

Other impacts and the way ahead

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Other impacts

*not yet adequately quantified by ExternE
because of lack of information or because too problematic:*

- Acidification and eutrophication
- Reduction of visibility
- Visual intrusion
- Employment
- Depletion of resources
- Noise due to transport
- Land use
- Some impacts of micropollutants, especially those that pass through the food chain (above all Hg)
- Storage of waste
- Nuclear proliferation and risks of terrorism

Other impacts:current situation

Acidification and eutrophication:

In 2003: a first rough estimate of damage costs based on WTP of decision makers (the damage costs are a few % of the total)

In progress in 2004: estimates by experts, elicited via multicriteria analysis

Reduction of visibility:

Large cost in the USA, but *so far no estimates for EU*

Visual intrusion:

Extremely site specific

Noise due to transport:

Work in progress

Depletion of resources

To what extent is it an externality?

So far not taken into account by ExternE

Other impacts:current situation, cont'd

Employment:

Already fully internalized? Would need complicated analysis of entire economy

So far not taken into account by ExternE

Land use:

Probably the most serious impact on ecosystems and biodiversity (biodiversity decreases if size of an ecosystem is reduced, e.g. if it is cut by a road)

So far not taken into account by ExternE

Storage of waste (nuclear and conventional):

The problem: damage **depends on future management** of storage, with new technologies leakage during the operation of the facility are negligible, but what will happen in the future?

⇒need scenarios

Other impacts:current situation, cont'd

Nuclear power

Very low damage costs (lowest of all except wind and for some sites hydro)

but ...

Risks of nuclear proliferation and terrorism:

Temptation to increase profit and economies of scale by selling the technology to countries that lack sufficient safeguards (the link nuclear power -> military is undeniable)

Risks of major nuclear accident:

Extremely small with new technologies, but ...?

Long term storage of waste:

No problem as long as storage site is supervised. But is our society stable enough in the long term?

Alternative to estimation of cost: multicriteria analysis (MCA)

For the problematic impacts:

Describe the impact, with as much quantification as possible, but then let decision makers use MCA

In any case, a **policy decision should not be reduced to a simple comparison of costs and benefits:**

Too much uncertainty, too many considerations that defy quantification in terms of costs

The Precautionary Principle

It is only a general guideline, without advice for specific problems

(the frequently invoked argument: “absence of proof of a risk is not proof of absence” is very misleading because absence of proof is the only evidence we can ever have for absence of a risk)

Needs to be used with a great deal of precaution, to avoid unexpected consequences (“countervailing risks”)!

e.g. Overestimating risks of nuclear implies increased global warming and conventional pollution

Overestimation of mortality costs of pollution implies increased mortality through indirect impacts (“poverty kills”)

We need **expectation value of damage costs**, except for cases where valuation is very non-linear function of damage (e.g. very large accident)