

LCIA Weights to Support Environmentally Preferable Purchasing in the U.S.

InLCA Conference

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Dupont Circle

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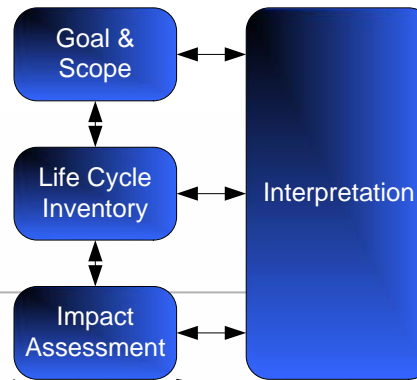
Five Winds INTERNATIONAL

Weight, weight, don't tell me . . .

- All important decisions are subjective
- *Earnest Forman, Expert Choice*



Elements of LCIA



Elements of Impact Assessment

Selection - Determination of relevant impact categories, category indicators, and characterization models

Classification - Assignment of Life Cycle Inventory results

Characterization - Calculation of category indicator results

Normalization - Calculation of the magnitude of category indicator results relative to reference information

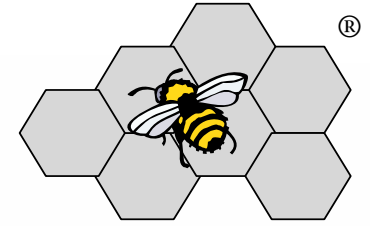
Grouping - Assignment of impact categories to groups of similar impacts

Weighting - Assignment of relative values or weights to different impacts, allowing integration across all impact categories.

Data Quality Check - Analysis of the significance, uncertainty and sensitivity of LCIA results



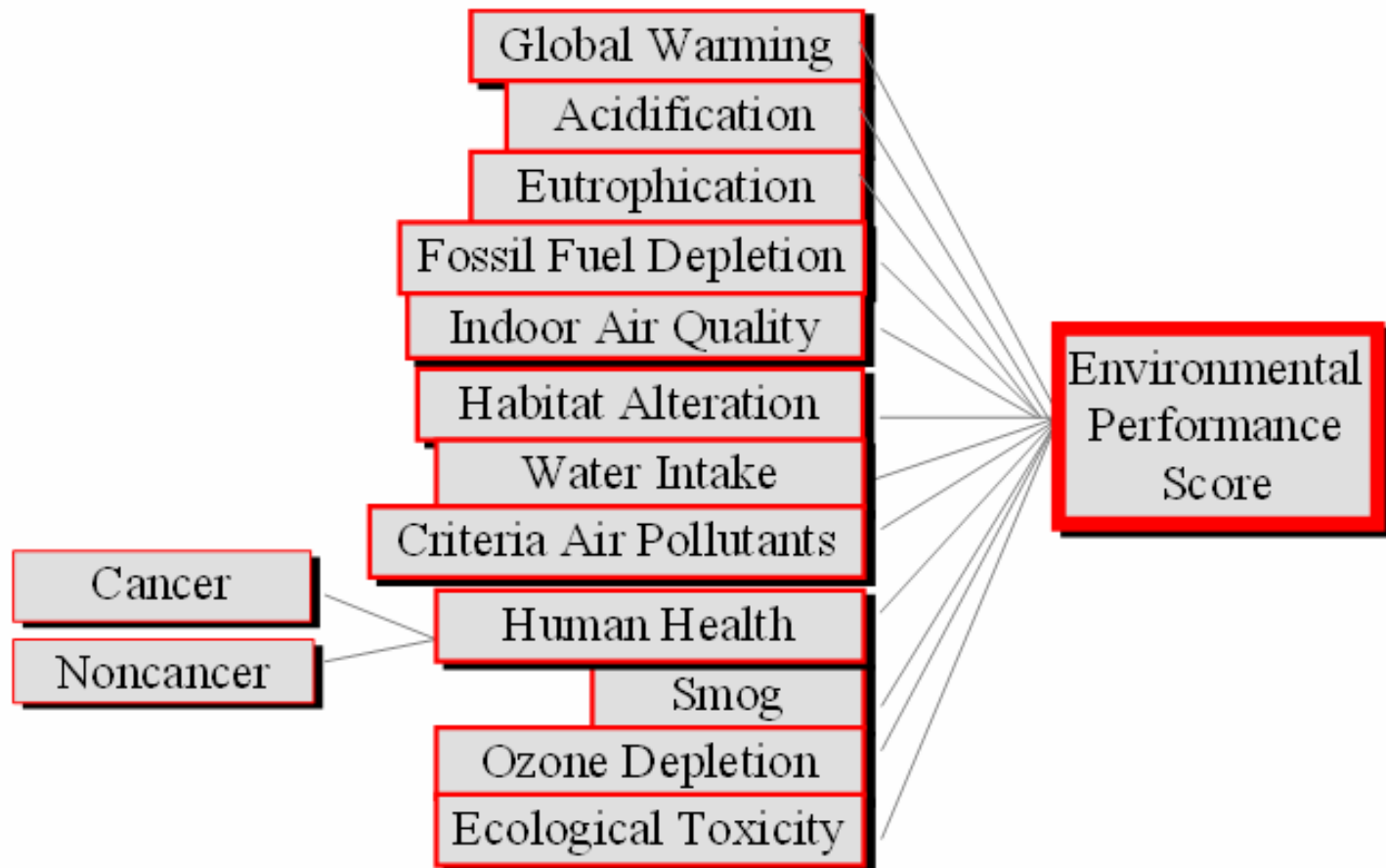
BEES (Building for Environmental and Economic Sustainability) Software



