

**A short course on
Designing and operating eco-industrial parks
0900-1500**

**Paton Accounting Center
University of Michigan Business School
Room P1016**

June 29, 2003

at the

International Society for Industrial Ecology Conference
University of Michigan, Ann Arbor, Michigan

900 Welcome and introductions

Convenors: Ray Cote, Marian Chertow, Ernie Lowe and Peter Lowitt and participants. Because the development of eco-industrial parks is still an emerging area, the convenors expect that participants will also want to share their experiences.

930 Getting the terminology right

Session leader: Ray Cote with contributions by others

Although there is still some debate among industrial ecologists about the terminology, there is increasing agreement. Eco-industrial development (or perhaps more appropriately, ecologically sustainable industrial development) is seen as the goal being sought. Industrial metabolism is an analytical technique used to investigate flows and fluxes of materials and energy within systems; industrial symbioses, by-product synergies and waste exchanges are similar mechanisms that foster recovery, reuse and recycling of materials and energy; eco-industrial networks, eco-industrial clusters and eco-industrial parks are types of industrial systems. Eco-industrial parks are differentiated from green business parks, sustainable technology parks, recycling parks among others. Networks can link a number of industries that may or may not be located in industrial parks while clusters are normally sectorally defined networks.

1000 Characteristics of eco-industrial parks

Session leader: Ray Cote with contributions by others

In 1997, the President's Council on Sustainable Development characterized an eco-industrial park as

- a community of manufacturing and service companies
- pursuing enhanced economic and environmental performance
- through collaboration in managing environment and resource aspects
- involving materials, energy, water, information and habitat.

Lowe, Warren and Moran (1997) have suggested that an eco-industrial park is more than

- a single by-product exchange or symbiotic pattern;
- a recycling business cluster
- a collection of environmental technology companies
- an industrial park designed around an environmental theme
- a park with environmentally friendly infrastructure or landscaping
- a mixed use development.

Cote and Cohen-Rosenthal (1998) identified some essential attributes of an eco-industrial park based on a review of some experiences described in the literature:

- defines a community of interest and involves the community in the design process;
- reduces cumulative environmental impact through substitution, absorption, exchange and collective treatment;
- maximizes energy efficiency through design, construction, co-generation and cascading;
- conserves materials through design, construction, reuse, recovery and recycling;
- creates symbiotic relationships, particularly between suppliers and customers;
- continuously improves environmental performance of companies individually and collectively;
- has a flexible regulatory system that fosters creative approaches;
- uses economic instruments to discourage waste and pollution;
- disseminates information to facilitate cooperation;
- creates mechanisms that support networking among people and businesses;
- attracts companies that fill niches to encourage diversity, resiliency and stability.

1030 **Getting started**

A) Establishing new parks

Session leader: Ernie Lowe with contributions from others

This session will describe strategies and tools, with examples, that have been employed with more or less success including steering committees, champions, vision statements, community workshops, design charettes, etc.

B) Transforming existing parks

Session leader: Peter Lowitt with contributions from others

This session will describe strategies and tools, with examples, that have been effectively used in getting interested stakeholders started in transforming existing sites.

C) Going beyond parks

Session leader: Marian Chertow with contribution from others.

Industrial parks are not self-enclosed systems, and eco-industrial parks cannot be fully self supporting. Ecosystems are nested within ever increasing systems. Eco-

industrial networks and eco-industrial clusters can also play important roles at local and regional levels.

1215 Lunch

1300 Implementing the vision and maintaining the momentum

Session leader: Peter Lowitt with contribution from others

There are a variety of mechanisms that support eco-industrial park practices. These include by-laws, codes and covenants, financing approaches, economic instruments, information management and dissemination, etc. Mechanisms being employed in the Devens, Massachusetts case will be presented.

1400 Challenges to EIP development

Session leaders: Marian Chertow and Ernie Lowe

The discussion will identify challenges for both more and less industrially developed countries.

1430 General discussion and question and answer session

Session leader: Ray Cote

BIBLIOGRAPHY

This selected bibliography has been collated to assist researchers, designers and practitioners. It is designed to provide practitioners and researchers with a good working library on the subject of eco-industrial parks.

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