# Quality management during the SimaPro Eco-invent implementation


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# Overview

- Our policy
- Implementation issues
- Using uncertainty
- What we hope

# Our user profile

- The average user makes one big LCA and several smaller
- The average knowledge level is limited
- The average user is not extremely interested in the backgrounds of data.
- Reputation is what counts.

# Our policy:

- The software market is not a market for experts
- Ecoinvent opens up new markets for non experts:
  - The data collection problem has been "solved"
  - Users "only" add foreground data like product specifications
  - SimaPro *Compact* aims at this target group
- We need credible public databases
- We need transparency.....

# Our idea of Quality

- Reliable results. Eco-invent calculations bust give exactly the same results as the original
- Reduce the risk for user error
- Have access to all datasets in one LCA

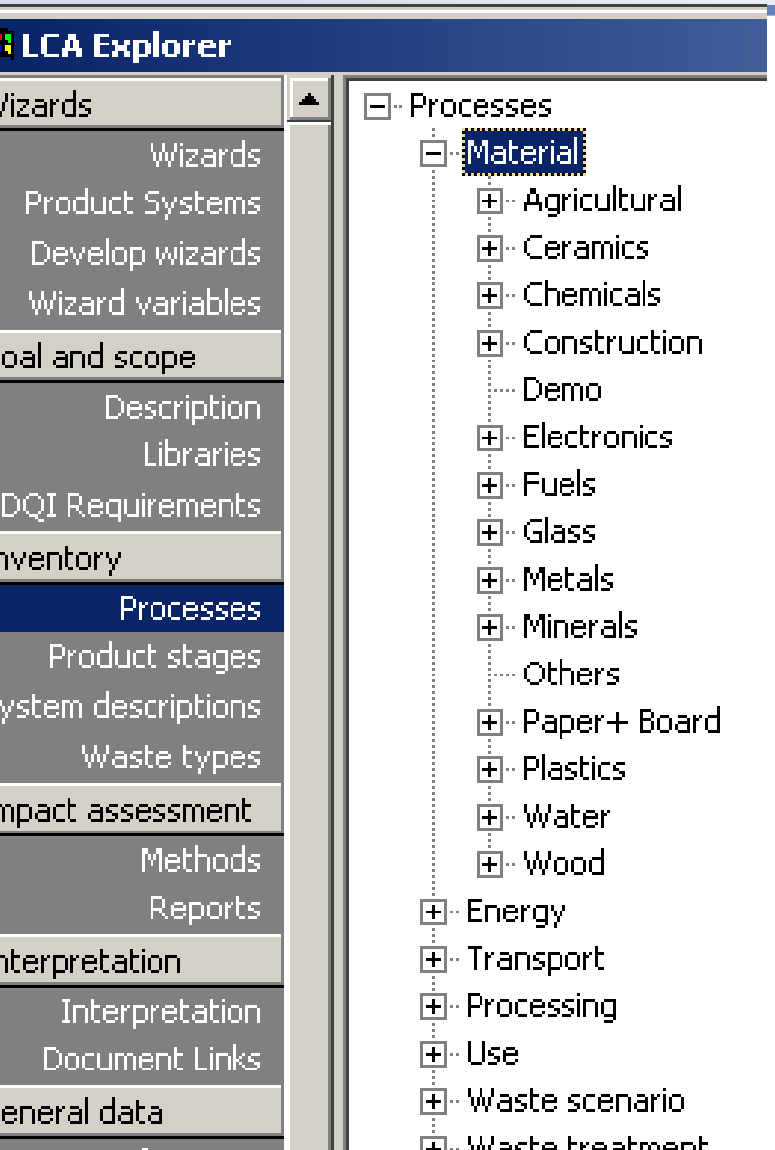
# The importance of ecoinvent

- Ecoinvent will be the standard background data base for those who can afford the licence
- Other users must still be able to use older "free" data, as their background data
- Eco-invent has the critical mass to set a standard. (unlike ISO)

# Our struggle with Ecoinvent

- Conversion took much more time as expected
- We have been stubborn:
  - Maintain look and feel of SimaPro
  - Maintain compatibility with older data
  - Ensure high quality