- The BEES software implements a rational, systematic technique for selecting environmentally-preferable, cost-effective building products
- Based on consensus standards and designed to be practical, flexible, and transparent.
- Aimed at designers, builders, and product manufacturers,
- Includes environmental and economic performance data for more than 200 building products across a range of functional applications.
- Environmental performance measures are based on a life-cycle assessment (LCA) approach specified in ISO 14040 standards.
- All stages in the life of a product are analyzed
- Economic performance is measured using the ASTM International standard life-cycle cost method (ASTM E 917)
- Environmental and economic performance measures are combined into an overall performance measure using the ASTM standard for Multiattribute Decision Analysis (E 1765)



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Participants of the Panel Event

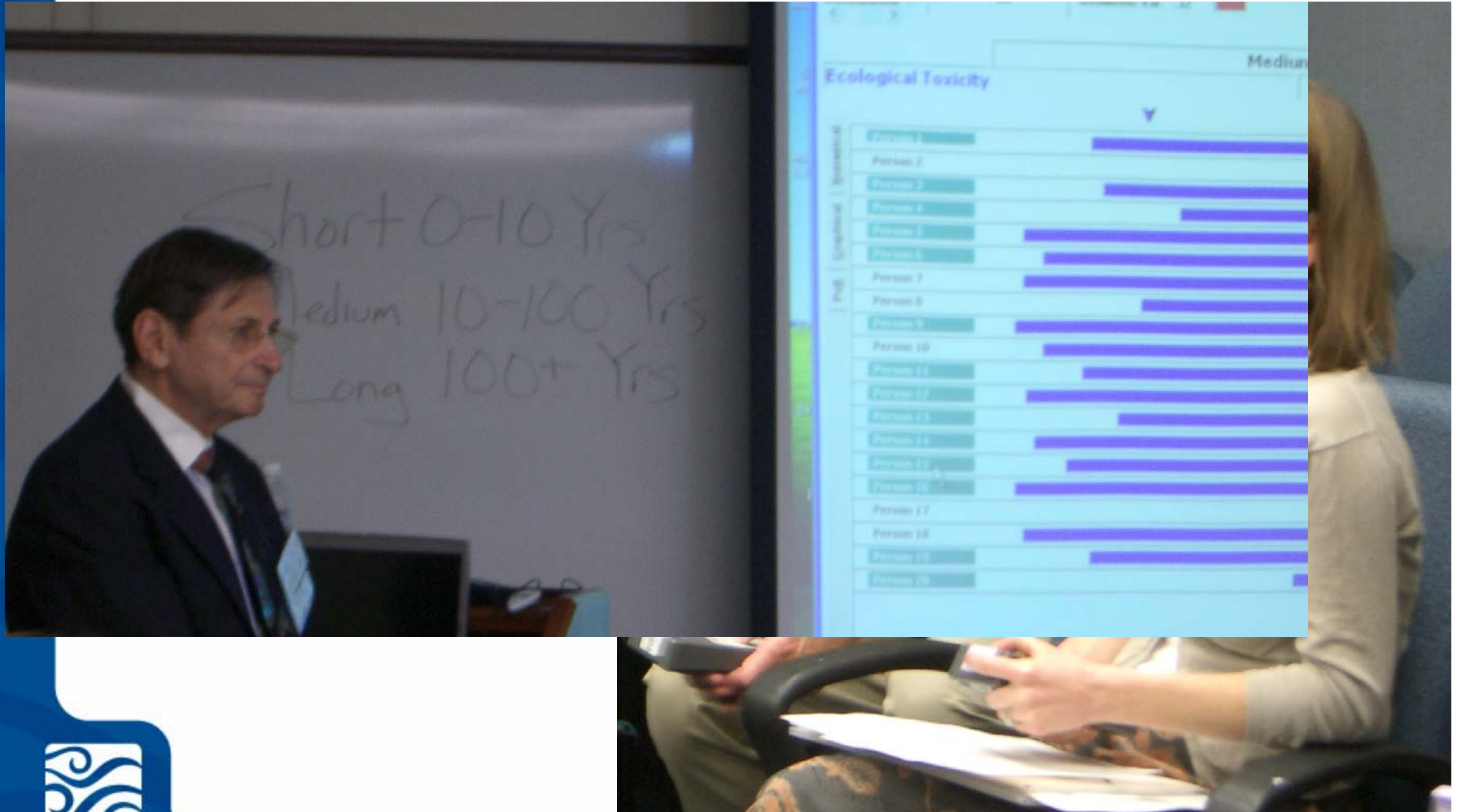
- Producer – An individual who represents an organization that produces or sells building materials, products, systems or services
- Consumer /User – An individual who purchases or represents an organization that purchases or uses building materials, products, systems or services
- LCA Expert – An individual who does not fit into any of the preceding categories *and* is recognized for his/her LCA expertise



