchers have shown a strong interest in the Postgraduate School of Industrial Ecology (PSIE), a set of PhD-level research training courses supported by the EU and organized by a consortium of 11 European universities and ISIE. The project coordinators at the Norwegian University of Science and Technology received a total of 258 applications for individual courses from 65 young researchers. The applicants come from a wide range of countries, each gender is well represented, and the applicants in



IE Education

general seem to be very well qualified. Course participants have been selected and admission letters are currently being mailed to the applicants. It looks like the EU-funded slots will be filled for the courses in life-cycle assessment, resource and recycling systems, and sustainable consumption. There are still self-funded spaces available in all courses, and funding may be available for PhD students who are European nationals for the industrial ecology, value-chain analysis, eco-design, and sustainable production courses.

More information on PSIE is available at <http://www.indecol.ntnu.no/psie.php> or from psie@indecol.ntnu.no.

IE Dissertation

Assefa, Getachew. 2005. *On Sustainability Assessment of Technical Systems: Experience from Systems Analysis with the ORWARE and EcoEffect Tools*, Department of Industrial Ecology, School of Energy and Environment, Royal Institute of Technology, Stockholm, Sweden

Through the Looking Glass

Brad Allenby (Braden.Allenby@asu.edu)

One of the things that most professional societies struggle with, especially when they are new, is maintaining a reasonable growth rate, which requires not just replacing those who leave for whatever reason, but also building a strong enough membership base to achieve financial stability. The International Society for Industrial Ecology is not unfamiliar with those pressures. Moreover, in our case there are complicating factors. To begin with, industrial ecology is one of those fields where a number of people drift into it as part of their exploration of sustainability, technology, and industrial systems; they also tend to drift away as their interests or teaching obligations change. Moreover, the subject matter of the field is changing rapidly as well. On the industrial side, new technologies, new concerns, and new institutional and production patterns in globalizing and rapidly evolving economic systems add to the complexity and challenge of industrial ecology itself.

Additionally, the environmental discourse, which for many is an underlying motivation for the study and practice of industrial ecology, is also experiencing rapid change. Polls indicate high levels of inchoate support for "the environment," but this is proving difficult to translate into political action in the cases of many current challenges identified by developed world environmentalists, such as biodiversity shifts and global climate change. Meanwhile, the conflict between economic growth in developing countries and developed world environmental standards, which has been somewhat subsumed by the concept of sustainable development, keeps bubbling up. Some, for example, are becoming disillusioned because they feel that global sustainable development conferences are increasingly more about sustainability (environmental issues) than about development (economic growth in developing countries).

Some of these trends may be passing, and reflect temporary political conditions. But a few basic realities can be identified. Among these are the rate of change of cultural, economic, industrial, and technological institutions and systems. The shift in manufacturing away from developed countries to the growing East Asian economic powers, for example, is unlikely to be reversed (although it can be exaggerated; the United States remains the world's largest manufacturer by absolute value of product, for example). The separation of product design and management, a process that draws on sophisticated intellectual capital, from the instantiation of that capital in built products, will therefore continue, significantly complicating not only the relationship between product design, product manufacture, and product function, but also the institutional and informational flows across material and product lifecycles. Globalization and frag-

Ten years ago we could study all aspects of industrial ecology, but now many of us find ourselves focusing on more specific systems.

mented production creates concomitant increases in complexity in environmental and social impact. Industrial ecology, then, will continue becoming more complex, if only as a reflection of the evolution of the underlying systems that it studies.

An important reflection of this increasing complexity can be found in the professional evolution that some of us have experienced. Ten years ago perhaps we could study all aspects of industrial ecology, but now many of us find ourselves focusing more on specific systems. Some of us focus on material flows; some on industrial eco-parks at different scales; some on production and some on consumption; some on services and some on the technologies on which services are platformed; some on earth systems engineering and management; some on different sectors and different

Continued on page 6

President's Corner continued

categories of products; some on the industrial ecologies of different regions and economies. At the same time, we want to maintain the overall integrated approach of industrial ecology, which forms a context within which our specific activities can be linked to other areas of study to produce better understanding of both specific subsystems, and the larger systems of which they are a part. By studying consumption, for example, I can learn a lot; by linking that study with others who are looking at production technologies and material flows through product systems, that learning can multiply across a much broader system, and we can all learn about emergent behaviors of which we would otherwise be unaware.