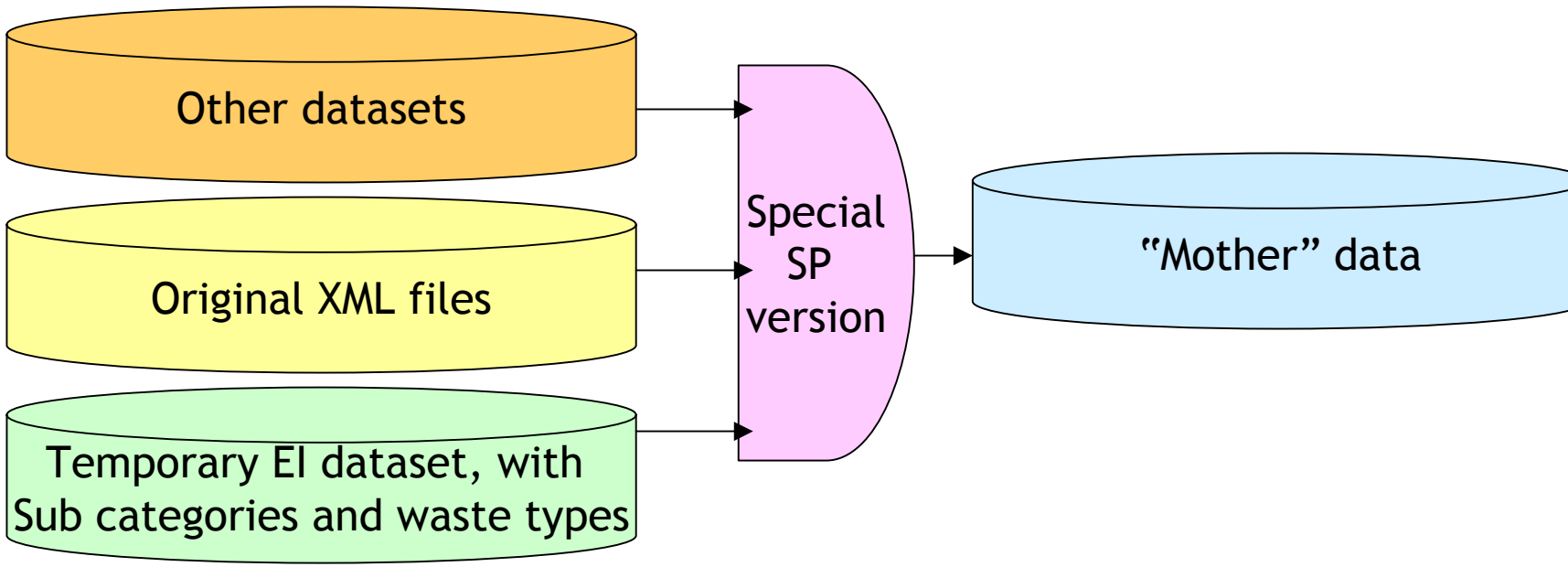
# Same look and feel of the software




- Process data sub-category structure does not mach
  - In EI only one level
  - In EI material defines category
  - In SP multiple levels
- Waste Handling
  - Materials have waste type
  - Waste scenario's not in EI
- Too many comment fields

# Importing the data

- All changes are made by using repeatable operations in SimaPro or in the conversion process
  - Substance append lists
  - Translation dataset for subcategories and waste types
- Nobody is allowed to edit the "mother" database,



