

## Industrial Symbiosis Eco-Industrial Development Section Update



**July- August, 2012**

Peter Lowitt, FAICP

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. Thanks to Reid Lifset and the above image's creator, Matthew Garrett at Yale F&ES, for use of the image.

The Section board consists of Marian Chertow (Professor, Yale U., USA), Weslynn Ashton (Board Secretary and Assistant Professor, Illinois Inst. Technology, USA), Ankit Aggarwal (Student, TU Munich, Germany, Student Member), Professor Shi Han (Board Treasurer and Assistant Professor, City U of Hong Kong, China), Rachel Lombardi (Research fellow U. Birmingham, UK and practitioner with NISP), and Peter Lowitt (FAICP, practitioner, Devens Enterprise Commission USA and board Chair). The board serves for a two year period from 2011-2013.

- Communications: this committee will work on establishing protocols for communicating with members and be responsible for sending out updates. The group should examine the various existing communications platforms and determine how best to communicate with members of the section and non-members. An active Linked In discussion group has been one result of this initiative. ( [http://www.linkedin.com/groups?about=&gid=1845383&trk=anet\\_ug\\_grppro](http://www.linkedin.com/groups?about=&gid=1845383&trk=anet_ug_grppro) ). We encourage you to join up and add to the discussion. The active exchange of ideas on this site ranges from discussions of orange by-products as a source for biofuel to discussions of parallels' between the financial and climate crisis (see below for a summary of this update's topics).
- Programming and events: this committee will work on defining (co-)sponsorship of events, assist in planning events; determining ways goals and deliverables for the section, examining ways to fund initiatives such as PhD student exchanges or graduate consortium events. The 9<sup>th</sup> Annual Industrial Symbiosis Research Symposium (ISRS) will take place on October 19, 2012, in Tianjin Economic-Technological Development Area (TEDA), about 150 km southeast of Beijing. Registration and hotel information can be found on the IS4IE website. ISRS will be followed by the 3<sup>rd</sup> ISIE Asia-Pacific Meeting to be held in Tsinghua University, Beijing on October 20-21, 2012, which will focus on theme "Asia-Pacific Toward Eco-Industrial Development". <http://www.cern.org.cn/>. Professors Shi Han and Weslynn Ashton have been appointed by the chair to review presentations submitted under the EID/IS track for the 2013 Ulsan ISIE Conference next June. Call for abstracts for the June, 2013 7<sup>th</sup> ISIE conference in Ulsan are available September 18th 2012 at (<http://is4ie.org/isieulsan> )
- Database and information sharing: this committee will work on determining the best means of sharing information about projects and synergies, utilizing existing platforms or suggesting new ones, and working together to organize this initiative. We need volunteers for this committee.

**Linked In Questions and IS Case Studies:** Much thanks to Ines Costa for starting this group. The following are some of the recent postings. Be sure and go to our Linked-in site for more in depth information on these and other items. This effort assists the Section in implementing our communications plan.

There is an interesting on-going discussion on how to explain Industrial Symbiosis to a lay person, your elevator speech on IS. Check it out.

An on-going discussion of IS Facilitation Business Models for Waste Companies continues as well. Also concerns that global waste will double without serious implementation of circular economy goals.

Turning dairy waste into eleven (11) new product applications is also being discussed.

Discussion of ReVenture Park in Charlotte, North Carolina as an excellent example of a Brownfield reuse project.

Also a discussion on Industrial Symbiosis in Australia and one on IS and the rebound effect.

A really cool article on the use of crab shells to clean mine water discovered by a high school student in Kokomo, Indiana - <http://www.blueeconomy.eu/m/articles/view/Crab-Shells-to-Clean-Mine-Water> was posted by Tyler Barnes.