The challenge for our Society, then, is to develop institutionally to support our members in this period of change and increasing complexity, and to do so in a way which builds and stabilizes the Society at the same time. Some of that can be done administratively – for example, by standardizing and institutionalizing the mechanisms for creating regional and subject matter chapters, a process that we're moving forward with right now. We're also trying to make it attractive for those who are working in closely related fields, such as sustainable engineering, to appreciate the value of membership in our Society, and the *Journal of Industrial Ecology*, to their work.

But more is required. To take a case study I'm involved with, consider the IEEE annual International Symposium on Electronics and the Environment, which has been held annually since 1993, and over the years has been a reliable and important source for those who work at the intersection of industrial ecology and complex product and service design. Interestingly, it has always been held in the United States, but that has led partici-

pants to several relevant observations. First, with the shift in manufacturing of electronics to East Asia, the number of North American engineers and technologists working on product design, never mind Design for Environment, has dwindled. Second, there is an increasing recognition that the most difficult and serious issues arise not from specific product design questions—which, after more than a decade of work we generally understand, even if technology change is challenging in many cases—but from broader questions of technological evolution and related social and environmental considerations. What will happen when autonomous computing systems—self-defining, self-diagnosing, self-healing, and eventually learning capable—become integrated at all scales through the home, the office, the industrial firm, the urban system? What effect will the increasing interest in virtual realities, especially among increasingly urbanized young people, have on concern for natural environments? Will environmentalism die not because it lacks data or policy solutions, but because it loses face space to Second Life or World of Warcraft? The IEEE may not know exactly how to approach this complexity, but it does know it has to, and that realization forms a large part of the planning going in to the next conference to be held in May 2007 in Orlando (attend and stir things up; they will appreciate the confusion and challenge).

Our Society must do the same. We have all, to some extent, been through the growth from environmental concern, to understanding how social and economic development dimensions are also important, to industrial ecology as a method to study an increasingly complex world. We can-

Continued on page 10

The challenge for our Society is to develop institutionally to support our members in this period of change...

Conference Reports

International LCA/LCM

Troy Hawkins (trh@andrew.cmu.edu), **Cortney Higgins**, **Anny Huang**, **Paulina Jaramillo**, **Joe Marriott**, **Vanessa Schweizer**, **Aurora Sharrard**, and **Heather Wakeley**

About 200 academic, government and business professionals gathered 4-6 October in Washington D.C. for the International LCA/LCM 2006 Conference. The conference opened with a plenary session that included talks by Ed Pinero, Peter Repinski, and David Pennington.

Ed Pinero explained his position as the White House Federal Environmental Executive with the analogy that if the federal government were a corporation he would be the Vice President of Sustainability. Pinero discussed ways that he has advocated for environmental stewardship within the federal government and has worked with other agencies to apply LCA techniques to analyze green building projects, the new farm bill, and environmentally preferable electronics purchasing.

Peter Repinski from UNEP gave an overview of the Life Cycle Inventory Initiative that UNEP has engaged in with SETAC. The first phase of the project is complete and Phase II is underway. Phase II focuses on engaging industry by providing better information to businesses through more comprehensive and user friendly LCA tools.

Finally, David Pennington from the European Commission gave an overview of the role of the Joint Research Center (JRC). The JRC is an in-house research organization on the same government level as the environmental legislation division. Pennington described how life cycle thinking is being incorporated into EU policy through measures such as the Sustainability Consumption and Production Plan which will be adopted in 2007 and the Integrated Product Policy (IPP) which advocates for life cycle thinking. IPP best practices are outlined in a handbook published by the JRC.



ISIE member Scott Matthews makes a statement at the 2006 International LCA/LCM conference.

LCA Meets Nanotechnology

Barbara Karn (karn.barbara@epa.gov)

How can industrial ecology help inform a new technology? That is the question that 25 experts tackled in a meeting in early October. Specifically, they asked how LCA could be applied to nanotechnology.

