Testing and SEA methodology in energy policy – a tax on waste incineration

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SEA framework for energy sector SEA

- Swedish Energy Agency 2001-2003
- Applying analytical tools in the context of an SEA process in the energy sector
- Drawing on analytical concepts such as LCA, ExternE, risk assessments etc.
- Establishment of framework
- Case study













valuation against objectives impact valuation societal valuation LCA weighting







Concerns about methods for SEA

- What functions do they provide and to what extent are they fulfilling them?
- In what ways are they able to cover major sustainability concerns?
- Are they transparent and formalised enough to enable peer-review and reproduction?
- Are they likely to be considered valid, relevant and legitimate by different actors?





Case on waste incineration tax

Alternatives in policy proposal

- 0 No tax
- 1 Tax of 400 SEK/tonne
- Additional alternatives
 - 2a Maximise energy recovery
 - 2b Minimise greenhouse gas emissions
- Pathways
 - Qualitative pathway
 - Conventional LCA pathway
 - Site-dependent LCA pathway





Assessment for site-specific air pollution impacts in SEA





Weighting factors in different sites of Sweden









Valuation results: change relative to Alt 0

Change relative to Alt 0







Findings on case study

- Tax likely to lead to overall environmental improvements
- Largely due to a shift in waste hierarchy
- Regional differences in pressures and impacts balance out
- Improvements are small compared to potential





Findings on methods

- 1. Qualitative surprisingly effective for raising awareness at generic level
- 2. LCA shows critical aspects of the system
- 3. Site-dependency helped understand absolute risks and regional considerations
- Complementary rather than competing functions, but a hierarchy emerged
- Issue coverage very different from method to method
- Coverage negatively correlated to precision
- Qualitative assessments often needed as a complement





Findings on methods

- Analytical styles are very different
- Validity and relevance for decision actors is key for choice of method and process
- Policy debates beyond awareness are best supported by 'hard data'
- Validity is tricky in all methods and often conflicting with relevance (e.g. coverage vs precision)
- Dominating frames and perspectives on the assessment role is best departure point for methods selection





Further info

Måns Nilsson^{*}, Anna Björklund, Göran Finnveden, Jessica Johansson *Testing an* SEA methodology for the energy sector - a waste incineration tax proposal', Environmental Impact Assessment Review forthcoming 2004

Björklund, A., Johansson, J., Nilsson, M., Eldh, P. and Finnveden, G. (2003): *Environmental Assessment of a Waste Incineration Tax. Case Study and Evaluation of a Framework for Strategic Environmental Assessment.* fms-rapport 184. FOI, Stockholm. Full report

available on www.infra.kth.se/fms