## Conferences, workshops, courses and other events

- 2013 International Society for Industrial Ecology Society Conference, 2013, **Ulsan**, Korea
- Leo Baas invites colleagues to the 18<sup>th</sup> Greening of Industry Network (GIN) conference in **Linköping**, Sweden, during 21-24 October, 2012. The website of the GIN 2012 conference is developed. A reference group with representatives of industry, government and university, chaired by the County Governor, is currently working on the organization of on-site workshops as integrated part of the GIN2012 conference. All information about the GIN2012 conference, can be found on [www.gin2012.se](http://www.gin2012.se)
- **Manila**: Professor Anthony SF Chiu invites colleagues to the 9th (Elsevier) International Conference on International Society for Business Innovation and Technology Management (ISBITM) in Microtel Mall of Asia, Manila, Philippines during October 7-9, 2012. A reference group with representatives of industry, government and academe, chaired by the President of the ISBITM, is currently working with its Asia Pacific Regional chapter (APBITMS). Conference focuses on green business model and sustainable technology management, and is co-organized by Derby University, De La Salle University, and other partners. All information about the ISBITM Manila conference can be found on [www.apbitms.org](http://www.apbitms.org).
- Metro **Vancouver** invites government, businesses and citizens to attend the 2nd Annual Zero Waste Conference 2012 - Rethinking Waste Management... the Design Difference, taking place Friday, September 14th from 9:00 to 3:30 at the Vancouver Convention Centre (East).
- Sustainable Innovation 2012 Call for Papers  
[Resource Efficiency, Innovation and Lifestyles](#)  
Part of the 'Towards Sustainable Product Design' series of conferences  
17th International Conference  
October 2012  
Germany  
Conference website: [Sustainable Innovation 2012](#)
- [Electronics Goes Green 2012+ Joint International Conference and Exhibition](#). September 9 – 12, 2012
- [ReuseConex 2012 \(10/18-20/12\)](#): *ReuseConex 2012*, the 2nd National Reuse Conference & Expo, w

Oregon. The Reuse Alliance Portland Chapter's Steering Committee will be spearheading the event (as a speaker, exhibit, sponsor, or attendee), please contact us at [reuseconex@reusealliance.org](mailto:reuseconex@reusealliance.org).

- US Eco Industrial Development networking event September 12-14, 2012 to be held at Devens Conference Center. Development projects are invited to attend a gathering to establish a network in order to share information. Papers and proposals for presentations can be found at [www.devensec.com/sustain.html](http://www.devensec.com/sustain.html)
- The Swiss Federal Office of the Environment will conduct a workshop on Eco-Innovation Parks (including **Bern**).
- 10th Int'l Society for Business Innovation & Tech Mgt Conf. Jan 20-22, 2013, **Taipei**, Taiwan (Elsevier)
- Please join us for Connecticut's final Summit to help us launch our new materials economy. October 10-11, 2012, CT Registration is now open for the Sustainable Materials Management Summit.

## **Publications and presentations of interest:**

- A selection of previously published articles on industrial symbiosis has been compiled at <http://jie.yale.edu/symbiosis>. Included in the compilation is a comprehensive list of all articles and columns published in the Journal of Industrial Ecology on industrial symbiosis. The August issue of the Journal of Industrial Ecology has been published, its theme is **Greening Growing Giants**.
- ‘Working with the Neighbours’: Application of industrial ecology across port areas and its potential to leverage commercial advantage and support sustainable development” paper presented by Kate Royston at recent conferences in Antwerp and Hull, 2012.
- Call for papers: You are cordially invited to submit or recommend an article to the Open Journal of Ecology (OJE, ISSN: 2162-1993), a fast track peer-reviewed and open access academic journal, which is published by Scientific Research Publishing (SCIRP). OJE covers many aspects in Ecology, and more detailed information can be found at: [www.scirp.org/journal/oje](http://www.scirp.org/journal/oje).
- An article on regulatory barriers to IS posed to a Swedish-Finnish exchange: <http://ec.europa.eu/environment/integration/research/newsalert/pdf/291na2.pdf>  
The EU recently relaxed regulatory barriers for cross border IS exchanges.

## **Eco-Industrial Development and Industrial Symbiosis in Practice:**

### **Eco-Industrial Projects:**

#### **COUNTRY: USA**

**Massachusetts:** The Devens Eco-Efficiency Center and Devens Enterprise Commission will host a gathering of US Eco Industrial Parks and Projects September 12-14, 2012.

Interested parties should contact Peter Lowitt at [peterlowittatdevensec.com](mailto:peterlowittatdevensec.com). Additionally a 3 MW solar photovoltaic facility is under construction.