The Workshop on LCA and Nanotechnology was held 2-3 October, under the auspices of the Woodrow Wilson International Center For Scholars (Project On Emerging Nanotechnologies), the European Commission (DG Research), the U. S. Environmental Protection Agency (Office Of Research And Development), and the International Society for Industrial Ecology. Experts were equally divided between US and European representatives. Plenary talks addressed both nanotechnology and LCA. The lack of industrial ecology research in the area of nanotechnology was particularly striking.

Continued on page 8

Continued on page 8

International LCA/LCM continued

Wayne Trusty from the Athena Institute provided a keynote presentation on the development of the U.S. Life Cycle Inventory (LCI) Database and its datasets. Trusty stressed that although the U.S. LCI effort has made progress, there is still a lot of work to be done. In Trusty's experience, many industry professionals support efforts to develop accessible datasets for environmental analyses, but there has not yet been a complementary effort by government agencies. Trusty encouraged the U.S. government to step up efforts to promote the collection, validation and dissemination of reliable LCI data.

In a soul-searching keynote Scott Matthews shocked attendees with the statement "LCA is dead." Matthews went on to explain that as a community, U.S. LCA researchers have done a terrific job at developing tools, methods, and software but have not adequately developed an audience for their LCA research. Matthews' message was met with comments of both agreement and hope for increasing public interest in LCA research. During the comment period Tom Gloria of Five Winds International provided an encouraging counterpoint to Matthews' perspective by describing the rapid growth in contracts for LCA research his company has received in recent years.

Breakout sessions at this year's conference included LCI databases, inventory and interpretation methods, analytical tools, LCA in decision-making, impact methods, and international activities. Other sessions were devoted to specific LCA applications such as buildings, energy, recycling, waste management, automobiles, chemical products, and seafood.

This was the fifth U.S.-based In LCA/LCM Conference. The first one was held in Arlington, Virginia in 2000. Two of the five were web-based, virtual conferences. The next InLCA/LCM Conference is planned for 1-5 October 2007 in Portland, Oregon.

For more information visit:
<http://www.lcacenter.org/inlca.html>

<http://www.is4ie.org>

Nanotechnology continued

The workshop discussions focused on nanoproducts, those containing nanoscale materials, rather than nanotechnology, which is manufacturing products atom-by-atom. Preliminary results from the workshop indicated that it is not necessary to develop new methods of LCA specific to products containing nanomaterials. However, one particular challenge is the lack of toxicity data for nano-scale materials. The full workshop report will be published in January.

According to Lux Research, nanotechnology currently is a \$5.2 billion industry. With more than 300 consumer-products on the market and enabling technologies for all sectors of industry, nanotechnology stands to revolutionize the way we do business. Industrial ecologists need to be involved from the beginning. Taking a full life cycle approach to these technologies can help understand where in the life cycle their environmental impacts might occur and how to anticipate and minimize any adverse impacts. The Workshop on LCA and Nanotechnology will help focus the work of industrial ecologists on nanotechnology, "the enabler for the next industrial revolution."

Editor's Note: ISIE News will provide a more detailed review of this meeting when the report becomes available next year.

**Submit your
news to
ISIE News!**

kristanc10@earthlink.net

Student Research Briefs

These briefs are part of a continuing feature in ISIE News to highlight student research. The two students included in this issue presented posters at the Gordon Research Conference in August. Monica's poster took first place in the poster competition at that meeting.

Rantasalmi Eco-industrial Park: Planning an "Ecological" Eco-Industrial Park in Finland

Laura Saikku (laura.saikku@helsinki.fi)
University of Helsinki/Regional Council of Etelä-Savo

Finnish eco-industrial parks that have been studied have evolved basically of their own accord. The Finnish cases usually consist of forest industry businesses which use wood-derived wastes for fuel, sell electricity to the community, and utilize residual heat for industrial process steam generation and heat for the residential district.