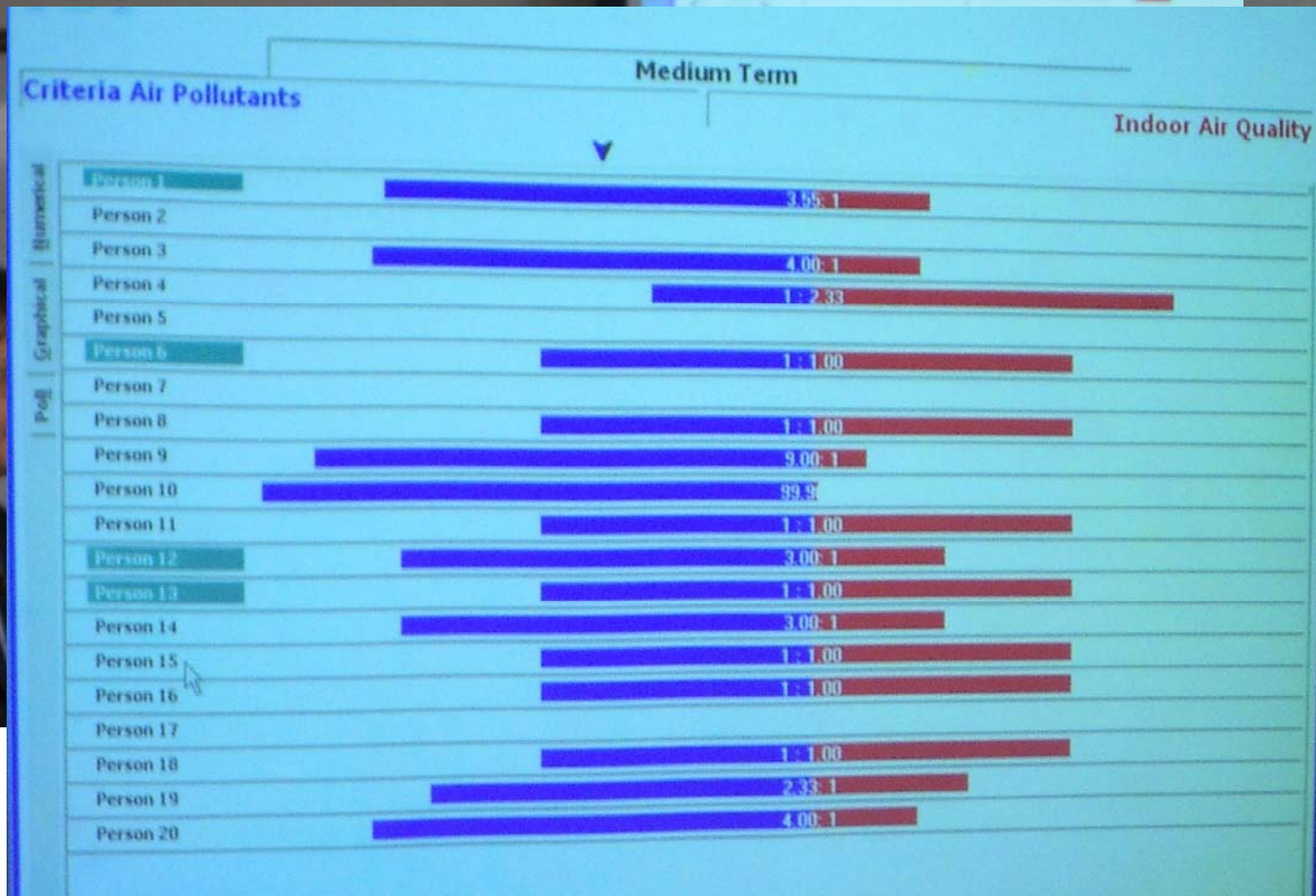
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