Industrial Symbiosis Eco-Industrial Development Section Update
February 8, 2011- March 31, 2011
International Society for Industrial Ecology
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This update service is provided by the Industrial Symbiosis Eco–Industrial Development Section of the International Society for Industrial Ecology. We welcome your announcements, call for papers and announcements of academic publications, corrections, insights and feedback. Our sympathies and prayers go out to our colleagues and friends in Japan.

Registration is limited for the ISIE Conference in Berkeley, California June 7-10, 2011. Check out the is4ie web site for more conference information. There is a conference track devoted to industrial symbiosis and eco-industrial development. Arrangements are underway to have a IS Research Symposium June 5th (dinner) and 6th (all day symposium) to the main conference. This year research teams from across the globe are working in groups to attempt to define the parameters and criteria for industrial symbiosis and eco industrial development. We hope to provide more information on this forthcoming event in this column, on our web site and via email as it becomes available.

Sustainable Urban Systems Section Hosts Its First Workshop in June 2011:
The Sustainable Urban Systems (SUS) section is planning a one-day workshop on June 6, 2011 at Berkeley, CA, just prior to the International ISIE conference (http://isie2011.berkeley.edu/).

Calling all Eco-industrial designers! The World Design Impact Prize is a biennial designation created to recognise empower and stimulate socially responsible design projects and initiatives around the world. Presented by the International Council of Societies of Industrial Design (Icsid), the World Design Impact Prize will honor exceptional industrial design driven projects that are making a positive impact on our social, economic, cultural and/or environmental quality of life. By drawing from the expertise of Icsid’s network, this competition creates an exciting opportunity for members and the general public to play an active role in recognizing and honoring projects and partners that create a better world through socially responsible design. Entries will be accepted through October 5th, 2011.
Read more: The World Design Impact Prize | Design Competitions

I read in a blog from the Netherlands “However, the minister of Industrial Symbiosis, Axel Greenwald, has decided today to come with some new regulations that will lead to a more transparent and visible industrial metabolism behind our society and to make that part of education as well. In his words: ‘the government sees it as her responsibility that all citizens know exactly where their goods and services come from in order to make proper judgments for their behaviour as customers’
What is exciting is that they have a minister of Industrial Symbiosis.
Conferences, workshops, courses and other events

- Minnesota Reuse Summit May 3-5. For more info and/or to register for the event, go to: mn2011reusesummit.eventbrite.com. Please note that space is limited, so reserve your spot as soon as possible. If you have any questions, please contact MaryEllen at maryellen@reusealliance.org.
- ReuseConex2012, the 2nd National Reuse Conference & Expo, which will take place in Portland, Oregon on October 2012. Be sure to bookmark the conference website to keep up on the latest info: ReuseConex.org!
- Essential Steps to a New or Revitalized Eco Industrial Park, June 6, 2011 Berkeley, California by Eco-Industrial Solutions.
- 17th Annual International Sustainable Development Research Conference Moving Toward a Sustainable Future: Opportunities and Challenges. The track (#5) on bridging organizations will feature industrial symbiosis and eco-industrial development presentations and is organized by Abhishek Agarwal. May 8-10, 2011 Columbia University, New York, NY, USA Website: isdr17.ei.columbia.edu; Email: ISDRC17@ei.columbia.edu
- June 3, 2011 Essential steps to Successful Eco Industrial Zones/Districts Calgary, Alberta Best Western Village Park. By Eco Industrial Solutions.
- CoGen Canada Workshops June 1-2, 2011 in Calgary, Alberta includes sessions on Alberta’s Industrial Heartland and Scoping Co Gen Anchored Eco Industrial Park, the later talk given by Eco Industrial Solutions.
- Sustainable Development in the Minerals Industry, June 14-17 Aachen, Germany.
- 2011 Asia Pacific Roundtable for Sustainable Consumption and Production, Nov. 9-11, 2011 Yogyakarta, Indonesia (www.aprscp.net)
- 2011 Asia Pacific Industrial Engineering and Management Science Conference, Oct , 2011 Beijing, China (www.apiems.net)
- 2011 APBITM-IEEE Summer International Conference, Jul 10-12, DLUT, Dalian, China

Publications and presentations of interest:

- **Implementing Industrial Ecology: Methodological Tools and Reflections for Constructing a Sustainable Development**
- GreenBiz Group, a media company focused on sustainable business, has released its "State of Green Business Report," which finds that large corporations are becoming increasingly environmentally minded, and are making strides in increasing recycling and using recycled materials.
“Eco-Industrial parks for pollution abatement and remediation” by M.N.V. Prasad University of Hyderabad, India presented as part of World Congress on BioTechnology in Hyderabad India this March.