It is worthwhile to utilize this background and start deliberately organizing eco-industrial parks. Rantasalmi is the first planned eco-industrial park in Finland. The first phase in 2005-2007 is being run as an EU-funded project. There is a concentration of seven mechanical wood processing companies in the area. All of the production in the area is related to construction and housing. A log-house manufacturer, Rantasalmi Oy, with its hundred employees is the largest company in the area. It has a strong network at Rantasalmi as well as with companies situated elsewhere and it is an "anchor" of the eco-industrial network. A main feature of this eco-industrial park is that both production processes and energy use have reached nearly sustainable levels. The system relies on renewable wood for material and fuel.

Besides carrying out improvements in energy and material efficiency, Rantasalmi leads the way in eco-industrial park planning in Finland. It serves as an example of creating new business opportunities for small and medium-sized enterprises

Closing the Loop of Non-returnable Beverage Packages in Mexico's Brewery Industry

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Technical University of Berlin, Institute for Machine
Tools and Factory Management, Department Assembly
Technology and Factory Management

Mexico, a country with a population of about 105 million people (2003), is the largest consumer of carbonated beverages in the world and is the 7th largest beer producer, making Mexico one of the leaders in the beverage industry. Currently non-returnable packages are mixed into the waste stream and sent to a dumpsite where they are partly recovered by "waste pickers" and sold to recycling companies. Packaging producers then buy the recycled materials, however because these materials have been mixed with other substances, only a small proportion can be used in the production of new packages.

My work analyzes the requirements to collect non-returnable packages at the point of sale, as well as their processing and sale to recycling companies, considering operational variables for the reverse scheme. The objective is to increase the quality of recycled material by avoiding their contamination and therefore, raising the quantity of recycled material used in the production of new packages.

The pilot project analyzes the city of Mérida, capital of the state of Yucatán. A collection system for non-returnable glass bottles and cans is designed applying routing algorithms. Results of these algorithms indicate the number of vehicles needed and the cost of this operation. Non-return-

Continued on page 10

Continued on page 10

Finland eco-park continued



Laura is a graduate student in Helsinki studying eco-park planning

through cooperation. It brings in a new political measure to develop rural areas like Rantasalmi in an ecologically, socially, and economically sustainable manner. Also, it could serve as an example of best practices for construction.

Besides Eco-industrial parks, I have studied the Finnish energy system. I am interested in studying eco-industrial parks

as the concept is in the core of industrial ecology, closing material loops, and using energy efficiently at regional or even larger system levels.

Mexico recycling continued



Monica is a graduate student in Berlin doing research on recycling in Mexico's breweries.

able glass bottles and cans are gathered in a recovery center and conditioned for sale to glass and aluminum recycling companies. Finally, we performed an economic analysis of the collection and processing system considering a time frame of 10 years. Our results show that the system can be profitable for the company and supports the decision by leading beverage producers to collect and recycle beverage packages. This pilot project can be used as a model to evaluate the viability of similar systems at the regional and national level for countries in which beverage packages are still disposed in unsorted municipal waste.

Why can we not plan and build urban centers so that the first impulse of nearly everyone who has some free time on a weekend would not be to hop into a car and try to get out of them? —Frank P. Zeidler, 1966

President's Corner continued

not, however, stop where we are as individual practitioners. Just as the Society must develop the capabilities to work in a world that, far from standing still, seems to be evolving at an ever increasing pace, so, too, must we as individuals. I sometimes am amazed at how little I knew fifteen years ago, as a few of us around the world leapt into this unknown and undefined field; I am more worried, however, about what marks I will give my current self when I look back from ten years hence. I appreciate the ignorance I necessarily

carry with me; I am not sure I am doing enough to dispel it. How the Society can help all of us as practitioners in that effort remains a serious and difficult question—and one where the input of each member is of continuing importance. In doing so, we will not only improve our substantive performance but help address the problem that I noted initially, and contribute to the creation of a stable basis for our Society going forward.

Special Issues, Call for Papers, New Editors, and More!

