

International Society for Industrial Ecology

**The Science
& Culture
of
Industrial Ecology**

Abstracts from the inaugural meeting

12-14 November 2001—The Netherlands

This document features abstracts from talks and posters presented at the inaugural meeting for the International Society for Industrial Ecology (ISIE). The abstracts clearly reflect the diversity and creativity inherent in industrial ecology. The November 2001 meeting was the first of ISIE's many anticipated outlets for encouraging scholars and practitioners to share their ideas and experiences.

If you would like more information about the ISIE, please see our website: www.yale.edu/is4ie

The abstract document is organized into three sections:

- | | |
|--|---------|
| I Abstracts from the speaking sessions,
organized by session | pg. 3 |
| II Abstracts from poster session organized
alphabetically by corresponding author | pg. 69 |
| III Speaking program author index and
contact information | pg. 112 |
| IV Poster author index | pg. 130 |

With each abstract is a notation as to whether the authors have a full paper available. If you would like a full paper and the notation indicates that "yes" there is one available, please contact the author directly.

This document reflects the program as of
19 October 2001.

Closing the Loop: Soft Barriers

Industrial Symbiosis: No Time to Waste

Maria Alexandra Aragão

Full paper available: Yes

The new ring-shaped economy aims at REDUCING, REUSING and RECYCLING the material flows between the social and the environmental spheres. Industrial ecology is one of the more feasible and effective ways to *close the circle*, accomplishing the third «R».

Ecological association between companies (called INDUSTRIAL ECOLOGY when carried out between industrial undertakings) depends on the matching of their *waste energy* outputs and *waste material* outputs on one hand, to their energy and material inputs on the other hand.

In the right background conditions (established by economic, fiscal and planning rules) these secondary energy and material flows emerge from spontaneous convergences between industrial undertakings. In this case we have SYMBIOTIC INDUSTRIES. However, public authorities can also unilaterally impose enterprise associations, for ecological reasons, when authorizing the project of a new industry. In that case we have PARASITICAL INDUSTRIES. This situation is beneficial at least for one of the industries involved but, above all, it's beneficial for the society as a whole.

Nevertheless, besides all the ecological benefits, one of the main reasons for the importance of ecological associations between industries is to refine the European concept of WASTE as stated in article 1 a) of the 75/442/EEC framework directive on waste management.

After analyzing the concept of waste in the legal doctrine and in the latest European Court decisions, we will conclude that in some conditions, recyclable materials reintroduced as SECONDARY RAW MATERIAL in a production process should be excluded from the concept of waste. This also will allow the distinction between *recycling facilities* and *waste treatment facilities*.

The core question is: when can we consider a secondary raw material not to be waste?

To answer the question we have to distinguish between:

- a) internal recycling and external recycling,
- b) external recycling before and after consumption, and, finally,
- c) EXOGENOUS and ENDOGENOUS EXTERNAL RECYCLING BEFORE CONSUMPTION.

Only this last category can be exempt from the application of the waste legislation (namely rules on waste movements) without impairing the fundamental ecological purposes of European Waste Law.

Overcoming Opposition to Using Recycled Materials: Industrial Ecology in Manchester

Ian Douglas and Nigel Lawson

Full paper available: No

Many communities base their environmental concerns on the visible elements of pollution and contamination. In Greater Manchester fears of dioxins and other toxic materials from incinerator chimneys generally has inhibited the treatment of municipal solid waste (MSW) by incineration. The smoke emerging from chimneys that is easily seen concerns people more than any hidden leachates that may be escaping underground from landfills. Similar concerns over evident particles such as fragments of syringes and small batteries in soil forming materials manufactured from MSW causes regulatory authorities to deny permission for its use as a soil improver on brownfield sites which are being planted with trees or other vegetation.

As much as 220,000 tons per annum of Greater Manchester's MSW could potentially be recycled as such soil forming material and be used as part of the remediation of contaminated land and old landfill sites in lieu of requiring disposal in "new" sites. In Greater Manchester 900 closed landfill sites and 3217 ha of derelict land with potential for redevelopment, but which need additional soil material for successful plant growth, still await reclamation. Trials are currently being undertaken to enhance the acceptability of this soil forming material reclaimed from MSW as a means of improving the organic content of surfaces of reclaimed sites.