**North Carolina:** Charlotte – ReVenture Park announced that Renewed World Energies (RWE) will begin production of “the world’s first commercially-viable, closed system, automated microalgae production facility” at ReVenture Park. Also in North Carolina there is a great article on Piedmont BioFuels and how they got off the ground. [Www.biofuels.coop](http://www.biofuels.coop)

**Illinois:** Chicago – Carol Smith writes on [YourOliveBranch.org](http://YourOliveBranch.org) “In many former industrially important cities in the United States and around the world, solid old buildings stand empty — useless. But one green innovator is proving that such structures could instead be off-the-grid, zero emission urban food oases. John Edel is transforming a former industrial facility in Chicago’s historic Union Stockyard into a unique centre that is part vertical farm, part food-business incubator, part research and education space. The Plant, as it is known, is a complex food production system for raising tilapia, growing mushrooms and nurturing aquaponic vegetable gardens. It is also a hub for small artisanal food businesses like a bakery, a kombucha (fermented tea) maker and eventually a beer brewery. On top of that, this unique set-up will soon be running solely on green energy thanks to an anaerobic digester that will transform organic food waste — both from within The Plant and businesses in the surrounding community — into biogas that will power a turbine generator.” Section member Weslynn Ashton is working on part of this project.

**Minnesota:** Silver Bay The Lake County News Chronicle reports “Victus Farm has joined AmericInn on the property, which the city now calls its eco-industrial business park. The new farm, a collaboration with the University of Minnesota Duluth, will provide jobs as well as local food and energy for the region.” Congratulations to our friends at Silver Bay for opening your “new Bio-Fuel and Food Greenhouse Facility in their Eco-Industrial Business Park.”

#### **COUNTRY: Thailand**

**COUNTRY: Malaysia** the Malaysia Press announced that “the Perak Eco Industrial Hub (Pecoh) in Lumut to be developed by KYM Holdings Bhd with the state and other parties could attract some \$5 bln in investment from an international steel mill, among others.”

**COUNTRY: United Kingdom** “University of York scientists are attempting to turn one man's trash into another man's treasure. The scientists at the university are leading a major network supported by the European Union that will explore methods of utilizing supply chain waste from food industries and using it as an alternative carbon source through sustainable chemical technologies. York's Green Chemistry Centre of Excellence recently won a European Co-operation in Science and Technology grant to run the network. The center launched the Biowaste Industrial Symbiosis Network at a Technology Fair in Santa Clara, California.” Strategic Sourceror on Friday, July 27, 2012. Another article promotes the use of citrus peels to create new products “Citrus peel, coffee waste, pea pods and cashew shells could provide an untapped carbon source

for producing commercially viable, higher value chemicals and materials, according to scientists at the University of York.”

International Synergies executive Peter Laybourn wrote about his experiences at the RIO + 20 conference on the following blog. <http://www.international-synergies.com/index.php/media-centre/blog>

**Northern Ireland:** Excellent results are being reported for firms participating in the industrial symbiosis program delivered by Invest Northern Ireland. “World leading premium drinks manufacturer Diageo is among the companies that Invest Northern Irelands Industrial Symbiosis Service has helped to implement a zero waste to landfill policy” a news release reports.

**COUNTRY: Azerbaijan** Baku. Discussion of evolving Eco-Industrial Park coming out of discussions during a summer school Green Corps project.

**COUNTRY: Australia** The University of Technology has proposed a Queensland City become the first “major integrated residential and industrial eco-precinct.

The study was conducted on behalf of Thiess Waste Management, owners and operators of the Swanbank Renewable Energy and Waste Management facility located near the town.”

**COUNTRY: China.** In July China and Singapore signed a cooperation agreement to continue collaboration around the Suzhou Industrial Park and TEDA Tianjin. There was an interesting article on TEDA in the Genetic and Biotechnology Engineering News online entitled TEDA: Managing the Shift to a Greener Economy. It was also reported that “Dalian has got the nod from the central government to build a country-level advertising creative industry pilot park at the Eco-Technological Innovation City in Dalian, according to the Dalian Municipal Administration for Industry and Commerce.” An eco-industrial park will be built in Zhenjiang city, Jiangsu province, as a strategic cooperation project between the Chinese and Swiss governments, officials at the second Sino-Swiss Economic Forum said on July 10.

