



AIST International Open Workshop "Worldwide efforts on LCA Databases" 8 February 2010

Development of Inventory Database for Environmental Analysis (IDEA)

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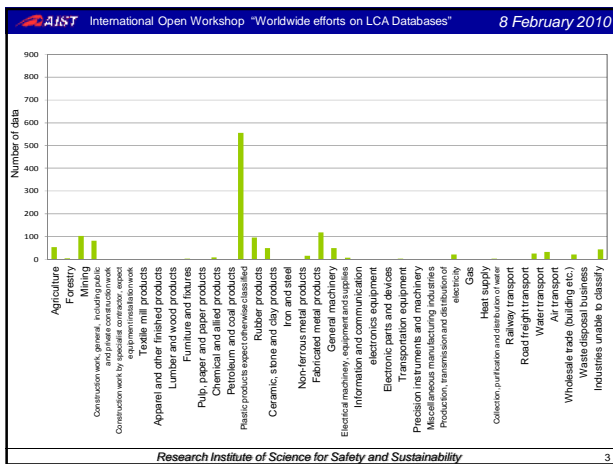
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Current status of Japanese LCI Database

Bottom up

- JLCA-DB
 - Association: (351)
 - Investigation: (413)
- AIST-LCA Ver.4/JEMAI-LCA Pro Standard database
 - Basic material production processes (400)
- AIST-LCA Ver.4/JEMAI-LCA Pro Option database
 - Chemicals, Steels, etc. (1,300)
 - Additionally, in-house power generation and emission treatment processes (500)
- Ministry of the Environment I-O
 - 3EID : (400)
 - Easy-LCA (Toshiba) : (3700)

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Concept of our Database

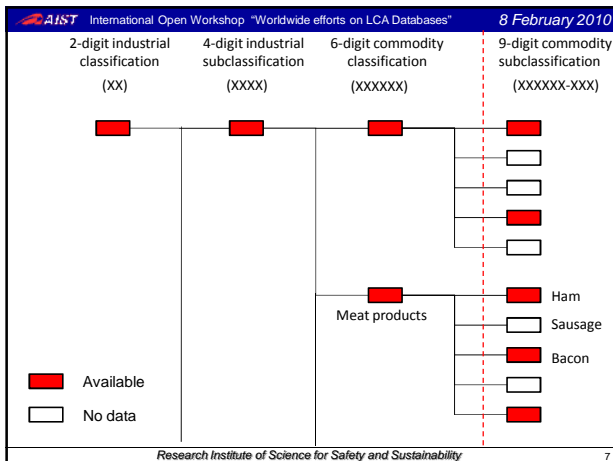
- Exhaustiveness : To cover all materials and products
- Completeness: To estimate all targeted elementary flow
 - Target: global warming, resource consumption, acidification
 - Challenge: water consumption, eutrophication, solid waste landfill
- Transparence
 - To collect and disclose unit process (gate to gate) data
 - To construct each process tree
- Reliability: To evaluate data reliability in each process
- Data quality: To estimate data quality in each data

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IDEA code

2-digit industrial classification	4-digit industrial subclassification	6-digit commodity classification	9-digit commodity subclassification
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Method

- 1. Statistics**
 - Energy consumption statistics, Dynamic statistics of each industry, I-O table etc.
- 2. Process analysis (Interviewing)**
 - Data are collected by interviewing and surveying.
- 3. Literatures**
 - System boundary and data quality are checked
- 4. Existing data**
 - System boundary and data quality are checked

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Completeness

Incomplete data ← Complement using some models

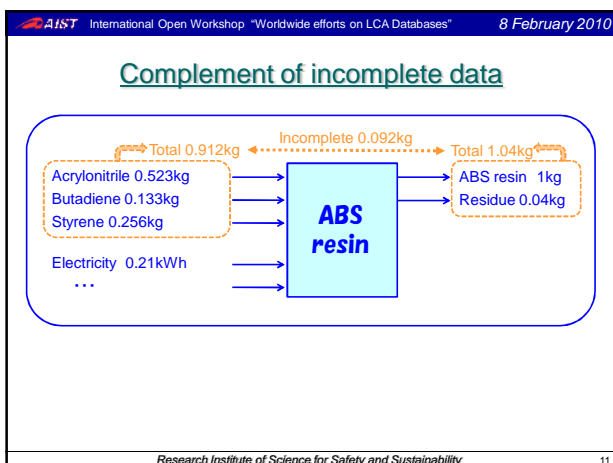
- Target:
 - Global warming: CO₂, CH₄, N₂O, HFCs, PFCs.....
 - Resource consumption: major element, fossil fuel
 - Acidification: SO₂ (SO_x), NO₂ (NO_x)
- Challenge:
 - Water consumption: freshwater(surface + underground), see water,
 - Eutrophication: NO_x, COD (BOD), T-P, T-N
 - Solid waste landfill: Controlled type landfill, Inert type landfill

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Complements

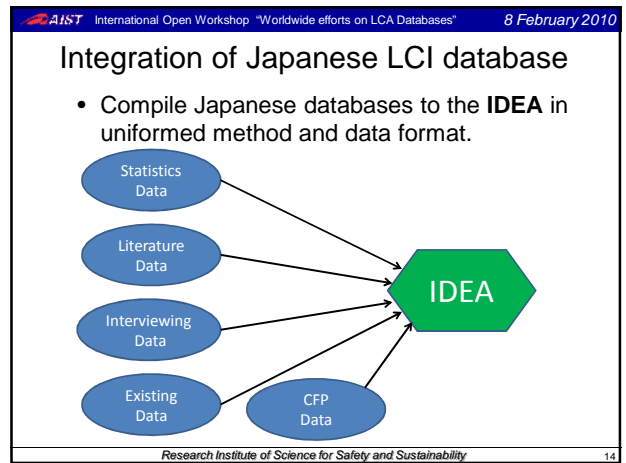
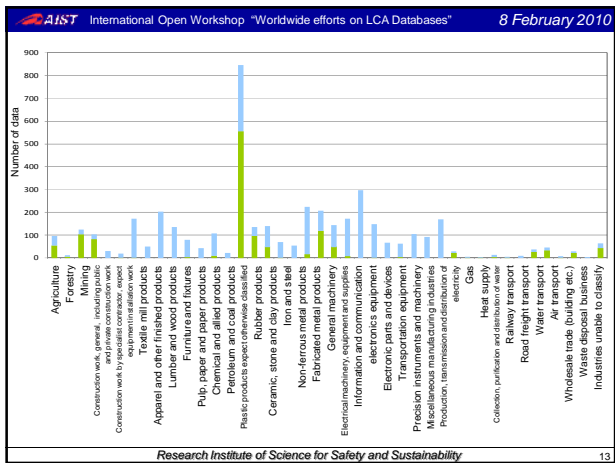
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High transparency : Visualization of process tree

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