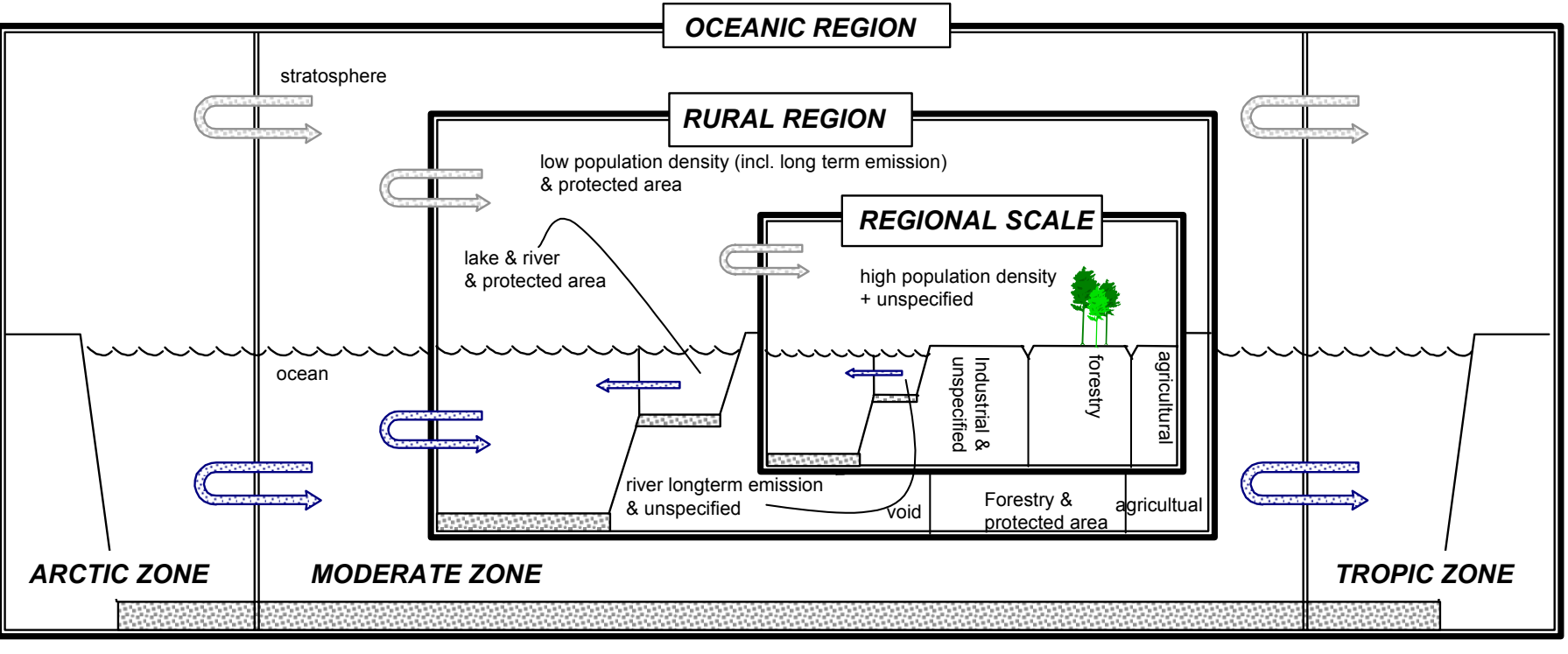
# Testing and checking

- A separate computer was used to run overnight tests:
  - Compare calculated results from Units with Systems
  - Compare calculated LCIA results with EI LCIA results
- Big differences in impact assessment figures

| Deviation | count |
|---|---|
| >= 25% | 9 |
| 10% to 25% | 8 |
| 2% to 10% | 59 |
| 1% to 2% | 23 |
| < 1% | 2421 |
| total | 2520 |

