

Is it valid to use international data in New Zealand LCA studies?

Barbara Nebel

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- Introduction
- Methodology
- Case study
- Results
- Conclusions

- LCA
 - ▶ Methodology to analyse environmental impacts over whole life cycle
 - ▶ Takes different environmental impacts into account
 - ▶ ISO standards define methodology

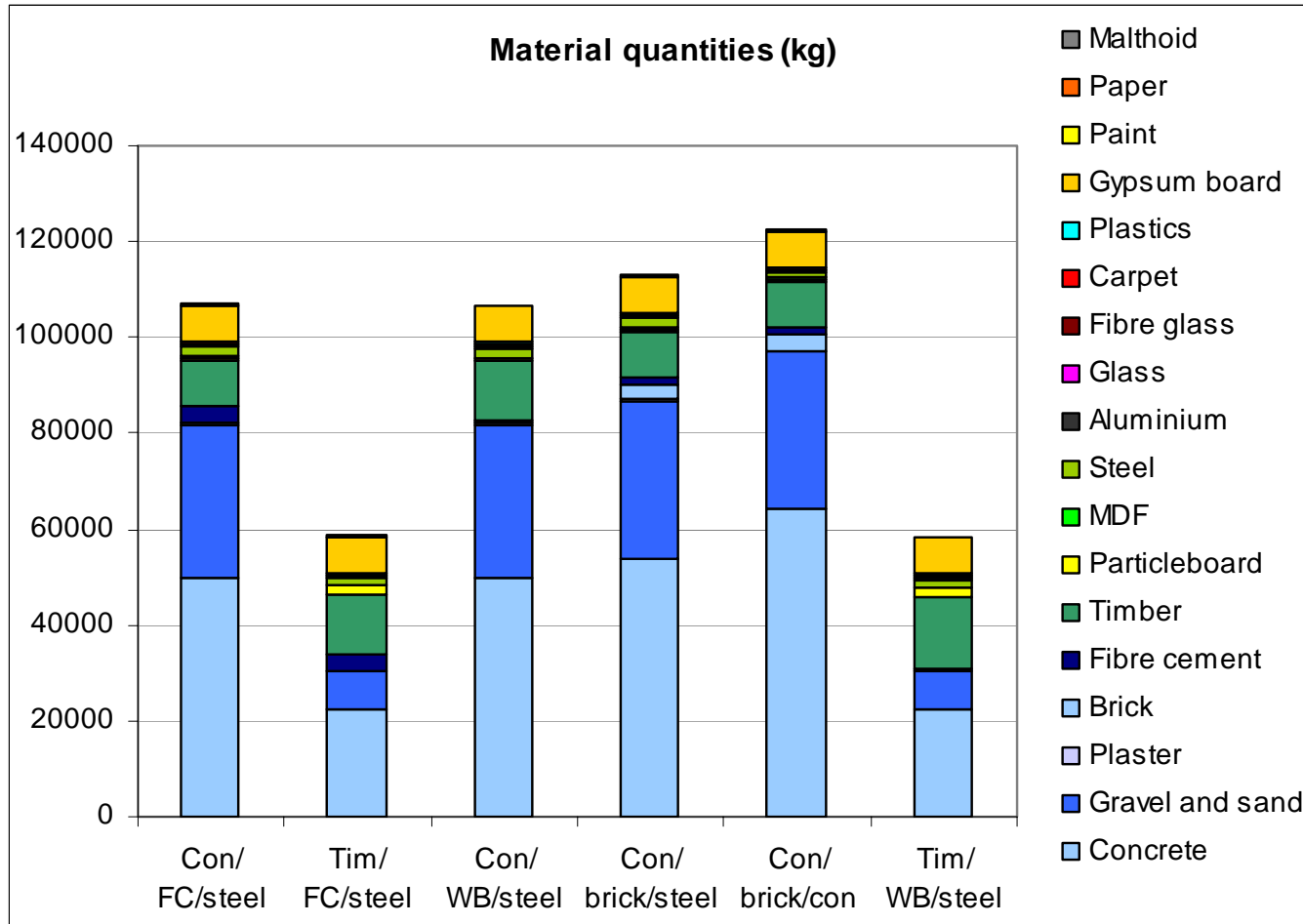
- Uptake in NZ increased over last 5 years significantly
- Building industry
- Primary sectors
- Government (ecoverification strategy)

- Generic data not available (e.g. diesel, electricity)
- Some data on building materials available
- Critical mass?