Guidelines on Sustainable Industrial Zone/Estate Development by UNIDO and Royal Dutch Government for Ethiopia under Ecologically Sustainable Industrial Development project.

Greenbiz.com published a recent blog on Walmart’s impressive efforts to implement a zero waste program, entitled “A Behind the Scenes Look at Walmart’s Zero Waste Program” (March 21, 2011). Its definitely worth checking out.

A Study on Comprehensive Evaluation of Eco-industrial Parks” was recently listed on China Papers, outstanding doctoral dissertations web site.


In mid February India celebrated Green Productivity week in which attention was turned to sustainability and eco-efficiency as tools for combating climate change under a new paradigm of Green Productivity.

Concordia University in Canada publishes a list of current research projects which includes Raymond Paquin & Judith Walls “Industrial Symbiosis Development and Impacts.”


Eco Products International Fair held in India last February to promote green consumerism.

“Opportunities for Industrial Symbiosis BetweenCHP and Waste Treatment Facilities : (Case Study of Fortum and Ragn Sells, Brista)” by Yevgeniya Arushanyan, KHT 2011. This study is considering the possibilities of industrial symbiosis between combined heat and power plant (Fortum) and a waste sorting facility (Ragn Sells). The paper shows possible scenarios of utilization heat fromCHP for the various processes within the waste treatment facility. The work includes the overview of previous research done in this area as well as theoretical analysis and estimation of the probable economic and environmental effects from the application of industrial symbiosis.

The Quarterly Magazine of the Society of Energy Engineers and Managers India March 2008 includes three articles of interest:Eco-Efficiency - How Eco-Industrial Parks Practice it? Brahmanand Mohanty 07; Buildings - Going beyond being ‘eco-friendly’ Chandrasekhar Hariharan 10; Energy managers - Key players in India’s green growth Brahmanand Mohanty


“Research on the Stability of Eco-Industry Chains” by Jingfu Guo & Wenzi Cui


• Industrial Symbiosis for the development of Biofuel Production Author: Michael Martin; Linköpings Universitet ; Linköpings Universitet a very interesting dissertation which can be downloaded as a pdf. A nice piece of work.

• MATERIALS SELECTION IN A ECO-INDUSTRIAL PARK FOR AN ENVIRONMENTALLY-CONSCIOUS DESIGN by B. De Benedetti1, S. Rollino1, G. L. Baldo2, F. Rutter3 1Politecnico di Torino, Italy, debene@polito.it 2 Life Cycle Engineering, Torino, Italy, baldo@studiolce.it 3Granta Design Ltd, Cambridge, UK, fiona.rutter@grantadesign.com found on the web dealing with a proposed park in rural north west Italy.

• To Optimize Poyang Lake Eco-industrial Cluster through System Innovation, Kunming, China November 26-November 28 ISBN: 978-0-7695-4279-9 by Zhang Xiaoqing and Zhong Jinwen

• Growth equilibrium analysis of enterprise ecological benefits based on eco-industrial chain by Bing-chun Liu Zhen-zhen Hao Sch. of Manage., Tianjin Univ., Tianjin, China in Industrial Engineering and Engineering Management (IE&EM), 2010 IEEE 17Th International Conference on Issue Date: 29-31 Oct. 2010 On page(s): 1538 - 1541

• Industrial symbiosis in photovoltaic manufacturing by Joshua Pearce Queens University Toronto Canada presented at IEEE conference in January 2011.

• Innovative Use potential of industrial residues from the steel, paper and pulp industries – a preliminary study by Gary Watkins, Mikko Makela and Olli Dahl in Progress in Industrial Ecology, An International Journal 2010 - Vol. 7, No.3 pp. 185 - 204

• Formation Mechanism of Green Strategic Alliances and Its Cooperative System for Coal-Mining Eco-Industrial Parks Based on Synthetic Decision Support System by Li Yang and Malin Song. JOURNAL OF COMPUTERS, VOL. 4, NO.11, NOVEMBER 2009 pg 1109-1116.