**COUNTRY: Sweden**

**COUNTRY: Nepal**

**COUNTRY: Philippines**

**COUNTRY: Vietnam**

**COUNTRY: Canada** Alberta’s Industrial Heartland has placed their Eco-Industrial Development Master Plan on the web at

[http://www.industrialheartland.com/index.php?option=com\\_content&view=article&id=110:eco-industrial-plan&catid=46&Itemid=185](http://www.industrialheartland.com/index.php?option=com_content&view=article&id=110:eco-industrial-plan&catid=46&Itemid=185). Project Description:

The Alberta's Industrial Heartland (AIH) Association was created in May 1999 to develop and promote the Heartland region as a global leader in processing, manufacturing, and eco-industrial development. Its member partners include the counties of Strathcona, Sturgeon and Lamont and the City of Fort Saskatchewan with support from industries belonging to Northeast Capital Industrial Association. The Alberta's Industrial Heartland is the world's first chemical process region to embrace an eco-industrial logo. AIH encompasses over 20 plants within a 300 sq. km. area. Virtually all are interconnected via exchange of products or co-products, energy use or shared transportation infrastructure. By 2002, four natural gas- based cogeneration complexes provided well over 70% of AIH industry electricity needs. It is through collaboration with

regional public, private and government stakeholders that the Alberta's Industrial Heartland Association supports activities that improve the management of operations and minimize their impacts on the community including: air monitoring, industrial risks, community awareness, land use planning; emergency response and utility and transportation infrastructure. Alberta's Industrial Heartland Association strives to find a balanced approach that maintains the current quality of life for residents with the economic prosperity that new development offers all taxpayers.

Project Goals:

Specific projects include: A Strategy for Eco-Industrial Development in Alberta's Industrial Heartland (2000). The Strategy set out what is currently in place within the AIH region and what is currently being produced with recommendations of viable synergies that may occur within the region. This study has been instrumental as an investment attraction tool for companies wishing to expand and/or locate in the region. Complementary Area Structure Plans. The development of the four partner municipalities Area Structure Plans provided an opportunity to; interface of industrial land and adjacent uses, develop policies to direct transition areas, buffers and overall setbacks, ensure conservation of valued environmental areas such as the river valley, develop policies assuring conservation of prime agricultural land and to pursue transportation and utility infrastructure recommendations. Regional Pipeline and Corridor Setback Study (in process). The Edmonton Capital region is recognized as the Energy Hub of Alberta. One of the most important linkages in this area is the underground pipeline network within the AIH region. To ensure future energy sector pipelines are sited in the most efficient manner and safest location the AIHA has undertaken a regional pipeline corridor and setback study.

**Taiga Nova Eco Industrial Park** in Fort MacMurray, Alberta held its grand opening along with a BBQ and tour of the project this past July, 2012.

**Dundalk**, Ontario – the blockade of Southgate Township's Eco Industrial Park which had lasted from April 4-July 18, 2012 was brought to an end by court order. Southgate PIRG members were concerned with the perceived lack of citizen participation in the siting process for park tenants and questioned the allowed use under zoning of park tenant- Lystek.

James Scott's capstone project in Integrated Land Planning highlights the Strathroy Eco-Industrial Park and can be viewed on line.

**COUNTRY: Belgium**

**COUNTRY: Switzerland**

**COUNTRY: Norway**

**COUNTRY: Denmark.**

**COUNTRY: Tunisia** GTI reports that "Aside from developing the cleaner production center in Tunisia, we are piloting one EIP and industrial symbiosis project in Bizerte (and soon in another industrial estate to be defined)."

**COUNTRY: Netherlands**

**COUNTRY: Finland**

**Country: Bahamas**

**COUNTRY: Brazil:** Brazil becomes the second country in the world to establish a National Industrial Symbiosis Program. The announcement was made during the RIO + 20 conference in late June.

**COUNTRY: Japan**

**COUNTRY: Korea**

**COUNTRY: Nigeria** the Pollutec, 25th International Exhibition of Industrial and Environment Equipment, Technology and Services, will this year focus on structuring a sustainable eco-friendly industrial city.

**COUNTRY: Germany**

**COUNTRY: Hungary and Slovakia**

**COUNTRY: India** The Resource Optimization Institute (ROI) has just published their annual report. It can be found at [www.roi-online.org](http://www.roi-online.org) “The 2011 report highlights ROI’s previous projects and summaries those we have done in the last year” writes associate director Rakesh Yadav.

**COUNTRY: Trinidad and Tobago** The Eco Industrial Development Company of Tobago has a video on their Eco Industrial Park online.

**COUNTRY: Romania**

**COUNTRY: Singapore.**

**COUNTRY: South Africa.**

**COUNTRY: Turkey**

## **Professional Changes and Opportunities:**