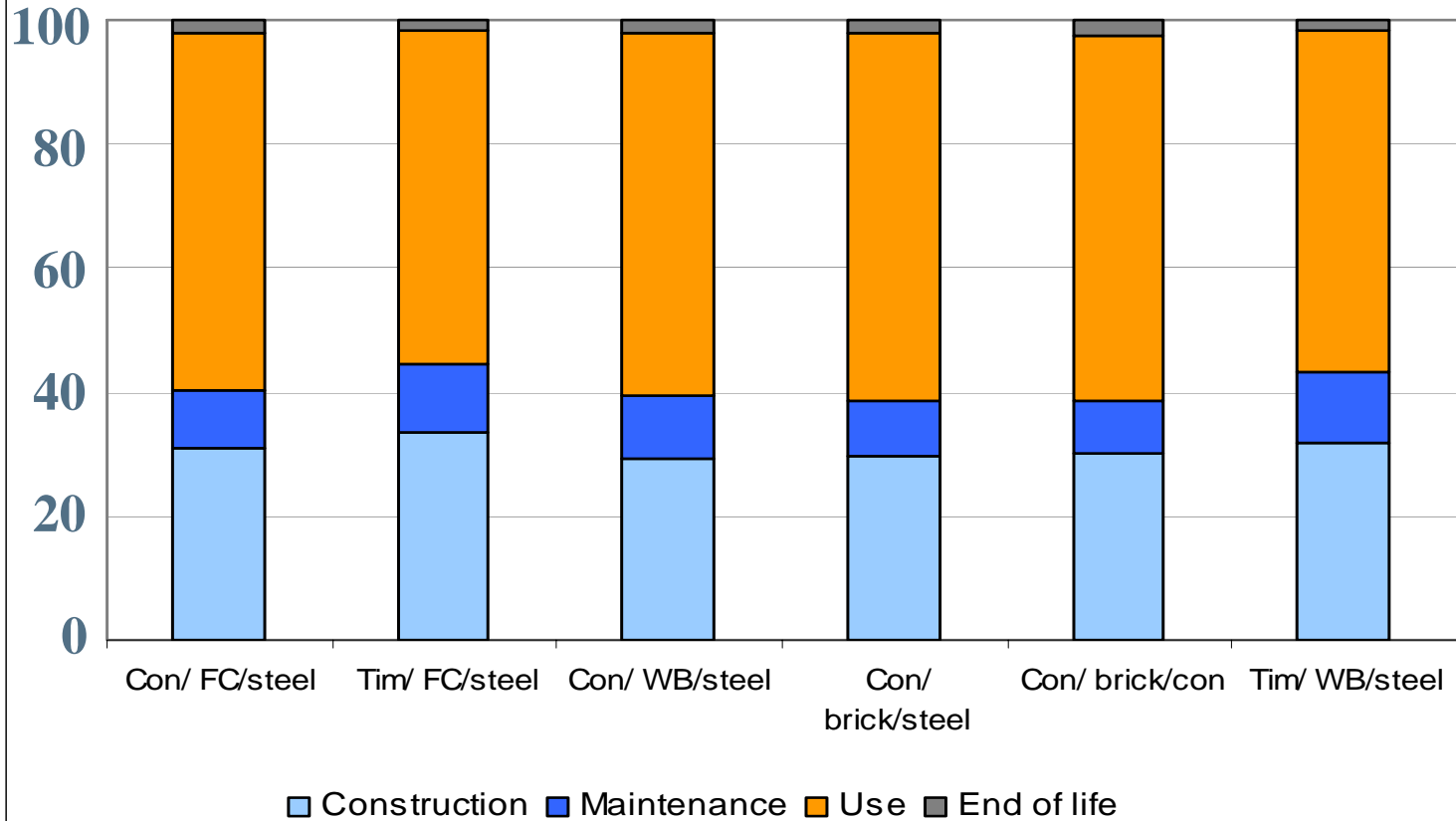
- Test conclusions from existing case study
- Use three different datasets
 - ▶ NZ data (Alcorn 2003)
 - ▶ Ecoinvent data (European, Swiss)
 - ▶ GaBi data (European, German)

- Exemplar house
- 50 years (also 75/100 years)
- Construction only
 - ▶ Operational and end of life included in original study
- Different materials
 - ▶ Weatherboard/fibre cement/brick
 - ▶ Timber floor/concrete slab

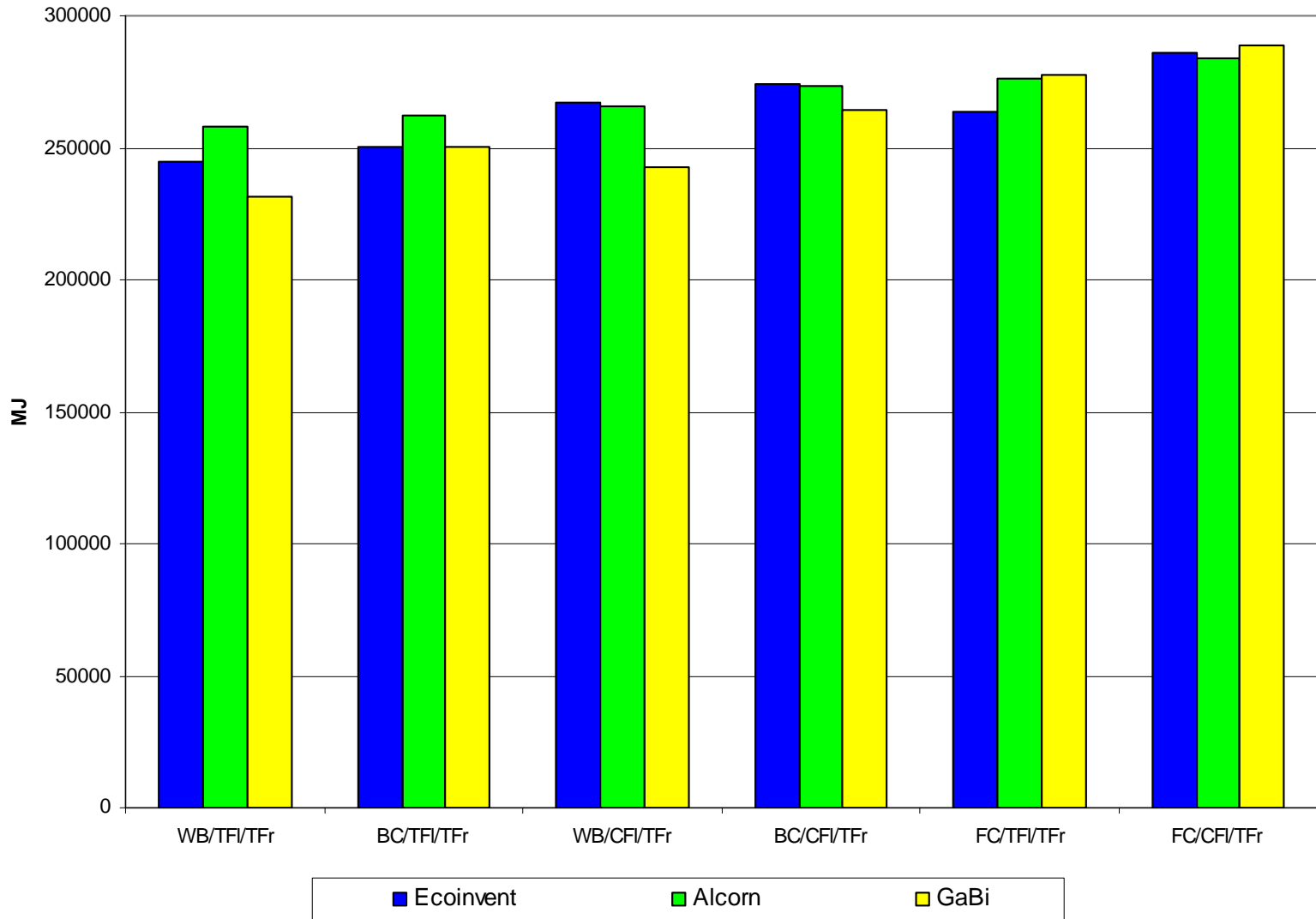
- Analyse embodied and operational environmental impacts
- Compare six design alternatives
- Find the environmental hot-spots
- Develop a generic LCA model for houses

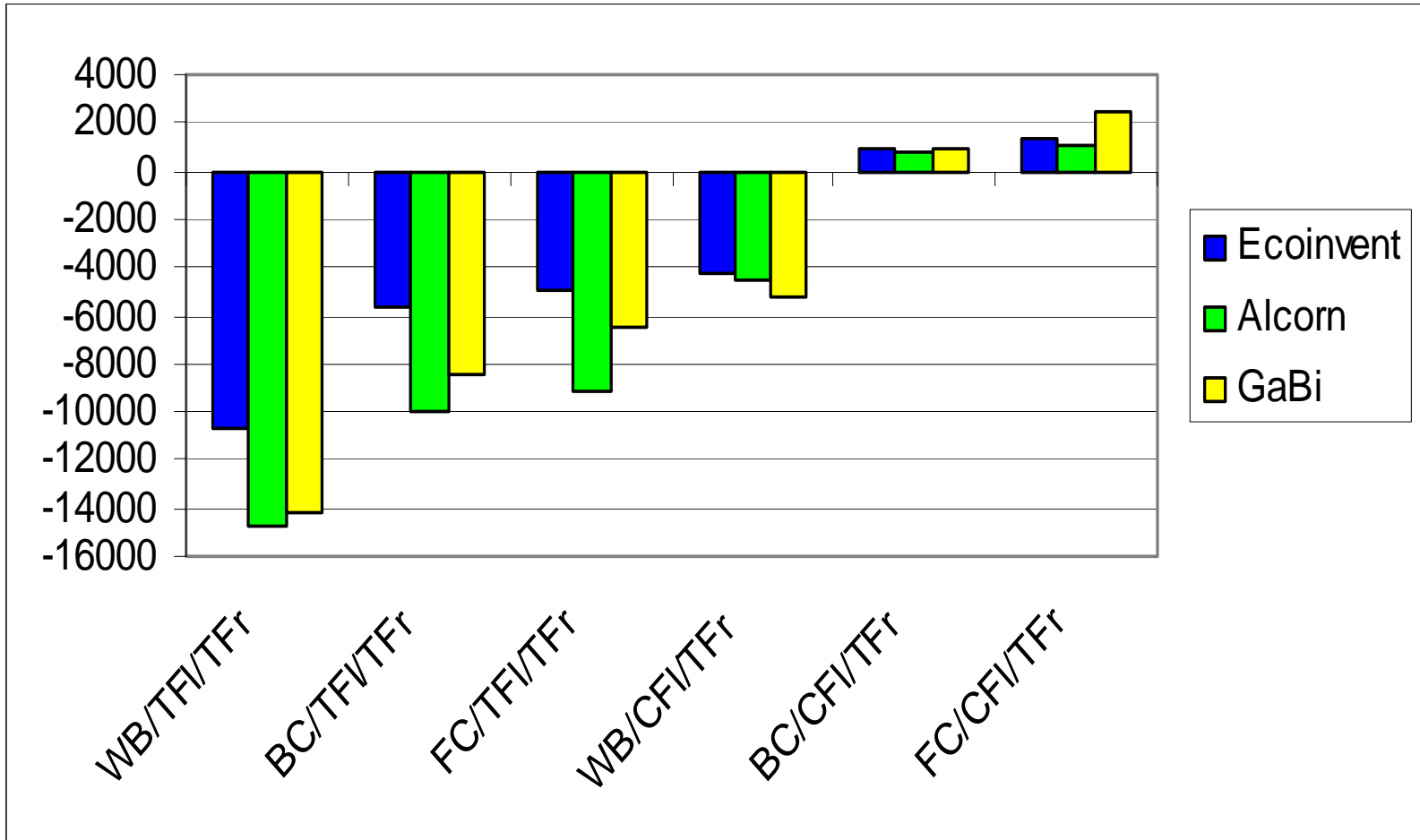


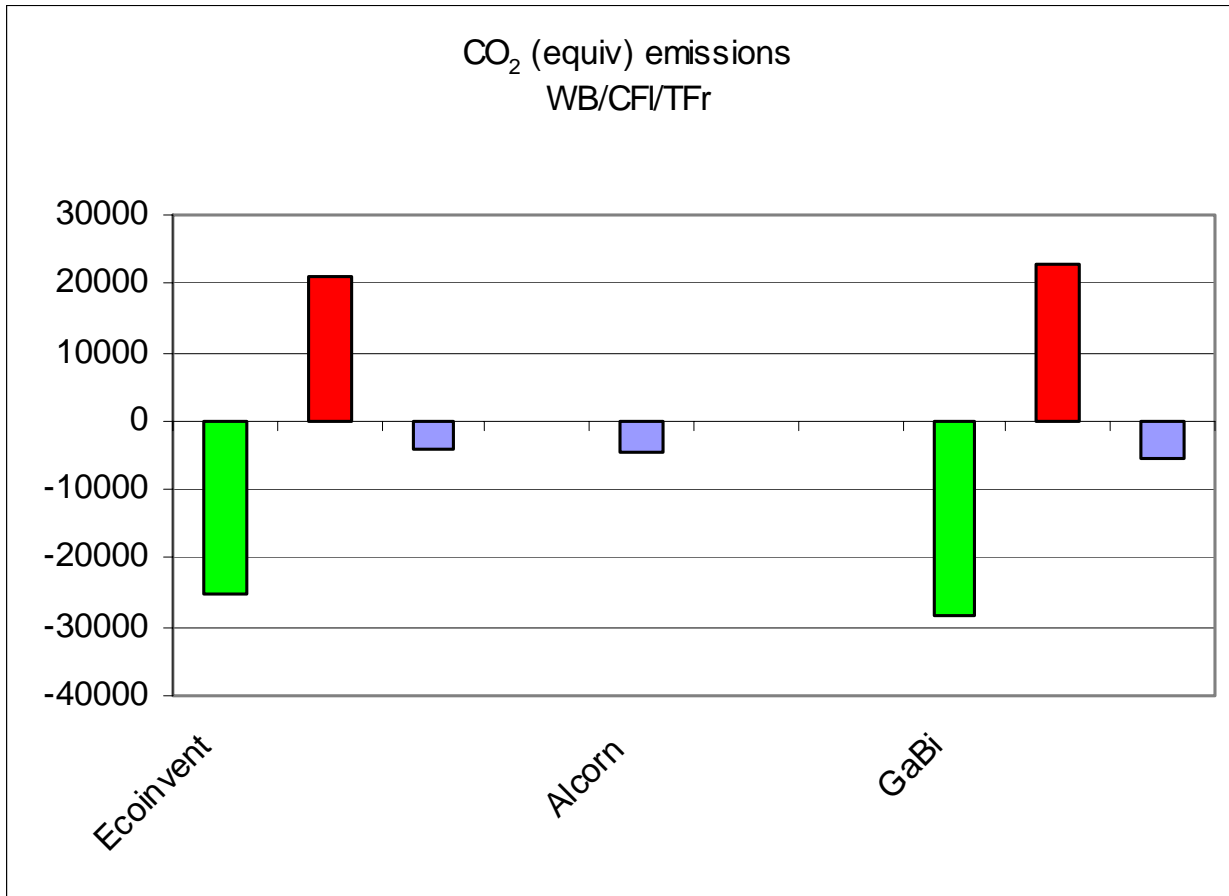
Global Warming Potential (kg CO₂-eq), Wellington electricity