Reid Lifset (reid.lifset@yale.edu)

Special Issues

The JIE special issue on priorities for environmental product policy (v10 n3) has gotten a lot of attention from policy makers and the press. Guest edited by **Arnold Tukker** of TNO, a prominent research organization in the Netherlands, the special issue contains 11 studies that address the question: Which categories of consumption account for the largest share of environment impact? These studies are crucial to integrated product policy (IPP) and most were conducted for the European Union or with EU funding. They represent both cutting-edge and rigorous work.

In the pipeline is a special issue on the global impact of cities, edited by **Xuemei Bai**. This issue builds upon papers from the session, "Urban Transformation and Reforms for Sustainability – Local Solutions for Global Change," at the International Human Development Program (IHDP) Open Science Meeting in Bonn in October 2005. The special issue is supported in part by a grant from the Institute for Global Environmental Strategies in Kanagawa, Japan. It is scheduled to be published in April 2007.

New Website

Don't forget that the JIE has a restructured website. Please use the new URL:

<http://www.mitpressjournals.org/jie>

Although some of the technical details are still being ironed out, the new website provides improved services including:

- Extremely powerful search tools
- Easy citation downloading to EndNote and other reference managers
- Extensive electronic cross-referencing and linking
- Completed articles posted prior to print publication

Calls for Papers

Nanotechnology and Industrial Ecology

Submission deadline: 1 March 2007

Editors: **Roland Clift**, University of Surrey and **Shannon Lloyd**, Concurrent Technologies Corp.

<http://www.yale.edu/jie/cfpnano.htm>

Material Use Across World Regions

Submission deadline: 15 April 2007

Editors: **Helga Weiss**, Klagenfurt University and **Heinz Schandl**, CSIRO.

<http://www.yale.edu/jie/cfpglobalmfa.htm>

JIE Endnote Template Available

Remember that a JIE template (or "Output Style") for the reference management software EndNote is available for free download at

<http://www.endnote.com/support/enstyledetail.asp?DKEY=714200664531UAA>

(more) JIE News

New Editors

As previously announced on the ISIE website, the JIE is pleased to announce six new editors. **Manfred Lenzen** and **Scott Matthews** are co-editors for input-output analysis. Manfred is a Senior Research Fellow in the Institute for Sustainability Analysis in the School of Physics at the University of Sydney in Australia, and Scott is Associate Professor of Civil and Environmental Engineering and Engineering and Public Policy and the Research Director of the Green Design Institute at Carnegie Mellon University in Pittsburgh, Pennsylvania in the US. Both are leading researchers active in the use of input-output analysis in industrial ecology. Their editorship is supported by modest grants from the Leontieff Memorial Fund, established to recognize and further the work of Nobel laureate, Wassily Leontieff, the founder of input-output analysis.

The JIE's co-editors for substance and materials flow analysis (SFA/MFA) are stepping down in order to take on new obligations at their home institutions. **Ester van der Voet** replaces her colleague **René Kleijn**. Ester is a senior researcher, project leader and associate professor at the Institute of Environmental Studies at Leiden University in the Netherlands. **Claudia Binder** replaces **Susanne Kytzia**. Claudia is professor and head of the Division of Social and Industrial Ecology in the Department of Geography at the University of Zurich in Switzerland. The JIE is very grateful for all the effort and good work of René and Susanne and we look forward to continued excellence in this core topic in industrial ecology with Ester and Claudia.

Philippa Notten is joining **David Pennington** as co-editor for LCA. She replaces **Olivier Jolliet** who resigned his editorship to focus on building his research team as part of his new position at the University of Michigan. A member of 2.0 LCA Consultants and a chemical engineer by training, Pippa is an internationally recognized expert on the use of uncertainty assessment for improving decision-making power of life cycle assessments.

The JIE also welcomes **Tom Theis** who will serve as co-editor for book reviews with **Arnold Tukker**. Tom is a professor of civil and environmental engineering and director of the Institute for Environmental Science and Policy at the University of Illinois at Chicago in the US.

→ JIE joins OARE

JIE has joined Online Access to Research in the Environment (OARE), a recently launched global public-private consortium offering free and very low cost access environmental science journals to institutions in over 100 of the least-developed nations of Africa, Latin America, the Caribbean, and Eastern Europe. See <http://www.oaresciences.org>.

