

Concerns of Stakeholders

MAXIMA Workshop, Brussels 9 December 2005

Mike Holland, Rainer Friedrich, Ari Rabl

Categories

- Typical vs site-specific results
- Uncertainty and Gaps in ExterneE Results
- Valuation
- Concerns about Specific Energy Carriers
- Uses of ExterneE

Typical vs site-specific results

Concern:

The results of ExterneE are for specific installations and not appropriate for policy choices that require typical results

Response:

Results depend on **site** and **state of the technology**, as always emphasized by the ExterneE team.

Before 2004 most of the results were indeed for specific installations, but **since 2004 ExterneE** also provides **typical results** for each country and for LCA applications.

Uncertainty & Gaps in ExterneE, 1

Concern:

The **uncertainty** of ExterneE estimates is **very high**, maybe too high to be useful.

Response:

- 1) Better $1/3 \times$ to $3 \times$ than 0 to ∞
- 2) What matters is not the uncertainty itself, but the **social cost of a wrong choice**:
 - a) Without cost estimates such costs can be very large, but **with ExterneE they can be remarkably small** in many if not most cases.
 - b) For many yes/no choices the uncertainty is small enough not to affect the answer.
- 3) Uncertainties **can be reduced** by a) **research** and b) **guidelines** by decision makers **on monetary values**

Uncertainty & Gaps in ExterneE, 2

Concern:

The estimated uncertainties are often not well-reflected in results; sometimes only a single-value is cited or used.

Response:

Complex information is more difficult to communicate and to use than simple numbers. ExterneE provides detailed information on uncertainties.

Uncertainty & Gaps in ExterneE, 3

Concern:

Not all damages have been monetised, and some of the non-monetised damages are important.

Response:

These non-monetised damages need to be mentioned when reporting results. However, more and more of the gaps can be closed by further research.

Concern:

Not all damages are monetisable (at the present time).

Response:

Use multicriteria analysis, formally or implicitly.

Concerns About Specific Energy Carriers: nuclear

Concern:

Is the risk of a nuclear accident evaluated correctly?

Response:

Who can agree on “correctly”?

Someone who does not agree can modify the assumptions of ExterneE or do an alternative analysis.

Concern:

What about nuclear proliferation, and nuclear security against terrorism?

Response:

Beyond the scope of ExterneE.

Use multicriteria analysis.

Concerns About Specific Energy Carriers: **nuclear**, cont'd

Concern:

Are long-term effects of nuclear power treated adequately, e.g., waste storage, land contamination?

Response:

Problem of scenarios for future management of waste facilities. ExterneE has case studies.

Concern:

Why wasn't a Chernobyl-type plant included, versus just modern nuclear plants?

Response:

Not relevant for new power plants.

Note: ExterneE nuclear results are for plants operating during mid 90s; should be updated for next generation.

Concerns About Specific Energy Carriers: renewables

Concern:

Current ExternE estimates of renewable costs do not reflect the latest state of technology.

Response:

Some of the earlier results were based on older LCA data, but now **ExternE uses the most up-to-date LCA** database (Ecoinvent). Ecoinvent is based on technologies of 2000.

New PV costs even lower than the numbers of ExternE 2004.

Concern:

Current ExternE estimates do not take into account the potential of technological progress.

Response:

One needs prospective LCA. Such data are not generally available, but new projet (NEEDS) will provide estimates.

Concerns About Specific Energy Carriers: heating

Concern:

- Electricity is not the only energy used, so it can be misleading to internalise only its costs, e.g. what about coal-burning in the home?
- How should the potential benefits of energy efficiency be included?
- What about district heating?

Response:

Heating has been **evaluated** in the ExternE-Pol phase of ExternE (2002-2004).

Valuation, 1

Concern:

Should mortality valuation be based on VOLY (Value of a Life Year) or VPF (Value of Prevented Fatality, also known as Value of Statistical Life)?

Response:

VPF is based on accidents (large loss of life expectancy per death), not appropriate for air pollution.

ExternE calculates **loss of life expectancy** × **VOLY**

Valuation, 2

Concern:

How should fact be distinguished from ethics?

e.g. How should damages caused by pollution generated in one country but transported into another be evaluated?

Response:

This is a difficulty for global warming. ExterneE has provided several estimates of damage cost, for different assumptions about other countries and far future (discounting).

Valuation, 3

Concern:

- Damage costs for **carbon dioxide** have recently be estimated at $2.4\text{€t}_{\text{CO}_2\text{eq}}$, but **now ExterneE uses $19\text{€t}_{\text{CO}_2\text{eq}}$** .
- How should ability to adapt be balanced with type & severity of effect?
- The range of costs that ExterneE has used for CO₂ damage is very wide. How can results from studies using different input values be compared?

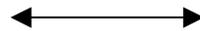
Response:

- The damage cost of global warming is **extremely difficult to estimate**. Recent publications and the $2.4\text{€t}_{\text{CO}_2\text{eq}}$ of ExterneE (2000) include adaptation and benefits.
- One needs sensitivity studies (e.g. for VPF and discount rate).
- $19\text{€t}_{\text{CO}_2\text{eq}}$ is well within range of published estimates, and it is the abatement cost of CO₂ in the EU because of commitment to Kyoto Protocol.
- New work will be done on this in the NEEDS project.

Uses of ExternE, 1

Most of the concerns expressed at the stakeholder workshops were about the uses of ExternE, rather than its methodology or results. Note different domains of expertise:

ExternE Team



Stakeholders

Methodology and results *Application studies*

Implementation

Examples of concerns:

- ExternE does not address the flows of money recovered by internalisation instruments
- Overall, one has the impression that internalising external costs is used when it is convenient, but forgotten when not convenient.
- The problem is less the calculation of cost, than how to implement it in policy.”

Uses of ExterneE, 2

- If external costs are internalised only in some countries or sectors, the competitiveness of these sectors suffers. This would deter implementation.
- What components should be internalised, and how?

Response:

The internalisation should be as complete as possible, covering all activity sectors and countries.

Concern

- Large-scale conventional energy production have benefited from decades of subsidizing policies, with newer technologies thus put at disadvantage.

Response:

Sunk costs are not relevant for decisions about future.

Uses of Externe, 3

- Most of **global climate change** impacts are predicted to occur in **poor countries**. On what rationale should wealthier countries respond, e.g. by limiting GHG emissions?

Response:

Externe has done sensitivity studies for this.

Concern

- Externe provides information that can be used to guide levels used in internalisation instruments. However, policymakers would look at things from the other direction, e.g., “if we increased tax by X%, what would be the benefits & their distribution” ...

The policymaker starts with the instrument.

- The problems need to be discussed from a top-down perspective, not only a bottom-up one. How should expenditures be allocated? Where can this be discussed on a European level?

Uses of ExterneE, 4

ExterneE provides a great deal of information. **Different** types of **information** are relevant for **different policy choices**.

Examples:

Policy choice	Information from ExterneE
Emission limits, pollution taxes, tradable permits	External cost for each source and each pollutant
Public choice of technologies, e.g. coal, gas or nuclear	External costs, all LCA stages
Dispatching of existing power plants	External cost for each plant
Green accounting	External cost, all emissions