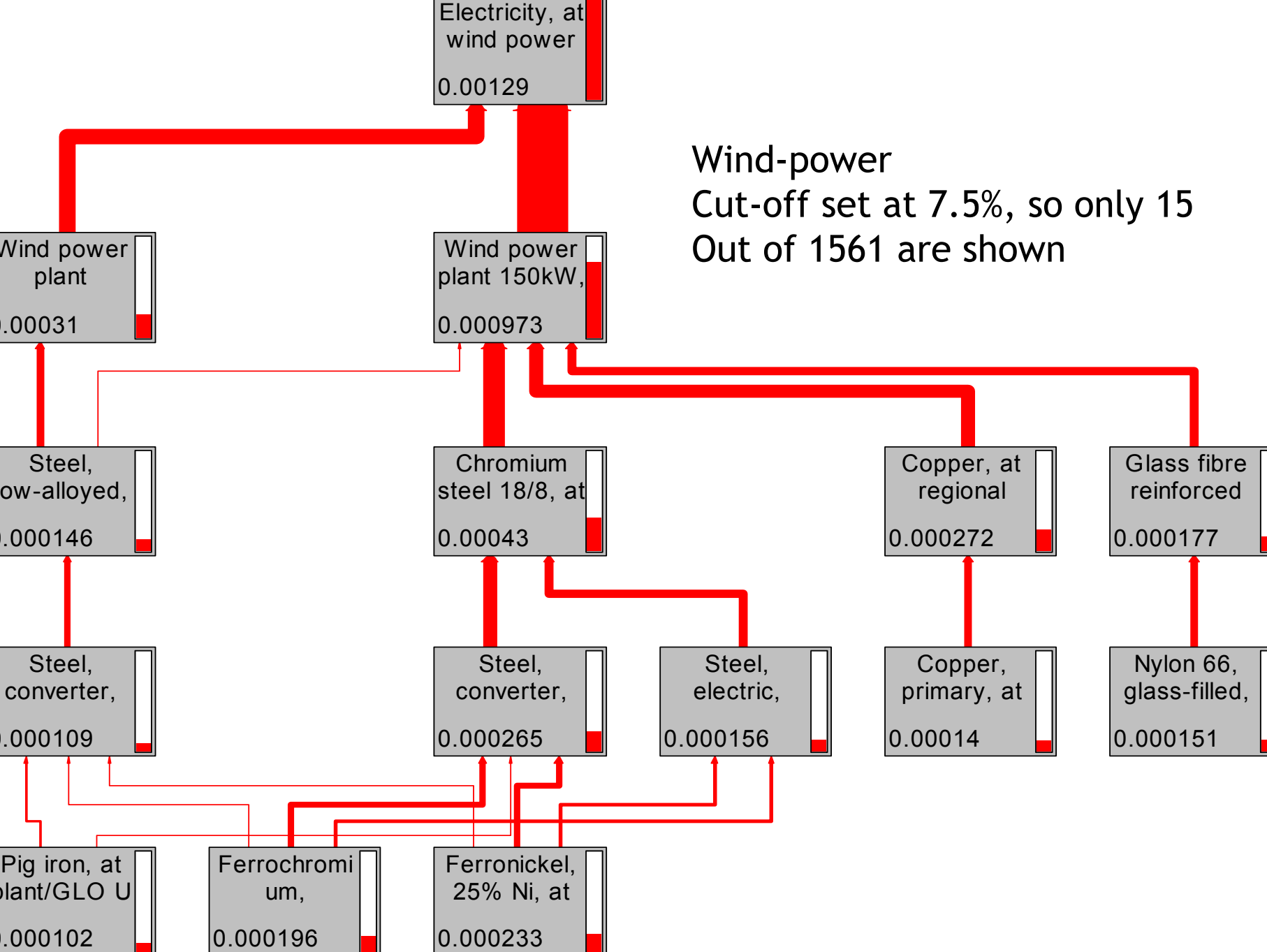
# Struggling with sub compartments

- In *theory* subcategories are great for impact assessment
- New ReCiPe method will use most of these....