• The dynamics of industrial symbiosis: A proposal for a conceptual framework based upon a comprehensive literature review by Frank Boons\textsuperscript{a}, Wouter Spekkink\textsuperscript{a} and Yannis Mouzakitis\textsuperscript{b} in the Journal of Cleaner Production 13 January 2011.

• Eco Industrial Solutions, Ltd. has recently put together a listing of their publications available for downloading on their website under news and media.
Geneva, Switzerland blog page entitled Industrial Ecology and Me provides personal insights into the ongoing work our colleagues in Geneva.

Sustainable Development in the Process Industries: Cases and Impact J. Harmsen (Editor), Joseph B. Powell (Editor) March 2010 Wiley

Regional Workshop on Eco-Industrial Clusters: Policies and Challenges Venue: ADBI, Tokyo 8 December 2009 - 11 December 2009 included papers by the following authors Venkatachalam Anbumozhi on Presentation - Industrial Clusters and Eco-Restructuring of Asia and Kyeongae Choe on City Clustered economic development, Section member Anthony Chiu on Eco Industrial Clusters; Section member Tsuyoshi Fujita on Eco Town Development in Japan, Geng Yong on Creating a low carbon eco-industrial cluster in China, Anthony Chiu on An Assessment of Initiatives in the Philippenes among others.


Eco-Efficiency of High-Tech Industrial Parks : Concept and Evaluation Indicator System by Wang Jinde Guo Zheng Shanghai Academy of Quality Management

Assessing the Potential of Industrial Symbiosis to Mitigate Greenhouse Gas Emissions by Shi Han Dept. of Public and Social Administration, City University of Hong Kong, Hong Kong, hanshi@cityu.edu.hk.

Eco-Efficiency Assessment for Eco-Industrial Park based on Energy Analysis by Hua Shang and Jiabo Li in Modelling Risk Management in Sustainable Construction Computational Risk 2011.

Sarah Murray wrote a piece entitled “Alliances that Lead to Creative Industrial Symbiosis” in the Monday November 29 2010 edition of the Financial Times which lauded the work of NISP and International Synergies. Bravo to our colleagues at NISP!

Eco-Industrial Development and Industrial Symbiosis in Practice:
Eco-Industrial Projects:
COUNTRY: USA

Pennsylvania: Keystone Industrial Port Complex, a 2400 acre former US Steel property in Bucks County, PA. “The site, which has significant rail and deep water port capability, has been transformed into an eco-industrial park, with tenants involved in renewable energy manufacturing, metals and coal recycling, soil reuse, and electrical power production from landfill gas. KIPC tenants recently signed a Sustainability Partnership with the EPA to enhance environmental opportunities for current and future businesses at the site. 2010 Pennsylvania Governor's Award for Environmental Excellence.”
Rhode Island: Tiverton’s Eco Industrial Park will be the site of a 2400KW wind farm according to the US Department of Energy.

North Carolina: Reventure Park in Charlotte has been recognized for integrating wildlife into the park development. “The project has been recognized as a Wildlife and Industry Together (W.A.I.T.) site by the North Carolina Wildlife Federation for the wildlife stewardship exhibited at their facility. The certification by the Federation recognizes ReVenture Park’s work toward creating and enhancing valuable wildlife habitat on its grounds”. Forsite Development, Inc. is the winner of the 2010 Business Innovation Award for its ReVenture Eco-industrial park along the Cawtaba River in Charlotte, North Carolina. The project proposes to redevelop a 667 acre superfund site as an eco industrial park anchored by a 20 MW bio-mass power and thermal energy plant. FCR Recycling will also locate in the park and invest $30 million in a trash to fuel suitable for a 30 MW plant. Neighbors have expressed concerns with the project and its impact on a proposed 11 mile greenway along the Cawtaba River as well as its Superfund designation from past uses on the property. Efforts to rezone land to specifically allow eco industrial park uses for the Reventure Park were postponed until late Spring, 2011. In other news from the tarheel state, Carolina Solar Farms of Raleigh, NC announced that it will locate a solar farm in the Camden, NC Eco Industrial Park this spring.

