

# How, when, and why industrial ecology is good for business

October 16 2014

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Industrial ecology, a rapidly growing field focused on sustainable production and consumption, has contributed numerous important tools to modern environmental management—life cycle assessment; "industrial symbiosis," or the by-product exchange between neighboring facilities; "design for environment"; and the use of material flow analysis to track resource use in supply chains, companies, and economies.

A new special feature of Yale's *Journal of Industrial Ecology*, titled "Industrial Ecology as a Source of Competitive Advantage," presents new research on how, when, and why the use of [industrial ecology](#) by business can lead to cost savings, higher profits, and other, more intangible, business benefits.

"Environmental innovations only make a difference if they are adopted" said Reid Lifset, Editor-in-chief of the *Journal of Industrial Ecology*. "Yet the case that these intriguing approaches actually contribute to corporate competitive advantage has not been systematically examined."

## Some highlights from the issue include:

- An examination of how the Dow Chemical Company uses replacement cost methodology and life cycle assessment (LCA) to systematically demonstrate the financial and environmental benefits of a constructed wetland at a plant in Texas.
- An article about a tool that uses data mining and machine

learning to rapidly generate product carbon footprints (PCFs) for PepsiCo and combine them with business key performance indicators for strategy and business planning.

- A study of the relationship between industrial ecology and business model innovation at British Sugar, the UK's largest sugar producer.
- A description of the 20-year evolution of Interface's use of LCA as a tool guiding the company toward more-sustainable practices in carpet manufacturing.
- A profile of AU Optronics Corp., a global leader in thin-film-transistor liquid-crystal displays, that has differentiated itself from its peers and competitors by implementing carbon footprint management and dematerialization.
- A case study showing economic and environmental benefits of an industrial symbiosis involving a municipal waste-to-energy incinerator and the Hyosung chemical company in South Korea.

"This research goes beyond the question of what strategies and methods might be good for the environment," said Peter Crane, Dean of the Yale School of Forestry & Environmental Studies. "It examines how and why environmental innovations generated by industrial ecology can enhance business competitiveness."

Articles in the special feature will be freely available online for a limited time.

**More information:** [onlinelibrary.wiley.com/doi/10 ...  
.18.issue-5/issuetoc](http://onlinelibrary.wiley.com/doi/10.1002/18.issue-5/issuetoc)

Provided by Yale School of Forestry & Environmental Studies

Citation: How, when, and why industrial ecology is good for business (2014, October 16)  
retrieved 25 April 2024 from  
<https://phys.org/news/2014-10-industrial-ecology-good-business.html>

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