



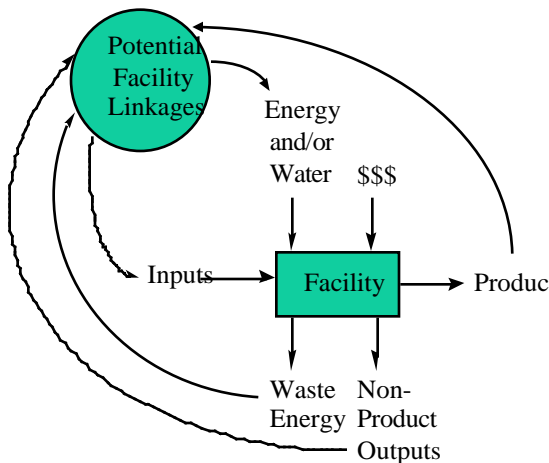
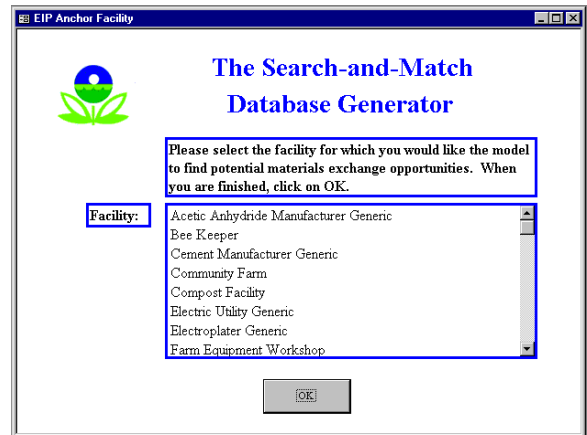
FACILITY SYNERGY TOOL (FaST)

Purpose

The Facility Synergy Tool (FAST) is a decision support tool created to aid planners, communities, and facility personnel in identifying potential materials exchange, energy trading, and purchasing coordination opportunities among industrial and non-industrial facilities. FAST is an interactive computer software program that includes: (1) a database containing facility profile information for a variety of industries, utilities, and other businesses; (2) a search mechanism that identifies potential input/output matches among facilities; and (3) a data input screen that allows users to enter information on specific facilities of interest. FAST can be used as a stand-alone product or in conjunction with the Designing Industrial Ecosystems Tool (DIET), a decision support tool for planning and design of eco-industrial parks.

Functions of FAST

- Aids planners in **targeting a viable mix of facilities** for potential participation in a new, existing, or virtual eco-industrial park.
- Identifies **potential material exchanges** among facilities where materials generated as waste or non-product outputs from one facility could be used to meet the material input requirements of another facility.
- Looks for **potential facility linkages** indicating opportunities for: energy and water resource sharing; economies of scale; information sharing on waste or non-product output minimization and disposal; purchasing coordination; and identifying alternative sources of material inputs.



Information in the Database

- FAST contains facility profiles representing a wide spectrum of industries and businesses. A facility profile may contain information collected on a **specific facility** or information developed from published sources to reflect a **"typical" or "generic" facility** in a particular industry sector.
- The **Data Input Template** helps users enter facility information directly into FAST. This information may be kept confidential or integrated into the larger database, thereby facilitating information sharing and enlarging the range of profiles in the database.

- Facility profiles include information regarding the physical size of the facility: level and types of **employment requirements**; quantities and costs of **material inputs**; levels of **energy and water** usage; process and product information; and quantity and disposal costs of **non-product outputs**.
- Facility profiles **currently under development** include:
 - Industrial Organic Chemical Facility
 - Paint Manufacturer
 - Steel Manufacturing Facility
 - Coal Powered Electric Utility
 - Electroplating Facility
 - Bee Keeping Facility
 - Composting Facility
 - Organic Garlic Grower
 - Traditional and Innovative Waste Water Treatment Facilities
 - Cement Manufacturer
 - Paper Manufacturing Facility
 - Tire Manufacturer
 - Material Recovery Facility (MRF)
 - Ice Cream Producer
 - Community Farm
 - Farm Equipment Shop
 - Insectary

Facility Selection and Linkages

- For each facility selected by the user, FAST creates a report of all facilities in the database that have potential linkages with that facility. Linkages may include input to input, input to non-product output, product to input requirement, energy/water output to energy/water requirement, product to product, or non-product output to non-product output.
- For any material listed in the database, the user may have FAST generate a list of all facilities in the database that use that material as an input, create it as a product, or generate it as a non-product output.
- FAST can be fully integrated with the Designing Industrial Ecosystems Tool (DIET). After identifying facilities with potential linkage opportunities, FAST gives the user the option of exporting facility information to DIET. DIET takes into account the economic, environmental, and employment benefits in determining a viable mix of facilities for participation in an eco-industrial park.

Materials Exchange Opportunities

Listed beside each input are facilities that have non-product output (NPO) flows that could potentially be used as an input for the user-selected facility.

<u>User-Selected Facility</u>	<u>User-selected Facility Input</u>	<u>Matching Facility</u>	<u>Description of NPO</u>
Paint Manufacturer Generic	Cyclic organic crudes and intermediates, and organic dyes	Steel Manufacturer Generic	Naphthalene, made in chemical plants
		Acetic Anhydride Manufacturer Generic	Nitrobenzene
	Industrial organic chemicals, not elsewhere classified	Paper and Paper Goods Manufacturer Generic	Acetone, synthetic
		Acetic Anhydride Manufacturer Generic	Ethylene oxide
		Acetic Anhydride Manufacturer Generic	Ethylene glycol

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