Minnesota: Voters will be considering a ballot question to support the development of a proposed Silver By Eco Industrial Park in early May. In other eco industrial news from Minnesota, the Itasca Eco-Industrial Park in Grand Rapids, MN received a $1.75 Million Economic Development Administration grant to assist with the parks development. Mr. Nolan made another presentation to the local economic development authority in International Falls, Minnesota on Eco Industrial Development.

Georgia: Northern Forsyth County has received a proposal to rezone 115 acres to accommodate an eco industrial park which will focus on renewable energy and academic research park uses.

Massachusetts: The Devens Eco Industrial Park will be visited as part of a mobile workshop held in conjunction with the American Planning Association’s national conference in Boston April 9-12, 2011. The City of Boston’s Newmarket Eco Industrial Zone web site lists an array of programs the city has mustered to enhance innovation and competitiveness for the district.

Illinois: Chicago where a coal gasification plant is proposed for the southeast side of town wrapped in an 140 acre eco-industrial park package has caused a media stir in the windy city. State legislation supporting the park through the long term purchase of gas from the plant passed the legislature and needs gubernatorial signature in order to proceed. The company proposing the plant is known as Eco Industrial Development.

Texas: Brownsville was the site of a proposed President’s Council on Sustainable Development eco industrial park that was tried and failed in the late 1990s. Efforts continue to revitalize the idea and to incorporate a regional waste to energy project into
the mix, according to an editorial by Kenneth Benton in My Harlingen News dated January 7, 2011.

Nevada: The Reno City Council has approved the sale of a strip of land on East Commercial Row for $1.1 million to Waste Management Nevada for expansion, including a single-stream recycling center. According to RGJ.Com “The sale would be the start of an eco-industrial park approved by the city on land inherited from Union Pacific Railroad as part of the ReTrac railroad trench project.”

Oregon: Wilsonville, Oregon was the site of a February 1, 2011 event which featured ISIE member Tracy Cassavant (EIS), Andrew Mangan (USBCSD) and Bart Gregory of Mithun discussing Eco-Efficiency and the Portland Clackamas County Business Alliance. The metro government has just published a new Eco-efficient employment toolkit which is available on line at www.oregonmetro.gov/communityinvestment

Washington: Port Townsend is reportedly eyeing developing an Eco-Industrial Park according to the local paper. Seattle is also moving toward incorporating Eco Industrial districts into its future growth plans. “The Metropolitan King County Council last month adopted a proposal that calls for a partnership with the City of Seattle (which resides in King County) to create Eco-Industrial Districts in the city and throughout the county. The county and city continue to support the creation of eco-industrial districts.” Seattle’s industrial core is a unique and extremely valuable resource and critical to the long term economic health of the region. The City Council’s interest in (eco-industrial districts) has a dual purpose, both to strengthen our industrial core and to improve the environmental quality of the Duwamish river corridor.”

Puerto Rico: Wanan International announced plans to construct waste to energy facilities as part of eco-industrial parks in collaboration with municipalities. A write up on the conceptual design of the Wanan Eco industrial park can be found at their web site.

New York: New York City the old Brooklyn Navy Yards remains in discussion as the site for a 300 acre proposed eco-industrial park run by BNYDC according to Marin Schloss on her NY Going Green Examiner web site. Previous efforts to launch an eco industrial park in the South Bronx, the Oak Point Eco Industrial Park launched by Sustainable South Bronx and Green Worker Cooperatives has yet to get off the ground.

Vermont: Putney Vermont is the proposed location for Transition Putney – a Green Village Eco Park which proposes to incorporate aspects of eco-industrial development into their project which formed in late 2010. They intend to focus on agricultural value added components, a business incubator and integrate green building design into the redevelopment of the Basketville village area of Putney.

European Union industrial policy must focus on energy and resource efficiency. March 2011. The European Parliament today adopted the Lange report on "Industrial
policy for the globalised era” responding to the EU 2020 flagship initiative issued in October 2010 by the Commission. After the vote, Green industrial spokesperson Reinhard Bütikofer said: "The Parliament has today supported a set of actions to promote the competitiveness of European industry. I welcome the recognition that, to face the crisis and globalisation challenges, energy and resource efficiency must be the basis for European industrial renewal. "Sustainability has to be recognised as a central aspect of the so-called 'competitiveness proofing' and 'fitness checks' to be implemented by the Commission as part of its better regulation initiatives." The report rightfully calls for closed-loop industrial systems, greater resource productivity, durability and re-use, recycling and remanufacturing. “The report also calls for instruments to foster the development and growth of eco-innovative SMEs, as well as the development of eco-industrial parks.”