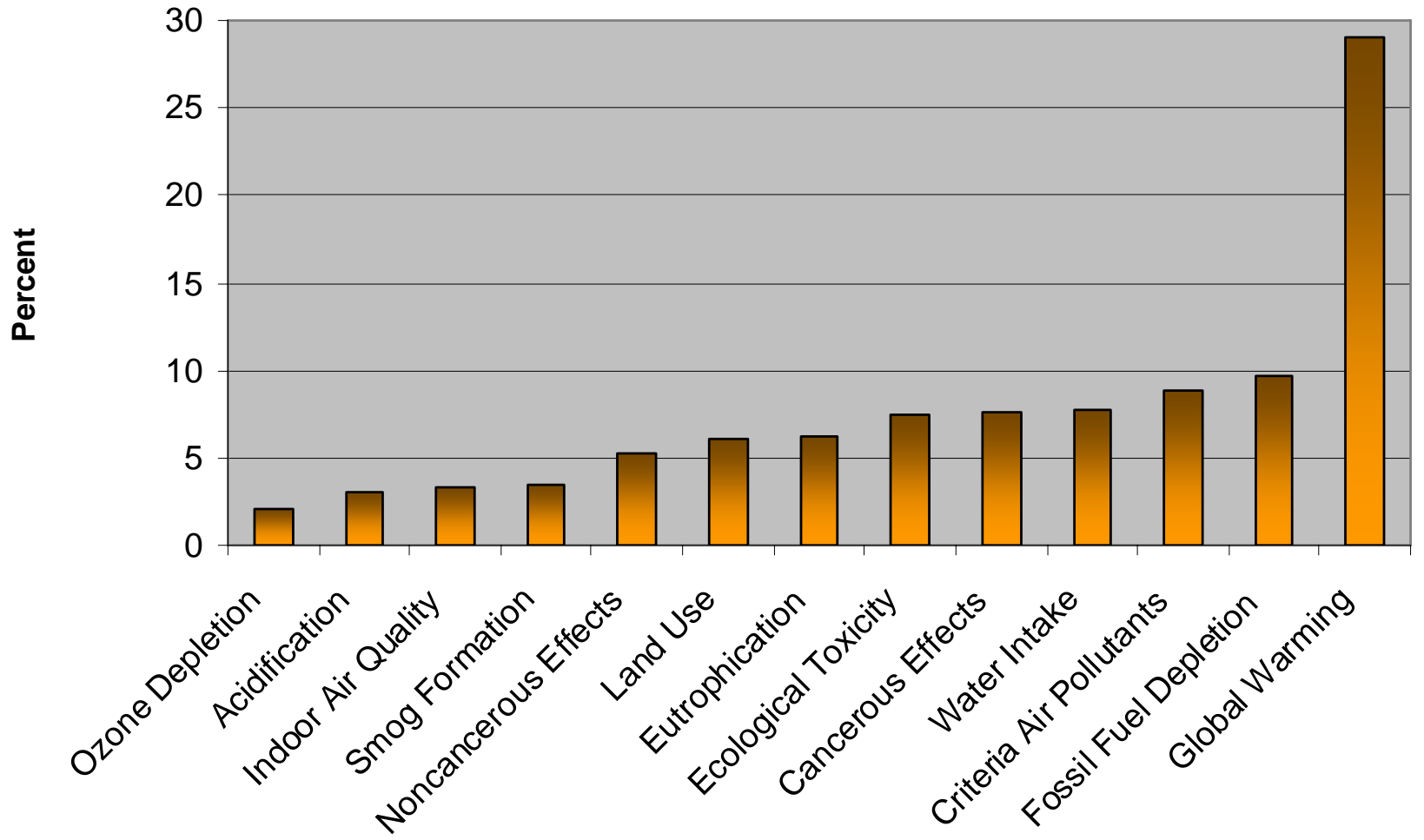
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