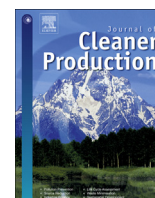


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Call for papers

Call for papers: Towards post fossil carbon societies: regenerative and preventative eco-industrial development[☆]

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1. Call for papers for a Special Volume of the Journal of Cleaner Production

Rapid economic growth and urbanization are creating serious social/environmental consequences from problems of urban excess, overfishing, energy/resource depletion, deforestation/desertification, biodiversity losses, climate change, solid wastes, air pollution, water pollution, food supply insecurities and limited safe water supplies (Chiu and Geng, 2004; Su et al., 2013; Iles, 2007).

The global economic crises have further aggravated these negative trends. Governmental economic policies have encouraged growth in some sectors while ignoring the resultant damages to others. In addition, little regard has been given to sustainability of the exploited natural resources. The social/psychological costs in terms of health, economic efficiency, and cultural dislocation are immediate, while the long-term costs of social/environmental rehabilitation are or will be enormous (Lorek and Spangenberg, 2014). Left unbridled, the emphasis upon GDP growth without integrating the currently externalized social and environmental damages are already leading to economic decline in numerous regions of the world. In order to prevent and to solve present and future problems, many countries are initiating efforts based upon their country's situations. The approaches include but are not limited to: strategies for improving energy use efficiency, policies for transitioning to increased reliance upon renewable energy, policies to support implementation of smart grid systems for improved energy management, policies for climate change adaptation, policies for improved resource efficiency, and policies for ecological restoration and protection (Baas, 1998; Pesonen, and Horn, 2014).

However, many of those policies were developed by focusing on a single perspective, without integrated, systematic approaches, which simultaneously address all of the interconnected aspects in the present and future. Such a lack of policy integration cannot appropriately address these types of complicated issues; consequently many of the policies are ineffectively and inefficiently enforced. Additionally, because most of the policies are so narrowly focused, that even if they were fully enforced, the problems they were designed to address would not be adequately prevented, reduced, or solved.

Consequently, there is a need to initiate innovative development models so that sustainable development can be realized at local, regional, national and global levels. Eco-industrial development is one approach designed to address both global and local environmental problems while contributing to the local development needs since it provides strategies to achieve greater materials and energy efficiency, environmental safety and social integrity through economies of systems integration, whereby partnerships among businesses meet common service, transportation, and infrastructure needs, and the concept adds value to businesses and communities by optimizing the use of energy, materials, and community resources (Geng and Doberstein, 2008). Practically, reduction, reuse and recycling (3R) principles have been adopted. But 3R principles should be promoted from a hierarchical perspective; namely, reduction (prevention-oriented approach) should be regarded as the most important objective (Su et al., 2013). However, many practitioners prefer recycling and reuse based solutions over the more preferable prevention, leading to less attention on prevention of the problems (Geng et al., 2012). As a consequence of not focusing upon prevention, they are inadequately fostering green chemistry, green engineering, green energy, green building, and green transportation. Additionally, they fail to address many existing and potential issues such as use of toxic substances or toxic habits and nuclear disasters or worldwide use of trillions of tons of pesticides/excess antibiotics for animals and humans that are leading to super-micro-organisms that are already

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reversing progress made earlier in improvement of human health. These and other problems can be prevented, reduced or 'solved' if industrial ecology is strategically implemented. However, industrial ecology has not, until now prevented smog like China experienced in January–February 2013. But most industrial ecology scholars and practitioners facilitate 'business as usual' with the slight improvement in the use of the stuff and energy that was being used before the industrial ecology efforts were introduced. Also, eco-efficiency improvements often ignore decreases in eco-effectivity (Van Berkel, 2007; Lorek and Spangenberg, 2014). They are not systematically designed to prevent ecological, social and ethical problems, among them increasing inequities and neo-slavery in the industrial-economic system designed to enhance profits. Until we fundamentally change the growth paradigm, all of our efforts are as useless as rearranging the deck chairs on the Titanic as it plugged to the bottom of the ocean.