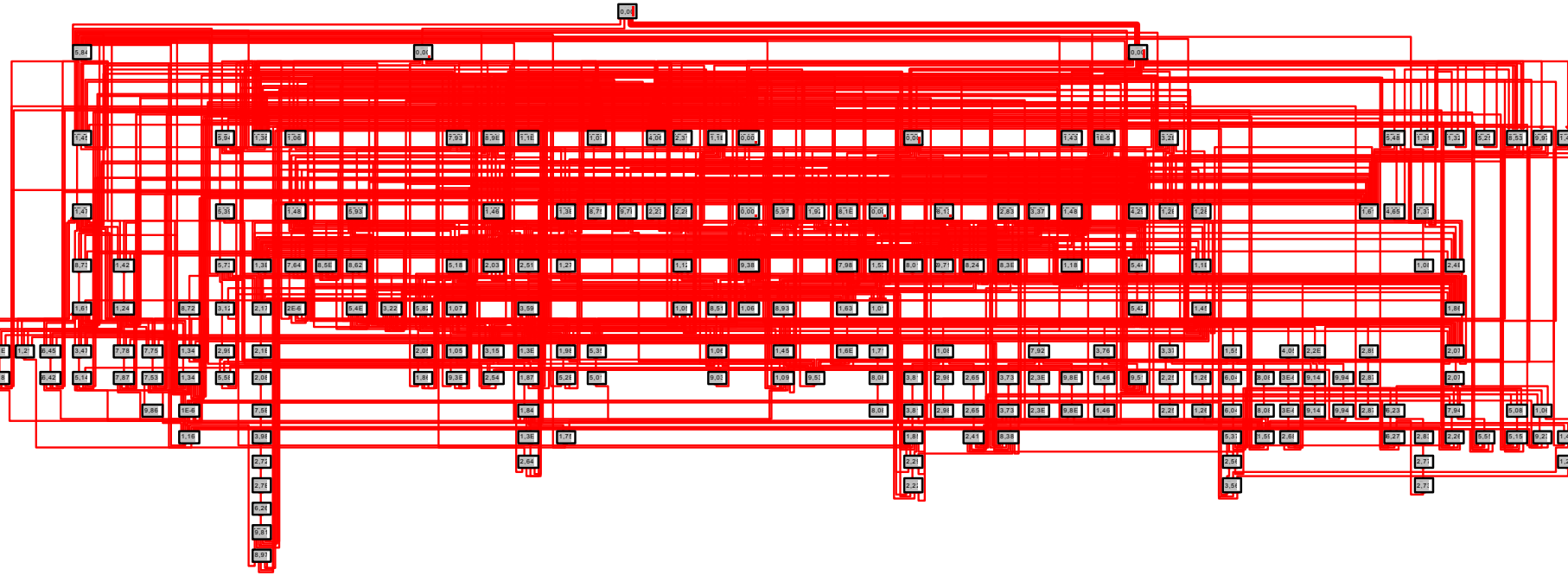


# Why we do not use EI methods

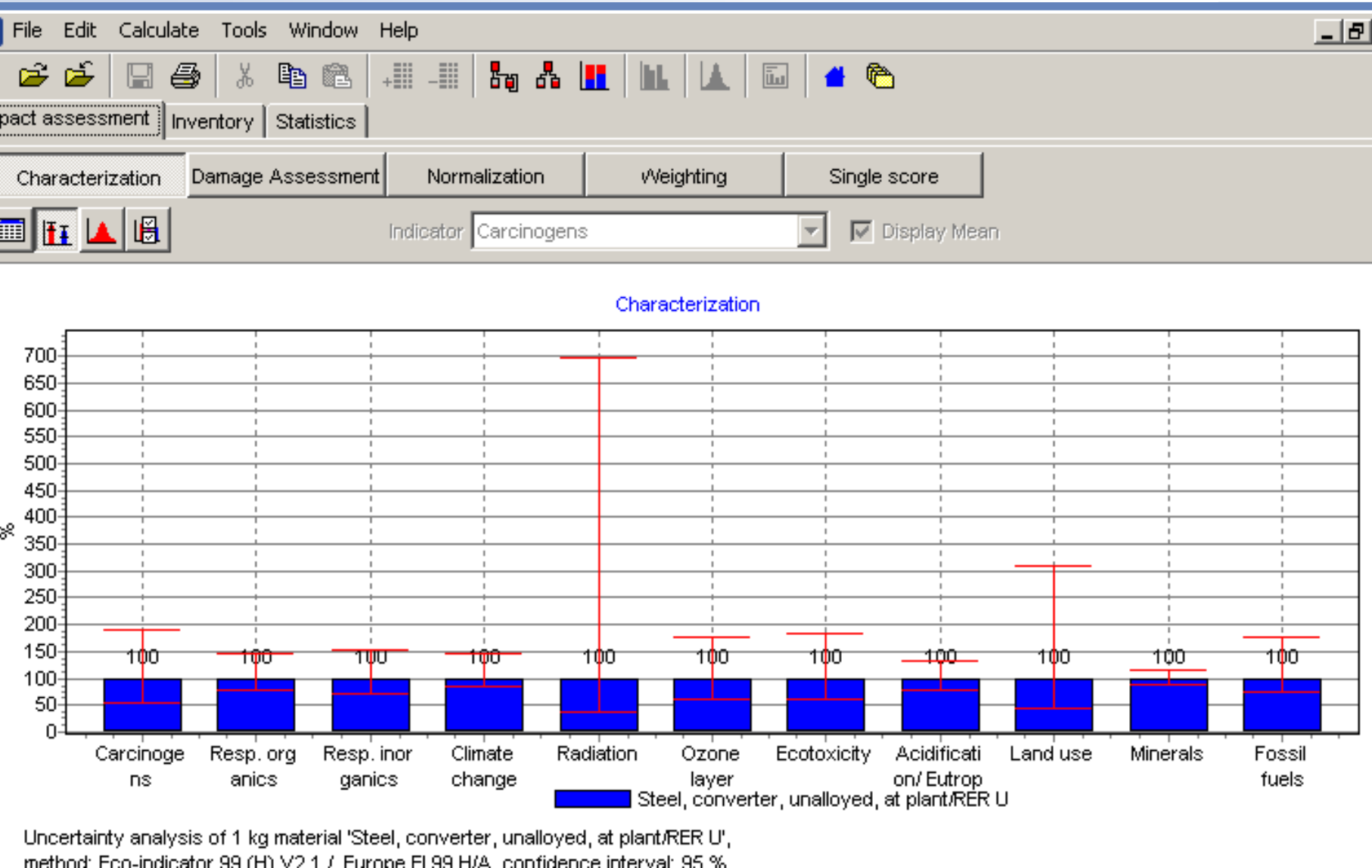
- Ecoinvent methods do not include characterisation factors that are not in inventory.....
- Direct conversion not possible:
  - Eco-invent lists all relevant sub-compartments,
  - We use one default value, and list exceptions
- Advantages
  - Short substance lists to choose flow from
  - Characterisation lists remain manageable


