



International Society for Industrial Ecology



Vrije
Universiteit
Brussel

Yale



UNIVERSITY OF
CAMBRIDGE

 NTNU

INSEAD
The Business School
for the World®

“Waste ... is some useful substance that we don't know how to use or we don't yet know how to use economically”

Chair, Committee on Pollution, National Academy of Sciences (1961)

RISING TO GLOBAL CHALLENGES

25 Years of Industrial Ecology



Examples of impacts of IE

- Guidelines behind the ISO standards for LCA
- Furthered EIO models for economy-wide env. impacts.
- MFA in Environmental Accounts of OECD countries
- UN International Resource panel reports on resource decoupling, metals, biofuels, global land use change,...
- Contribution to IPCC's 5th Assessment Report
- Standard for inventorying GHGs for cities



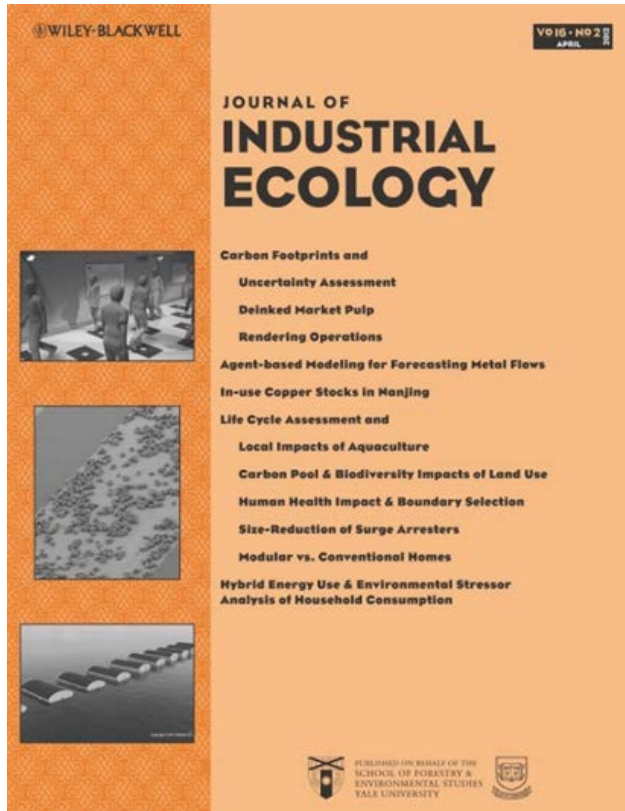
Upcoming ISIE Events

- ISIE Americas (Bogota, May 25-27)
- Industrial Symbiosis Symp. (Mass., June 17-18)
- Gordon Conference on IE (Vermont, June 19-24)
- ISIE Asia-Pacific & SEM (Nagoya, Sept. 28-30)
- ISIE 9th Biennial (Chicago, June 25-29, 2017)

www.is4ie.org

Today's Objective

To explore how the science of *Industrial Ecology* can contribute to the beneficial development of the *Circular Economy*, including environmental and resource dimensions.



The Circular Economy

A New Development Strategy in China

Zengwei Yuan, Jun Bi, and Yuichi Moriguchi

Progress Toward a Circular Economy in China

The Drivers (and Inhibitors) of Eco-industrial Initiative

John A. Mathews and Hao Tan

Towards a Circular Economy in Australian Agri-food Industry

An Application of Input-Output Oriented Approaches for Analyzing Resource Efficiency and Competitiveness Potential

Murilo Pagotto and Anthony Halog

How Circular is the Global Economy?