Under such circumstances, there is an urgent need to initiate innovative eco-industrial development, that is, regenerative and preventative eco-industrial development. Such prevention oriented approaches should be designed to increase the effectiveness, efficiency, safety, integrity and capacity of both industrial and technological metabolism through regenerative and preventative approaches, while providing life-support services and products for the world's population in equitable and sustainable ways for the short and long-term. These new prevention-oriented approaches will require dramatic changes in policies to support the needed structural and evolutionary solutions such as alternative infrastructure and spatial planning with the objective of effecting the transition to low or zero fossil carbon societal trajectories. In practice, such approaches require combinations of new and existing elements so as to address pre-existing policy objectives along with the need to improve the overall resource efficiency, to respond to climate change, to ensure food security for the short and long-term, and to mitigate environmental emissions.

However, little has been done to develop and to implement such holistic approaches designed to prevent the problems at their sources, instead most industrial applications continue to focus upon using the otherwise wasted resources via somewhat less bad examples of so-called industrial ecology. The lack of attention to ensuring healthy ecosystem functions continues to further exacerbate the erosion of the capacity of eco-systems to function properly.

Consequently, it is critical to develop and to implement truly transformative, holistic governmental and corporate policies and to develop and implement regenerative, preventative and holistic eco-industrial development frameworks in the local, regional and global contexts so that innovative concepts, designs, policies, methods, tools and indicators are applied and implemented on the ground.

2. Topic areas

This Call for Papers (CfP) for a Special Volume (SV) of the Journal of Cleaner Production, provides an opportunity for scholars, practitioners, NGO leaders and governmental officials to work together so that more complete understandings of ways to test and implement solutions that will lead to local, regional, national and global sustainable development. This CfP is designed to attract authors to submit papers, which document the results of application of innovative concepts, policies, methods, processes, results that are broadly applicable for expanded testing and implementation of regenerative, preventative industrial ecology worldwide.

The prospective authors are challenged to determine the factors that need to be analyzed in order to catalyze radical local and regional changes, particularly in preparing appropriate policies to

catalyze the transition to post fossil carbon societies. This CfP was designed to facilitate the generation of knowledge to understand how the application of regenerative and preventative industrial ecology at the local and regional levels can provide effective lessons on how to design interventions that can promote regional and global sustainable development so that the best synergy can be obtained.

The Editorial Team of this SV invites authors to prepare and to submit papers related with regenerative, preventative and holistic eco-industrial development concepts and methods, improved energy and resource efficiency, integrated waste prevention and responsible management, green infrastructure (such as road, pipelines and 'waste resource' management facilities) as well as integrated approaches that document lessons learned from cross-regional collaboration.

The Editorial Team is also interested in information about indicators, tools and methods that can be/are being used to measure regional sustainable development through the implementation of improved eco-product design, green infrastructure, green chemistry and green engineering as integral to a more regenerative and preventative industrial ecology so as to prevent all types of waste and not just on using the current flow of wastes in more efficient ways. The Editorial Team welcomes review papers, research papers, and case studies that include but are not restricted to the following topics:

- **Comprehensive and integrative review papers on regional eco-industrial development**

We welcome one to three review papers, with a comprehensive and integrative focus on regional eco-industrial development, such as policies, methods, tools, real-world implementations, etc. Particularly, we welcome critical review papers designed to address the weaknesses and gaps in currently eco-industrial development's conceptual frameworks and the needs and potentials for advancing knowledge of how prevention-oriented eco-industrial development can be increasingly planned and implemented.

- **Innovative regional eco-industrial development policies**

Analyze under what conditions regional sustainable development policies can be effective to achieve sustainable, post fossil carbon societies. Address the question of how relevant policies can be developed and implemented to more effectively build upon the lessons learned from different initiatives in different regions. Analyze the role of laws, policies and institutions (e.g., informal rules or norms) to promote regional sustainable development. Address how legal actors and alignment of the law in different levels of government can block/encourage regional eco-industrial development programs. The Editorial Team particularly invites submissions that study how properly developed and implemented regenerative and preventative industrial ecology can contribute to making progress toward sustainable regional development. Results of investigations of how to overcome the barriers that impede progress on transformative regional sustainable development through empirical survey-based research and in-depth case studies are particularly welcome.