Electricity, at wind power
0.00129
Wind-power
Cut-off set at 7.5%, so only 15
Out of 1561 are shown
Wind power plant
.00031
Wind power plant 150kW,
0.000973
Steel, ow-alloyed,
.000146
Chromium steel 18/8, at
0.00043
Copper, at regional
0.000272
Glass fibre reinforced
0.000177
Steel, converter,
.000109
Steel, converter,
0.000265
Steel, electric,
0.000156
Copper, primary, at
0.00014
Nylon 66, glass-filled,
0.000151
Pig iron, at lant/GLO U
.000102
Ferrochromi um,
0.000196
Ferronickel, 25% Ni, at
0.000233

# Graphical representation with 0.1% cut-off 213 processes left

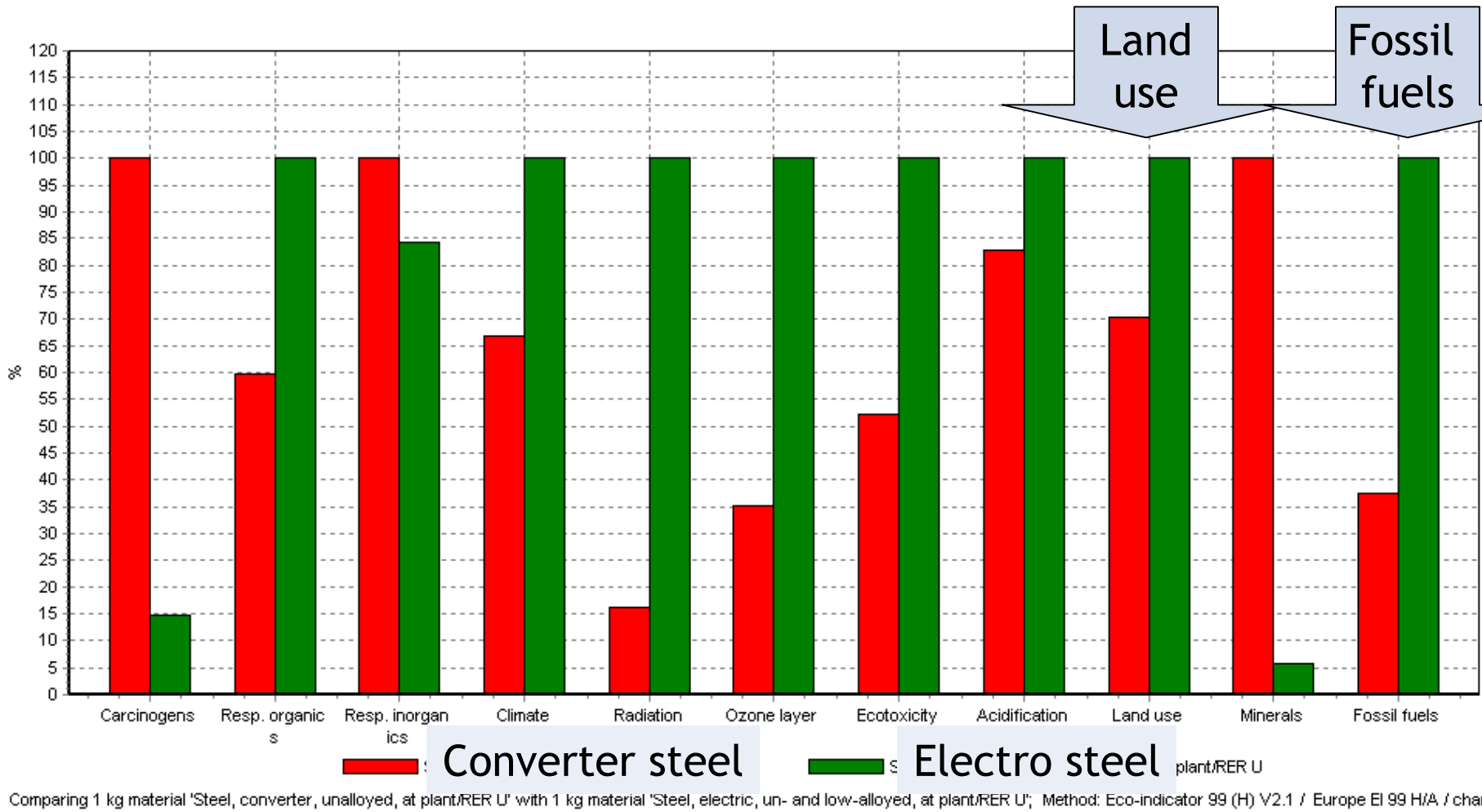


# Uncertainty in Steel characterisation



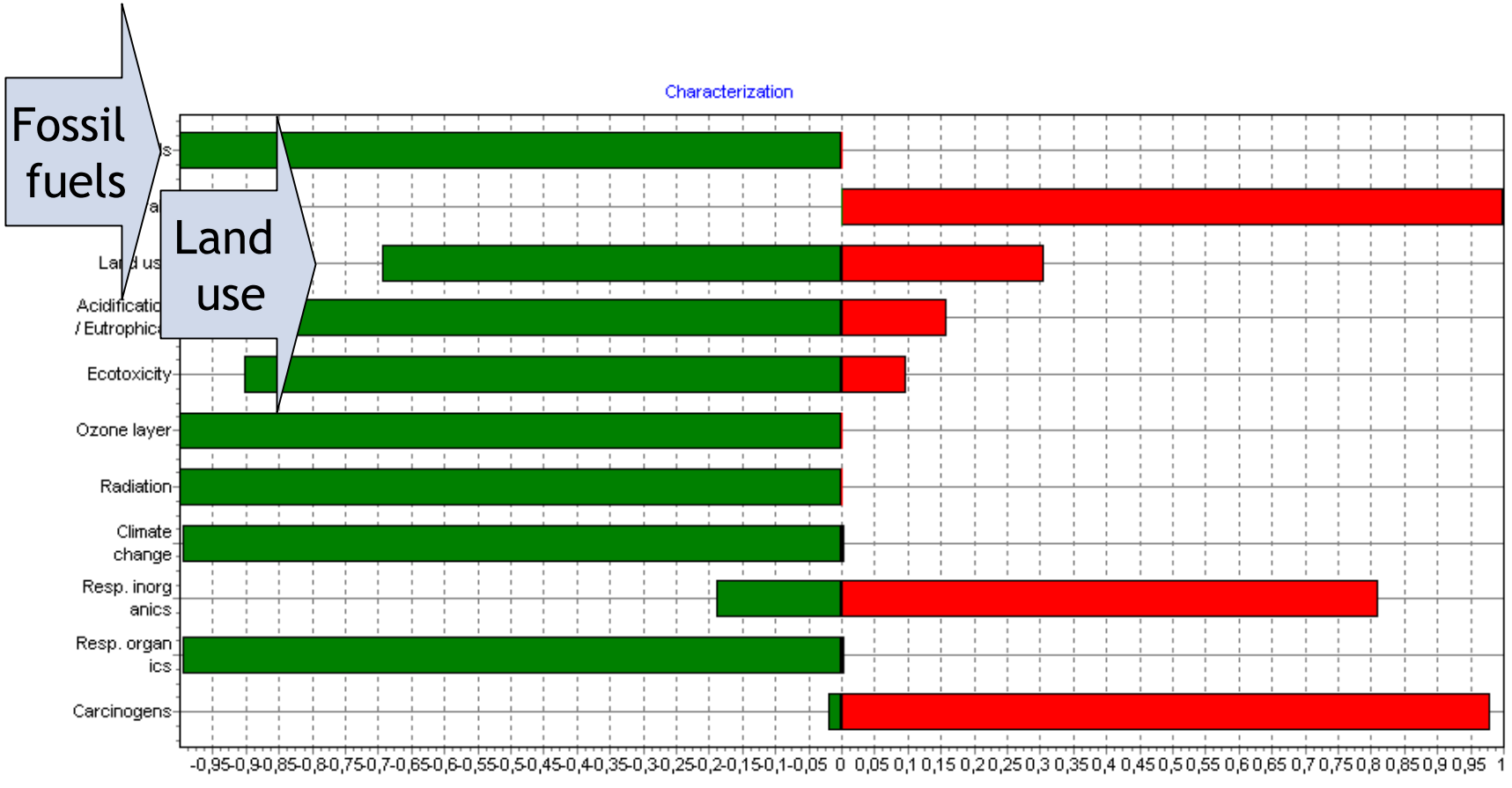

Uncertainty analysis of 1 kg material 'Steel, converter, unalloyed, at plant/RER U',
method: Eco-indicator 99 (H) V2.1 / Europe EI 99 H/A, confidence interval: 95 %