European Union Mediterranean Innovation Projects
Eco Mark Project: ECOMARK wants to develop a GREEN MARKETING, specifically for Eco Industrial Parks (EIP) and generally for Industrial Areas (IA), with the aim of favouring the competitiveness of SMEs and the a more sustainable community development. The Green Marketing principle is based on sustainable (Green) products, processes and services, and is oriented towards the external communication. The five regions involved in the ECOMARK project are: Emilia Romagna (IT) ; Côte d'Azur (FR) ; Comunitat Valenciana (ES) ; Western Greece – Thessaloniki (GR); and Slovenia (SI) .

COUNTRY: Thailand
COUNTRY: Malaysia
COUNTRY: United Kingdom

COUNTRY: Canada
Section member Eco Industrial Solutions announces “we have created standardized, low-cost deliverable packages for our municipal clients. Each deliverable package has been scoped to reflect municipal budget and purchasing constraints, and is designed to provide you with results quickly and cost-effectively. The packages are:

Municipal Policy Eco-Industrial AuditTM
Stakeholder Visioning & Engagement Workshop
Industrial / Business Speed Dating Workshop
Eco-Industrial ScoreCardTM - Land Use & Development
Eco-Industrial ScoreCardTM - Energy & GHG Emissions
Eco-Industrial ScoreCardTM - Water & Wastewater

More information can be found at http://ecoindustrial.ca/MunicipalServices.html or feel free to email me directly at tracy@ecoindustrial.ca.”

Olds, Alberta announced that the Olds Institute for Community and Regional Development has funded an Eco Industrial Park plan for the community. In Vancouver the McBride Eco Industrial Park will be the site of ecoTech Energy Groups Combined Heat and Power Energy generating station. Plans include greenhouses, aquaculture and cold storage all fueled by the CHP plant. The Edmonton Journal announced that Fort
McMurray plans to develop an eco-industrial park. The Tilbury Eco Park in North Vancouver Regional District is producing a quarterly newsletter, the Tilbury Eco Log. Its first publication was this quarter.

COUNTRY: Switzerland
Sierre/Crans-Montana region has been working to apply industrial ecology in the region since the turn of the century. This work includes a 2008 effort to address eco-industrial development and industrial symbiosis opportunities in the region. The Sierre web site contains more information on this project.

Country: Norway

COUNTRY: Brazil
A high level delegation of Brazilian officials visited the UK in March to find out more about NISP and its programs.

COUNTRY: China
Tianjin – an Italian design firm is working on plans for a second eco city in the province. Dongguang Eco Industrial Park web site provides information on this emerging eco-industrial park in Guangdong province of China. In January of this year, there are 13 Industrial Park in Jiangxi Province's eco-industrial park construction plan review, on top of the 63 approved since 2008. The firm PHNIX held an eco-industrial park design competition with the goal to involve its staff in finding energy saving solutions for two new industrial parks under construction in Nansha and Panyu. PHNIX states it is “going to make the two new industrial parks models of resource-sharing and economic recycling.”

COUNTRY: Japan
Kitakyushu City's approach to a low carbon society green frontier presentation was found on line and provides another example of Japanese Eco-Towns and Cities.

COUNTRY: Germany

COUNTRY: Hungary and Slovakia
Reprowis, a joint program between Hungary and Slovakia (Reducing Production Waste by Industrial Symbiosis) REPROWIS - The general aim of the project is the reduction of production waste and the promotion of the innovative techniques of waste management. The specific objectives of the project are the compilation, writing of studies in connection how much the idea of cleaner production and industrial ecology are known and spread among SMEs in some of the border counties of Slovakia and Hungary; the creation of plans for innovative industrial symbiotic actions (waste management) for the reduction of production waste among SMEs; and the organization of seminars and conferences in the topic of industrial symbiosis and industrial ecology. The main target groups of the project
are the representatives of small and medium size companies located in the bordering regions of Slovakia and Hungary, and the decision makers of both countries.

COUNTRY:  India

Professional Changes: