# Estimating external costs of electricity production: dialogue with industry

Non-monetised Impacts

by

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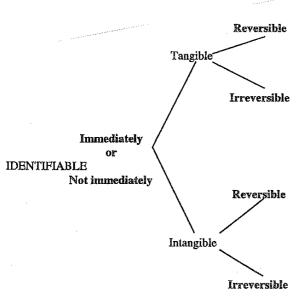
- Why evaluate non-monetised impacts (NMIs)?
- What are some NMIs?
- What can we do to evaluate NMIs to bring them into the decisionmaking process?

Why do we need to deal with NMIs?

- To include the impact of externalities (primarily environmental and social costs) within the framework of cost/benefit analysis
- To support development of mechanisms to internalise external environmental and social costs (e.g. polluter pays)

- Why can NMIs not be quantified, or accurately monetised?
- Irreversibility of some damage
- Synergies among pollutants
- Existence of thresholds
- Phenomenon of amplification
- Yet-to-be-discovered biological mechanisms





#### **EXAMPLES OF NON-MONETIZABLE IMPACTS**

Vibration. Minor acidification. Food shortages. Lowered quality nutrition. Overdensification of population. Overfishing and hunting. Accidental flooding. Diseases. War for security of supply. Acts of God.

Loss of land for power plants reservoirs and roads. Displacement of populations. Damages to historic sites. Routine pollutions and radioactivity. Desertification. Poisoning of soil and water tables. Acidification. Mountain erosion. Wrong chemical synergy. Rupture of dam. Epidemics. Famines. Resource collapse. Nuclear accident. Loss of biodiversity.

Minor damage from noise. Unpleasant smells. Radio interference (wind power). Loss of national independence, of intrinsic and aesthetic value. Diminished system resilience. Accidents. Environmental stress from unknown damaging synergies. Degradation of environment services. Loss of amenity. Human stress.

Nuclear proliferation. Loss of option value and non-use value. Disappearance of traditions. Degradation of the Global Commons. Loss of environmental services. Death of lakes. Accelerated entropy increase. Hearing loss. Climate change. Knowledge of the disappearance of species and human cultures.

#### NOT IDENTIFIABLE

\* Some of the impacts listed here may be compensable damages (i.e.monetizable impacts) via insurance schemes or premium salaries

Table 13.1 Tentative typology of non-monetizable negative external impacts of energy (NMIs) by level of knowledgeability



Timeframe	Local Problems	Regional Issues	Global Threats
Short Term (< 1 year)	Flooding	Famines, acidification, pollution of aquifers	Ozone depletion
Medium Term	Erosion, epidemics, forest degradation	Habitat destruction, accidental releases	Climate perturbations, resource depletion
Long Term (100 years)	Excessive population density	Desertification, disposal of nuclear wastes	Biodiversity loss, climate change



Evaluation and internalisation of NMIs

- The technical approach
- The institutional approach