# Comparing Converter and Electro steel (EI99 H/A)



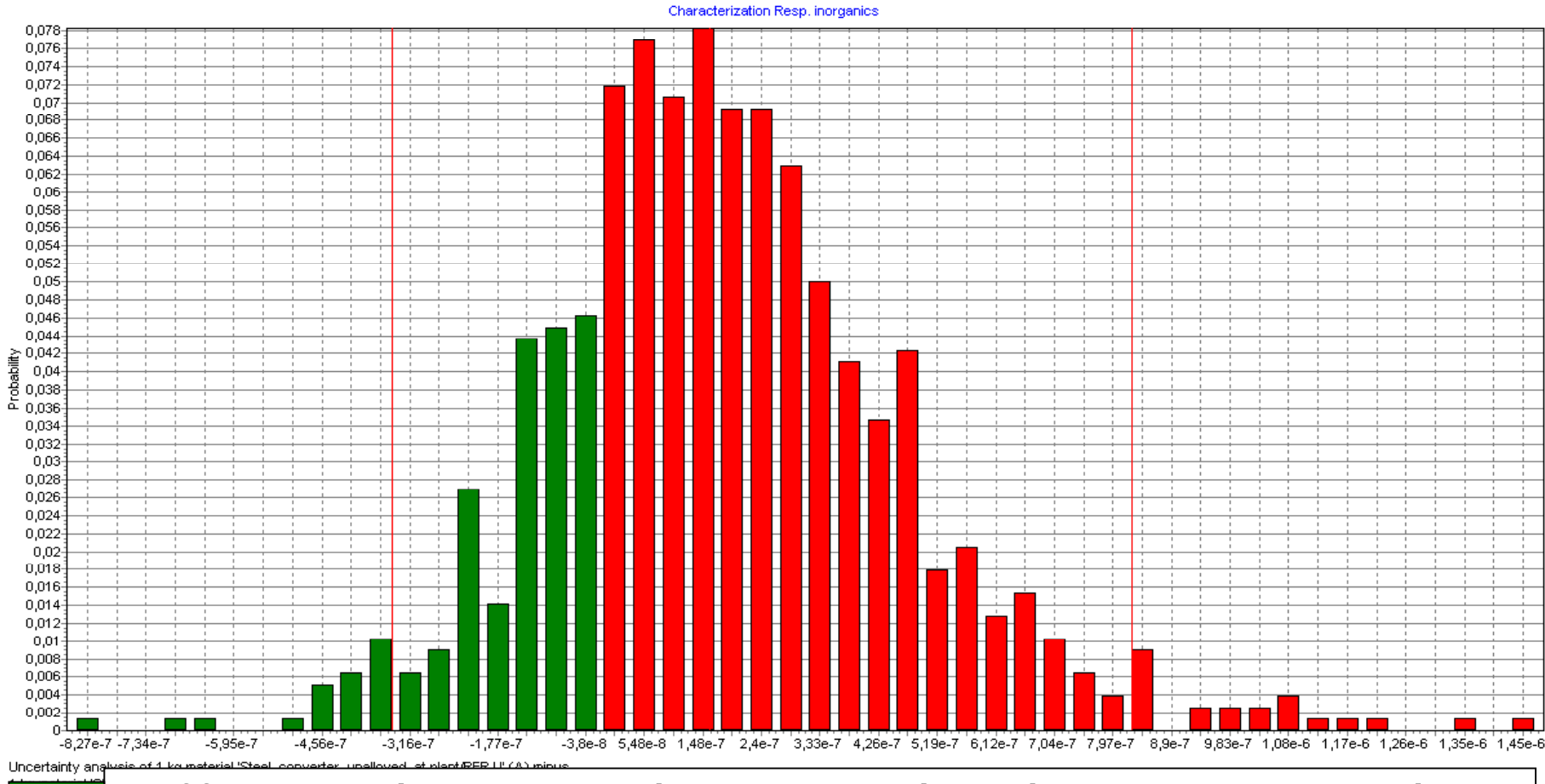

Comparing 1 kg material 'Steel, converter, unalloyed, at plant/RER U' with 1 kg material 'Steel, electric, un- and low-alloyed, at plant/RER U'; Method: Eco-indicator 99 (H) V2.1 / Europe EI 99 H/A / cha

# Comparing Converter and Electro steel (EI99 H/A)




Number of runs where Electro steel has higher load as converter steel

# Difference between Converter and Electro steel (EI99 H/A)




Difference between Electro steel and converter steel is negative

# What we learned

- Implementing a new database format in existing software is very complicated.
- Compatibility with older data is a requirement
- Support was excellent

# What we hope

- Eco-invent project goes on providing new updates
- New changes in format are discussed with software suppliers
- Our wishes
  - More sub category levels
  - Simpler allocation, but include system boundary expansion
  - Real multiple language support
  - Waste scenario's
- Data collection driven by market needs? Can we join forces in market research?