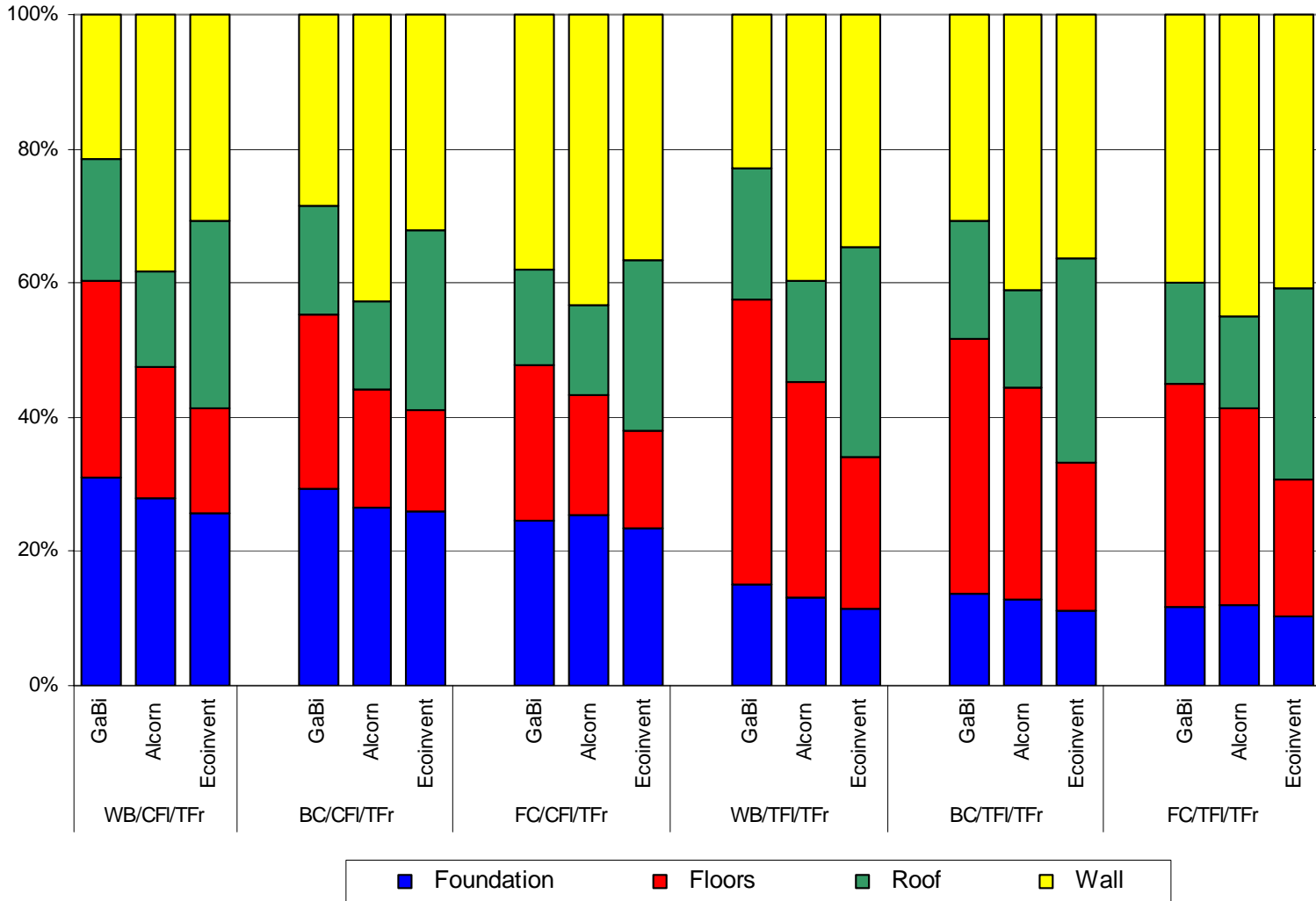
- Ratio of embodied vs. operational impacts
- Comparison of design alternatives
- Analysis of environmental hotspots
- Development of a generic model