- **Metrics and indicators for regional eco-industrial development**

Metrics are invaluable in developing indicators, especially sets or systems of indicators, which are useful in a practical and policy context. Relevant submissions could cover the development, testing and implementation of these indicators or metrics for evaluating the soundness of regional eco-industrial

development; include benchmarking at regional levels; spatial and temporal studies; and international trans-boundary comparative studies. Studies on innovative indicators to evaluate regional eco-industrial development, such as those based on energy analysis, ecological footprints, ecological carrying capacity assessment, water footprint, material flow analysis, input–output analysis, and life cycle assessment are also welcome. Other indicator studies that evaluate biodiversity restoration footprints, food security and food safety footprints, human health and happiness footprints, and equity issues are also welcome.

• Consumer behavior and lifestyles towards regional eco-industrial development

Regional eco-industrial development requires a new role for the consumer, to be co-producer or co-re-supplier of value or to be the catalyst in greener development. Submissions may focus on grass-roots initiatives, downshifting and movements toward post fossil carbon societies. Research fields under this sub-topic could include:

- perceptions, understanding and motivations;
- Comparisons between urban and non-urban lifestyles and how they can be complimentary to prevention-oriented regional eco-industrial development;
- The roles of transaction costs/price premiums in behavior change;
- New forms of marketing and behavior change;
- Opportunities to de-couple households' wealth and eco-footprints;
- Breaking conventional consumption patterns;
- Co-benefits among institutional, industrial and domestic sustainable consumption initiatives.

• Innovation design and implementation

Examine how a particular region is able to design innovative, preventative regional sustainable development systems and to implement them based upon their own plan. We welcome submissions related with the application of advanced concepts, such as urban symbiosis, industrial symbiosis and eco-industrial parks, regional eco-industrial networks, the circular economy, regional energy contract management, low carbon pathway optimization, smart recycling systems, innovative transportation management systems integrated with renewable energy systems. Authors are invited to address the roles of innovative thinking/acting in helping to make the necessary changes towards sustainable post fossil carbon societies.

• Tools to promote regional eco-industrial development

In order to move from theory to practice, we encourage submissions related with tools to facilitate regenerative and preventative eco-industrial development, such as optimization software, decision-support tools and systems, database development, information platforms and policies to support and promote their utilization.

Also, information about educational and training materials for developing, implementing and wide-spread utilization of all of these concepts are welcomed.

3. Tentative schedule for this Special Volume

- Call for papers published during February 2014.

- Submission of 500 word, extended abstracts to Professor Yong Geng (gengyong@iae.ac.cn) by April 30, 2014.
- Responses from the Special Volume Editorial Team to the prospective authors will be sent to them by May 15, 2014.
- Authors will be invited to submit their 'peer-review ready' documents to Elsevier via the EES system by August 31, 2014. Please select Article Type: '**SI: Preventative EID**'
- Peer review/paper revision process during September–December, 2014.
- Submission of final version of all revised papers by February 28, 2015.
- Authors informed of decisions and/or about minor changes by March 30, 2015.
- Deadline for revisions of all papers, including the introductory paper for the Special Volume submitted and in the corrected proof phase by May 1, 2015.
- Publication of this Special Volume by June 2015.

4. Contributions

Full papers are invited for potential publication in this Special Volume of the Journal of Cleaner Production. Submissions should be between 9000 and 13,000 words for comprehensive reviews, between 7000 and 8500 words for full research/theoretical papers with broad empirical studies and between 4000 and 5000 words for case studies. All should be developed based upon the editorial and formatting guidelines provided in the instructions for authors for the Journal of Cleaner Production, which can be accessed from the website: http://www.elsevier.com/wps/find/journaldescription.cws_home/30440/authorinstructions.

Upon receipt of the completed documents, three to six independent reviewers will be selected to provide peer reviews for each document. Upon receipt and acceptance of the author's revised or re-revised documents, all documents will be published in this Special Volume of the Journal of Cleaner Production titled: '**Towards Post Fossil Carbon Societies: Regenerative and Preventative Eco-Industrial Development**'.

Papers must be written in good English. Authors with limitations in the command of written English are recommended to have their papers edited by a Native English Science Editor before the first submission because poorly written pieces can compromise the decisions during the review process. Similarly, they should have their final document edited by a Native English Science Editor before they submit it to Elsevier.

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