

# **International Views of LCI Data**

**US LCI Database Stakeholders Meeting  
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# Just a few messages

- History to present situation
- Two major frameworks/networks within LCA
  - **Developments within each**
  - **Desirability of:**
    - Co-operating
    - Harmonizing protocols
    - Sharing data
- Third initiative(s): Empowering bottom-up data generation
- Needs
  - **Protocol harmonization**
  - **Micro-audits and data validation**
  - **Modularity and transparency**
- Thinking outside our box
  - **Supply chains are drastically global**
  - **Sister methods, databases, global communities**

# History: Databases as (usually national) Islands

- **1980-2000's**
- Sector-focused databases (cradle-to-gate) within countries
  - Various institutes and their thematic databases in CH
  - APME, IISI, etc.
- Harmonize/upgrade existing databases within countries/regions
  - Ecoinvent
  - Germany
- Create data registries for countries/regions
  - e.g., ELCD
- Adapt existing out-of-region databases
  - e.g., Australia
- Create new national databases from scratch
  - Japan
  - US LCI
  - Brazil, Malaysia, Thailand...



# Global Supply Chain

# Currently: Two (“competing”) International Networks

- ILCD
- Ecoinvent



- Data documentation and exchange format
- Handbook documents being published in web
  - **General Technical Guidance Document**
  - **Generic and Average LCI; LCIA Models, methods, & factors**
  - **To provide: “basis for ensuring consistency and quality across LCA data, methods, and studies for all applications.”**
- Working to formalize bi-lateral collaboration with national projects:
  - **Malaysia**
  - **Thailand**
  - **Japan**
  - **China**
  - **Brazil**

# Ecoinvent

- Ecospold data doc. & exchange format
- Guidelines published in web:
  - **Overview and methodology**
  - **Code of Practice (LCI)**
  - **Implementation of LCIA methods**
- Establishing regional center partnerships



- > 4000 unit processes
- Comparable & inter-linked
- Includes infrastructure
- Uncertainties quantified



- ELCD registry contains systems (cradle 2 gate)
- New ILCD data will be comparable or at least sufficiently documented, via Handbook & QC



## Our interests would be served by...

- Co-operation
- Harmonizing protocols
- Sharing of data



# The Adaptation Paradigm and Approach

- Start with existing database
- Must be unit process transparent
- Modify selected processes
- Continually refine
- First (known) example: Australia, starting with ecoinvent 1



- The CIRAIG has decided to:
  - **Start with an existing database: Ecoinvent**
  - **Re-calibrate uncertainties**
  - **Use it to**
    - Prioritize data refinement
    - Identify new data development
  - **Refine (“Canadianize”) from within**
- Seeking funding
- Intent: a collaborative and pan-Canadian project

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# Third Initiatives: Empower Bottom-Up Data Generation

- Enable ubiquitous reporting; web-based publishing; aggregation potential



- An “Open” data registry (with UNEP collaboration)



- One vision:
  - **Parallel (and competing) services to add value through validation, upgrading to protocols, etc.**

# Validation: Starts at the level of individual reporters

- Towards standardization of Sustainability Assurance
- Approach: bring at least 3 communities together:
  - **LCA**
  - **Financial Auditing professionals and academics**
  - **GHG reporting, registries**
- Maximize synergy, minimize duplication
- Establish a roadmap for standards development
- Convener: U of Arkansas Applied Sustainability Center
  - **Andrea Romi, Jeff Rice**



APPLIED SUSTAINABILITY  
CENTER

# Outside the box...



Your proposal is innovative.  
Unfortunately, we won't be able  
to use it, because we haven't  
tried something like that before.

## Outside the box...

- Supply chains are global
- Modularity: Connect to Best Existing Upstream Data
- Non-traditional uses and users



- Non-traditional data development partners





- 1992-present
- Database version 7
- Publicly available, transparent; documentation, peer review, and replicability
- Network of more than 6700 researchers in more than 150 countries “with a common interest in global economic analysis of trade, resources, and the environment”
- Quality assurance process
- Input/output models, within general equilibrium framework
  - **113 regions**
  - **57 sectors each region**
  - **Bi-lateral trade flow data, with modeling of factors**
  - **Funding from many sources including US EPA, addressing:**
    - GHGs, physical energy flows, indirect land use

