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## Institute for Environmental Research and Education

### Using Life Cycle Inventory Data for Economic Advantage

The Institute for Environmental Research and Education is undertaking a pilot program to develop life cycle inventories for community utilities and for the industrial facilities the utilities depend upon. The driver for this program is the movement towards disclosure of product environmental performance using an environmental product declaration.

An Environmental Product declaration (or EPD) discloses the life cycle impacts of the product: much of the manufacturing phase of a product is driven by the environmental impact of the energy and water they use and the liquid and solid wastes they dispose of. Where local governments units (cities, towns, counties) have worked hard to diminish the environmental impacts of the services they provide, that effort is reflected in the EPDs of the companies that use those services. The EPD that can result gives the companies an economic advantage over competitors.

We are seeking local governments who are interested in piloting this approach. The work we are hoping those governments to perform includes:

- 1) Provide life cycle inventory data for the utilities they control (energy, water and wastewater, solid waste and public transport)
- 2) Assist IERE in finding companies that are willing to share their own life cycle inventory data.

What IERE will do includes:

- 1) Work with the government and the companies to develop the data
- 2) Mine existing data sources to reduce the amount of work is needed
- 3) Publish the data/support the government's publication of the data as appropriate.

The kind of data IERE can gather through data mining is air, water and waste emissions from facilities (derived from state, federal and local regulatory bodies). The additional data needed to form a life cycle inventory are the purchases and sales of the entities involved.

Normal practice for life cycle inventories is to aim at obtaining 95% of all energy and mass flows over a 12-month period. So, as an example, a drinking water utility would need to provide the following information:

- Electricity consumption
- Fuel consumption (gas, LP, natural gas)
- Water intake
- Water delivered (billed)
- Chlorination/sanitization chemicals used
- Solid waste generated

We will work with the utility to develop a life cycle inventory in a spreadsheet/table format that they may post on their website. The inventory would disclose the resource use and the environmental emissions of delivering a liter of drinking water. A similar task would be done for all the utilities performed.

Likewise for companies, we would create a small application for them to disclose their fuel, water and chemical use and the amount of product they create. We are especially interested in the building products industry.

Recognizing the need for confidentiality of data, we are willing to sign a non-disclosure statement for the companies. We would need a clause allowing us to share the life cycle inventory data anonymously (i.e., no-one would know that the data reflected their particular processes.) The results would be expressed as resource use and emissions per unit of product produced.

The value of this information to industry is clear: they will be well able to move to an environmental product declaration as their markets move to requiring them. Where the government utilities are particularly clean, their environmental product declarations will reflect the work of the utility to perform well environmentally.

We hope eventually to be able to publish this information in the U.S. Life cycle inventory database (owned by the National Renewable Energy Lab). That data will inform the life cycle assessments of all companies seeking to perform LCA studies on products in the US. Customers and vendors of the companies will find this information useful.

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