

# U.S. LCI Database Stakeholder's Meeting

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**US LCI Database Stakeholder's Meeting  
Washington, D.C.  
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# U.S. LCI Database Objective

- Public/private “partnership” to develop a publicly available LCI database for commonly used materials, products, and processes
  - Government maintains the database and provides common data
  - Industry support with LCI data and some funding
- Partnerships are key to the success!



# Project Support

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- Organizations
  - Government
    - DOE, GSA, USDA, EPA, NIST, Navy
  - Non-government
    - Athena Institute, Franklin Associates, Sylvatica, CORRIM, Vehicle Recycling Partnership, American Plastics Council, Portland Cement Association, American Center for Life Cycle Assessment, USGBC, others
- Types of support
  - Funding to NREL
  - Funding to Others
  - LCI Data
  - Labor / Technical Assistance

# How it Started

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- 1990s: Athena Institute started a building LCI project in Canada, which caught U.S. DOE attention
- 2001: DOE and Athena initiated the U.S. LCI Database project at NREL
- May 2001: Ford motor company hosted a meeting of interests (Industry, Government, & NGOs)
- Database went live in 2003

# Initial Scope

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- Commodity level manufacturing for commonly used materials and products
  - Industry averages
  - unit process data
  - cradle-to-gate scope
- Standard transformation processes
  - stamping, pressing, painting and other “heat, beat and treat” operations
- Other common processes
  - electricity generation, transportation,
  - energy pre-combustion
  - end-of-life modules

# Importance of a Public LCI Database

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- Pulls together existing data in a central location using a consistent methodology
- Promotes wider use of LCA
- Provides a consistent level playing field
- Allows for peer critique of performance claims
- Provides scientific basis for comparison
- Supports more informed decision making

# Key Database Criteria

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- Unit process data
- Uniform treatment of all materials
- Transparent
- Consistent protocol following ISO standards
  - Ecospold compatible
  - Compatible with international databases
- Regional data development as necessary
- Fully accessible in format(s) to maximize use

# Available Information

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- All Phase I reports
- Data Development Guidelines
- Database User's Guide
- Streamlined spreadsheet template
- Data
  - 178 data sets
  - 177 dummy data sets
  - Three formats
    - Streamlined spreadsheet
    - EcoSpold spreadsheet
    - EcoSpold xml

# Website – [www.nrel.gov/lci](http://www.nrel.gov/lci)

The screenshot shows the NREL U.S. Life-Cycle Inventory Database Home Page in a Mozilla Firefox browser window. The browser title is "NREL: U.S. Life-Cycle Inventory Database Home Page - Mozilla Firefox". The address bar shows "http://www.nrel.gov/lci/". The page features the NREL logo and the tagline "Innovation for Our Energy Future". A navigation menu includes "About NREL", "NREL's R&D", "Applying Technologies", "Learning About Renewables", and "NREL Home". The main heading is "U.S. Life-Cycle Inventory Database". A search bar on the right offers "More Search Options" and "Site Map" links. A sidebar on the left lists "About the Project", "Database", "Publications", "Life-Cycle Assessments", and "Related Links". The main content area includes a large image of a green field and a description of the LCI Database, stating it helps life-cycle assessment (LCA) experts answer questions about environmental impact. It also mentions that the data are consistent with international standards and provides a link to a "Printable Version". At the bottom, a banner states "This Web Site is Powered by Renewable Energy" and provides information about NREL's affiliation with the U.S. Department of Energy and its operation by Battelle. Footer links include "Need Help?", "Security & Privacy", "Disclaimer", and "NREL Home".

NREL: U.S. Life-Cycle Inventory Database Home Page - Mozilla Firefox

File Edit View Go Bookmarks Tools Help

http://www.nrel.gov/lci/

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## U.S. Life-Cycle Inventory Database

More Search Options Search  
Site Map

**About the Project**  
**Database**  
**Publications**  
**Life-Cycle Assessments**  
**Related Links**

NREL's Buildings research supports the U.S. Department of Energy's [Building Technologies Program](#).

NREL and its partners created the U.S. Life-Cycle Inventory (LCI) Database to help life-cycle assessment (LCA) experts answer their questions about environmental impact. This [database](#) provides a cradle-to-grave accounting of the energy and material flows into and out of the environment that are associated with producing a material, component, or assembly. It's an online storeroom of data collected on commonly used materials, products, and processes.

The critically reviewed LCI data are consistent with a common research protocol and with international standards. The LCI data support efforts to develop product LCAs, support systems, and LCA tools.