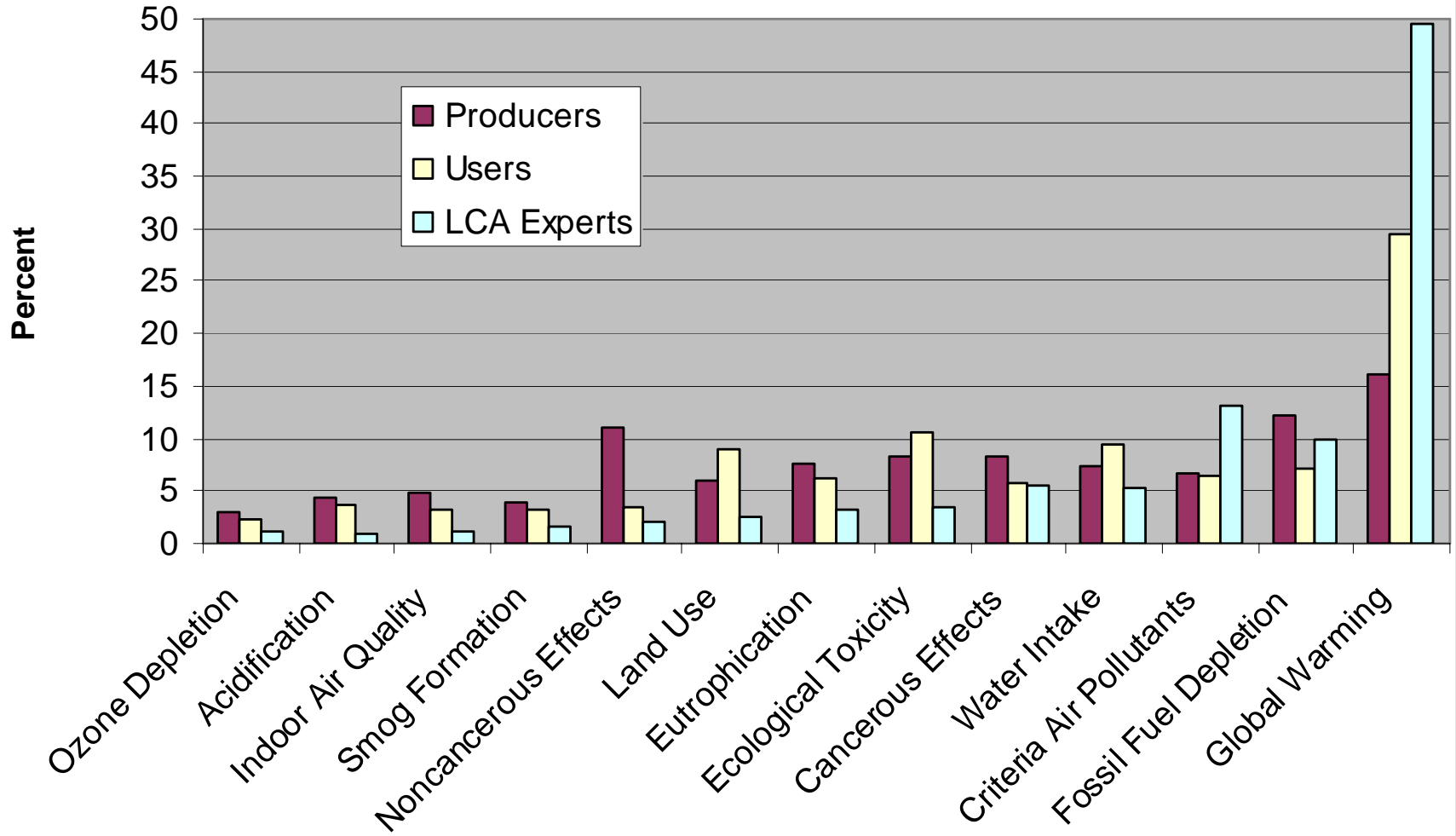
Weight, weight, don't tell me . . .