An Assessment of Material Flows, Waste Production, and Recycling in the European Union and the World in 2005

Willi Haas, Fridolin Krausmann, Dominik Wiedenhofer, and Markus Heinz

Three categories of products / materials in the Circular Economy

1. Can be technically & economically reused
2. Can be technically reused, but not economically
3. Cannot be technically reused

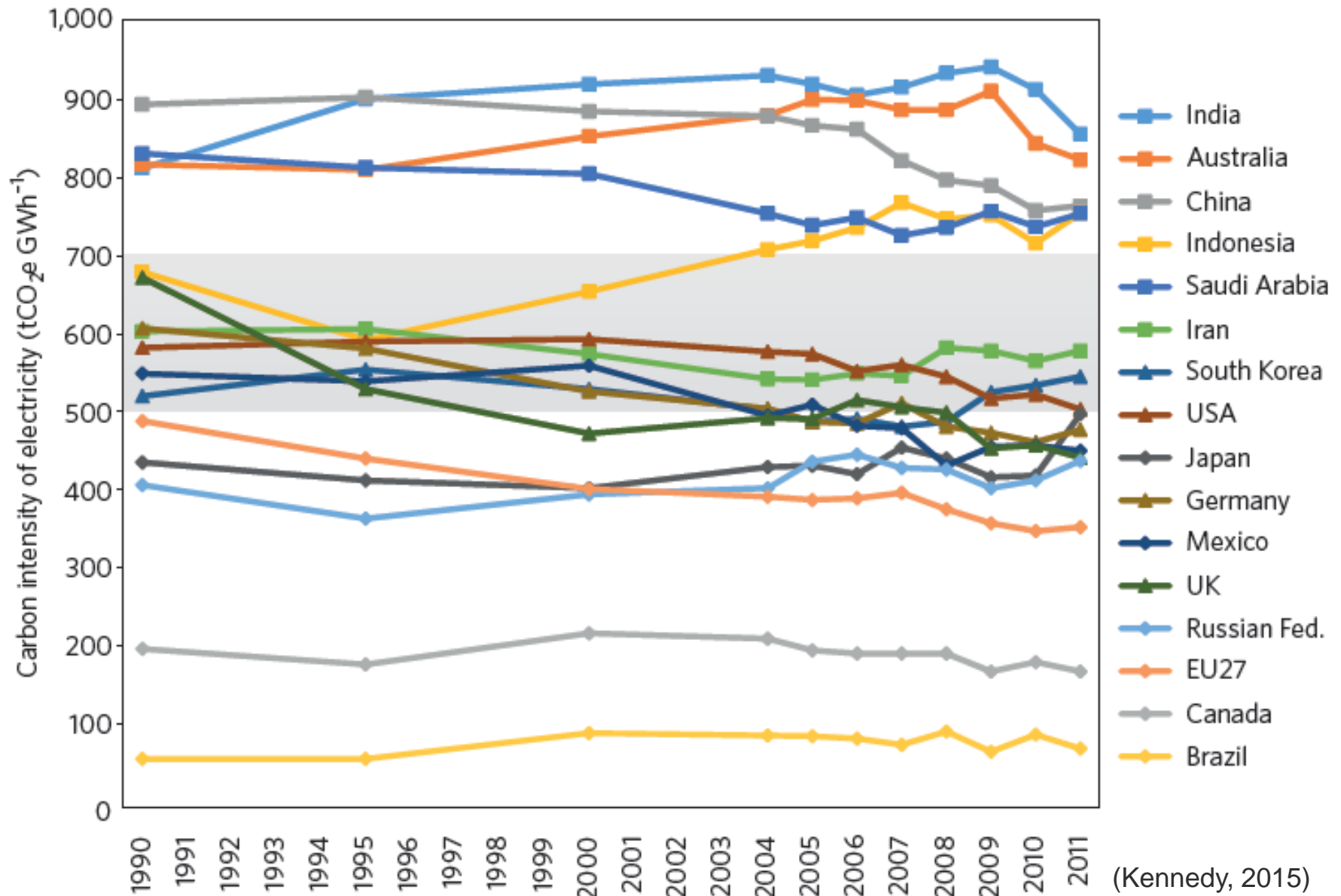
(based on Ayres 1997, Allenby 1999)

When is it worth remanufacturing? (Gutowski)



(Photo: C. Daniloff, MIT Press)

Key Threshold for Electrification



(Kennedy, 2015)

Program

1. Systems Perspectives on CE
2. Secondary and Critical Raw Materials
3. Waste Management
4. Global Warming, Energy & CE



International Society for Industrial Ecology



Vrije
Universiteit
Brussel

Yale



UNIVERSITY OF
CAMBRIDGE

 NTNU

INSEAD
The Business School
for the World®