JIE Table of Contents Service

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<http://www.mitpressjournals.org/action/showAlertSettings>

Conference/Exhibition Listings

Institute of Electrical & Electronics Engineers (IEEE)
4-14 December 2006, Bridgeport, USA

Tools for delivering sustainable growth in the EU
6-7 December 2006, Brussels, Belgium

3rd National Conference and Expo on Coastal and Estuarine Habitat Restoration
9-3 December 2006 , New Orleans, USA

EcoDesign 2006 Asia Pacific
11-12 December 2006, Tokyo, Japan

The East Asian Seas Congress 2006: One Ocean, One People, One Vision
12-16 December 2006 , Haikou City, China

3rd International Conference on Environmental, Cultural, Economic and Social Sustainability
4-7 January 2007, Chennai, India

Arabian Seas International Conference on Science and Technology of Aquaculture, Fisheries and Oceanography
11-14 February 2007 , Kuwait, Kuwait

Environment: Survival and Sustainability 2007
19-24 February 2007, Nicosia, Cypress

Talking and Walking Sustainability Conference
20-23 February 2007, Auckland, New Zealand

7th Gathering of the Social Enterprise Alliance
7-10 March 2006, Atlanta, USA

The 22nd International Conference on Solid Waste Technology and Management
18-21 March 2007, Philadelphia, USA

NHA Annual Hydrogen Conference 2007
19-22 March 2007, San Antonio, USA

7th International Automobile Recycling Congress IARC
21-23 March 2007, Amsterdam, Netherlands

18TH Global Warming International Conference and EXPO
19-20 April 2007, Miami, USA

2007 Greening Rooftops for Sustainable Communities
29 April-2 May 2007, Minneapolis, USA

Bio International Convention
6-9 May 2007, Boston, USA

<http://www.is4ie.org>

2007 International Symposium on Electronics and the Environment
7-10 May 2007, Orlando, USA

World of Coal Ash
7-10 May 2007, Covington, USA

Conferences on the Human Dimensions of Global Environmental Change
24-26 May 2007, Amsterdam, Netherlands

Second Environmental Studies Summit
7-9 June 2007, Syracuse, USA

LCE2007
11-13 June 2007, Waseda University, Japan

14th CIRP Life Cycle Engineering 2007
11-13 June 2007, Tokyo, Japan

ISIE 2007 17-20 June 2007, Toronto, Canada

International Symposium on Society and Resource Management
17-21 June 2007, Park City, USA

13th International Interdisciplinary Conference on the 30 June-3 July 2007, Portland, USA

5th International Conference on Design and Manufacture for Sustainable Development
10-11 July 2007, Loughborough, UK

Bioenergy 2007: International Bioenergy Conference and Exhibition
3-6 September 2007, Jyvaskyla, Finland

World Congress on Recovery of Materials and Energy for Resource Efficiency
3-5 September 2007, Davos, Switzerland

12th World Lakes Conference
28 October-2 November 2007, Jaipur (Rajasthan), India

The 20th World Energy Congress - Rome 2007
11-15 November 2007, Rome, Italy

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Assistant or Associate Professor, Systems and Engineering Ecology, University of Georgia, USA

AAAS Science and Technology Policy Fellowships, various Federal agencies, USA

Program Assistant, China Environment Forum, Woodrow Wilson International Center for Scholars, USA

Junior-level Faculty Position, Technological Innovation & Entrepreneurship Group, MIT Sloan School of Management, USA

Assistant, Associate or Full Professor of Sustainable Global Enterprise, Cornell University, USA

Assistant, Associate or Full Professor of Industrial Ecology, Rochester Institute of Technology, USA

Director Center for Corporate Leadership and Social Responsibility, University of Washington, USA

Abstract Classifier, Social Science Research Network, USA

International Society for Industrial Ecology

The International Society of Industrial Ecology (ISIE) promotes industrial ecology as a way of finding innovative solutions to complicated environmental problems and facilitates communication among scientists, engineers, policy makers, managers and others who are interested in how environmental concerns and economic activities can be better integrated.

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Send submissions to the appropriate editor.

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