[Printable Version](#)

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Done

# Available Data

The screenshot shows a Mozilla Firefox browser window displaying the NREL U.S. Life-Cycle Inventory Database. The browser's address bar shows the URL <http://www.nrel.gov/lci/database/default.asp>. The website's navigation menu includes links for ABOUT NREL, SCIENCE & TECHNOLOGY, TECHNOLOGY TRANSFER, APPLYING TECHNOLOGIES, and LEARNING ABOUT RENEWABLES. The main heading is "U.S. Life-Cycle Inventory Database". A search bar is located on the right side of the page, with a "Search" button and links for "More Search Options" and "Site Map".

**U.S. Life-Cycle Inventory Database**

Life-Cycle Inventory Home

**About the Project**

**Database**

- Login
- Access Data**
- Registration
- Submit Data
- Help

**Publications**

**Life-Cycle Assessments**

**Related Links**

## Access Data

Below you may access modules in the life-cycle inventory database by category or module name.

After you select a module, you will be able to read information about the module, view streamlined data, and download data files.

## Data Modules by Category

- [Air Transportation](#)
- [Animal Production](#)
- [Chemical Manufacturing](#)
- [Crop Production](#)
- [Fabricated Metal Product Manufacturing](#)
- [Food Manufacturing](#)
- [Forestry and Logging](#)
- [Mining \(except Oil and Gas\)](#)
- [Nonmetallic Mineral Product Mnf.](#)
- [Oil and Gas Extraction](#)
- [Petroleum and Coal Products Mnf.](#)
- [Primary Metal Manufacturing](#)
- [Rail Transportation](#)
- [Transportation Equipment Manufacturing](#)
- [Truck Transportation](#)
- [Utilities](#)
- [Waste Management and Remediation Service](#)
- [Water Transportation](#)
- [Wood Product Manufacturing](#)
- [All Data Modules by Category](#)

Information about additions and modifications to the U.S. LCI Database is contained in the Change Log ([PDF 94 KB](#)) [Download Adobe Reader](#). The current revision is Aug 26, 2008 V 1.6.0.

# Current and Near-Term Activities

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- Recently revised entire database
  - SimaPro database available
  - GaBi database coming
- Licensing the database for distribution
- Newly formed advisory board
- Road mapping (first meeting Feb. 18)
  - Short-term and long-term planning exercise
  - Input from all stake holders

# Next Steps

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- Revise database management plan
  - Formal data review protocol
  - Data revision plan
  - Data acceptance plan
- Coordination with international databases
  - Working with UNEP Life Cycle Initiative, EcoInvent, European Commission, and others
- Improve data accessibility
  - Easy data entry and tracking
  - Tool for roll-up of unit process data

# More Information

- [michael\\_deru@nrel.gov](mailto:michael_deru@nrel.gov),
- [ICI@nrel.gov](mailto:ICI@nrel.gov)
- [www.nrel.gov/ICI](http://www.nrel.gov/ICI)

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# Break-out Groups

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- LCI Data Suppliers (red)
  - 6099
  - Mike Levy
- LCA Practitioners (blue)
  - Room 6088
  - Nuno da Silva
- End Users of LCA data (green)
  - 6099
  - Wayne Trusty

# Break-Out Session 1

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- Topic: Uses of LCA
- Questions
  - What are your current uses of LCA?
  - What are your potential new uses of LCA?
  - Where do you get your LCA information?

# Break-Out Session 2 – LCI Suppliers

- Topic: Needs to Support LCA Activities
- Questions:
  - Are there specific applications that the database could or should serve?
  - What are your concerns with data with regards to:
    - Transparency
    - Consistency
    - Level playing field
    - Quality assurance
    - Averaging
    - Other?
  - What near term activities should be undertaken?

# Break-Out Session 2 – LCA Practitioners

- Topic: Needs to Support LCA Activities
- Questions:
  - Are there specific applications that the database could or should serve?
  - What are your concerns with data with regards to:
    - Transparency
    - Consistency
    - Quality assurance
    - Format
    - Other?
  - What near term activities should be undertaken?

# Break-Out Session 2 – End Users

- Topic: Needs to Support LCA Activities
- Questions:
  - Are there specific applications that the database could or should serve?
  - What are your concerns with data with regards to:
    - Representativeness
    - Consistency
    - Uncertainty
    - Quality assurance
    - Other?
  - What near term activities should be undertaken?



# Needs

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- Expand database
- Improve accessibility to the data
- Develop simple tools for use of results
- Streamline data collection
- Streamline data validation
- Improve compatibility with international data
  - World wide LCI database