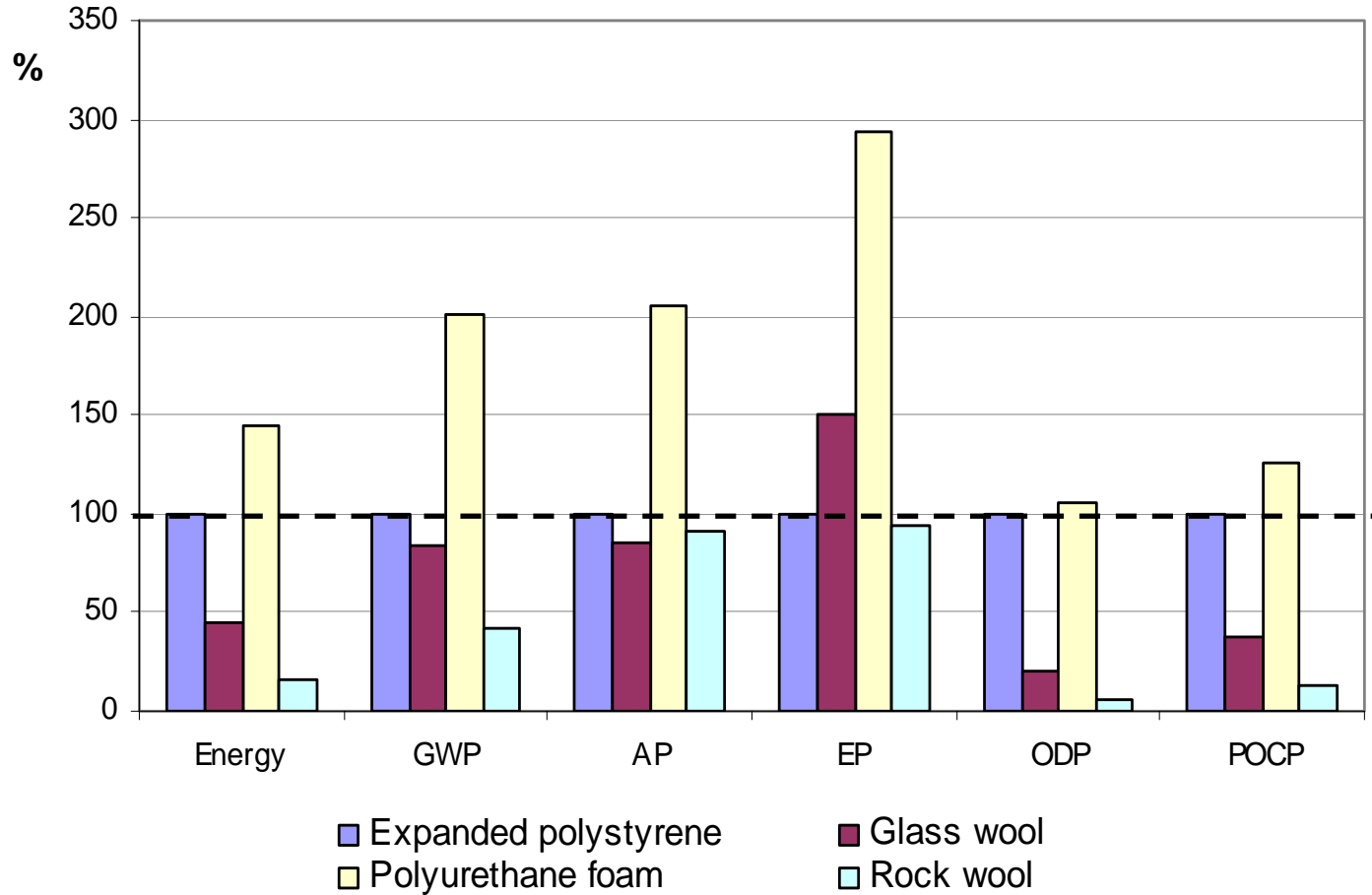






Ranking	Ecoinvent	Alcorn	GaBi
1	A	A	A
2	B	B	D
3	C	D	B
4	D	E	E
5	E	C	C
6	F	F	F





- National data not required if used for
 - ▶ Operational vs. material related impacts
 - ▶ Show importance of materials in general
- National data required if used for
 - ▶ Identification of hot spots
 - ▶ Design recommendations
- Use existing national data as a basis