Weights Synthesized



Weights by Stakeholder Grouping



Comparison to previous weights

| Impact category | | Science Advisory Board | Harvard | Equal | EPP Weights |
|-----------------------------|------------|------------------------|---------|-------|-------------|
| Global Warming | | 16 | 11 | 8.3 | 29.3 |
| Acidification | | 5 | 9 | 8.3 | 3.0 |
| Eutrophication | | 5 | 9 | 8.3 | 6.2 |
| Fossil Fuel Depletion | | 5 | 7 | 8.3 | 9.7 |
| Indoor Air Quality | | 11 | 7 | 8.3 | 3.3 |
| Habitat Alteration/Land Use | | 16 | 6 | 8.3 | 6.1 |
| Water Intake | | 3 | 9 | 8.3 | 7.8 |
| Criteria Air Pollutants | | 6 | 10 | 8.3 | 8.9 |
| Smog | | 6 | 9 | 8.3 | 3.5 |
| Ecological Toxicity | | 11 | 6 | 8.3 | 7.5 |
| Ozone Depletion | | 5 | 11 | 8.3 | 2.1 |
| Human Health | Cancer | 11 | 6 | 8.3 | 7.6 |
| | Non-cancer | | | | 5.3 |



Summary

- The new weight set was created specifically in the context of BEES. It is intended to support environmental preferable purchasing (EPP) in the United States, based on their LCIA results.
- The new weight set was created by a multi-stakeholder panel via the AHP method, and is a synthesis of panelists' perspectives on the relative importance of each impact category in BEES.
- While the weight set may not be perfect, it is valuable because it reflects contemporary values in applying LCA to real world decisions.
- The new weight set offers BEES users a fifth option to select from when comparing the environmental performance of building products and making purchasing decisions, building robustness in the decision-making process.



Weight, weight don't tell me . . .

**Not everything that counts can
be counted.**

**And, not everything that can be
counted, counts.**

- *A. Einstein*



Living Our Values



Five Winds follows a Sustainable Purchasing Policy and offsets the climate impact of all our business travel, office energy use and computer use

