Ethics and Decision Making in Green Product Design: Business, Science, and Policy Perspectives
ESPM 290 and MBA 296.1A (CCN 30165)

Class 6: The Public Ethics of Greening Chemistry

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February 29, 2012
**Prevailing Welfare Maximization Decision-Making Structure**

Economic actors are free to pursue activity, even if it causes damage to human health and the environment, unless Government (or plaintiffs) can carry their burden of proof to demonstrate that harm can be avoided by regulations that have net benefit (i.e., pass a cost-benefit test).

**Exhibit A: Presidential Executive Order 12866**

“Regulatory Planning and Review” (58 FR 51735; October 4, 1993) §§ 1(a), 1(b), 1(b)(6): requires federal agencies to justify rules using cost-benefit analysis wherever statutes permit.
Law Promotes Activity Unless It Is Proved Not To Have A Net Benefit

Benefits, Net Benefits And Costs Grow Forever
Cumulative Environmental Costs Can Surpass The Earth’s Ecologically Sustainable Limits

- Benefits
- Ecologically Sustainable Limits
- Legally-allowed Environmental Damage

Time

When an activity raises threats of harm to human health or the environment, precautionary measures should be taken even if some cause and effect relationships are not fully established scientifically.

In this context the proponent of an activity, rather than the public, should bear the burden of proof.

The process of applying the Precautionary Principle must be open, informed and democratic and must include potentially affected parties. It must also involve an examination of the full range of alternatives, including no action.
Elements of the Precautionary Principle

1. Preferentially avoids threats of harm to human health or the environment.

2. Acts on early warnings of harm even if some cause and effect relationships are not fully established scientifically.

3. The proponent of an activity, rather than the public, should bear the burden of proof.

4. The process of applying the Precautionary Principle must be open, informed and democratic, must include potentially affected parties.

5. It must also involve an examination of the full range of alternatives, including no action.
New Decision-making Structures

1. Safety standard: move from cost-benefit test to health/technology standards

2. Burden of proof: Switch from government to industry

3. Level of certainty required: move from definitive evidence to acting on early warnings
Registration, Evaluation, Authorization and Restriction of Chemicals (REACH)

- Went into force June 1, 2007
- First deadline December 1, 2008 (pre-registration)
- Europe’s response to a similar situation as ours
Authorization

First Step: Identify Substances of Very High Concern (SVHC)

a) Carcinogenic
b) Mutagenic
c) Toxic for Reproduction
d) Persistent, Bioaccumulative and Toxic
e) very Persistent and very Bioaccumulative
f) Substances of equivalent concern (e.g., EDC’s)

Process to place on Annex 14 SVHC list
Authorization

Second step: Apply for Authorization

Manufacturers apply for use-specific authorization and must show:

a) “Adequate control” (cannot claim “adequate control” for PBT, vPvB, or if cannot establish no-effect threshold); or

b) Socio-economic benefits outweigh the risk to human health or the environment arising from the use of the substance and there are no suitable alternative substances or technologies
New Chemicals Policy in California

California EPA Green Chemistry Initiative

- Expand Pollution Prevention
- Develop Green Chemistry Capacity
- Create an Online Product Ingredient Network (SB 928)
- Create an Online Toxics Clearinghouse (SB 509)
- Accelerate the Quest for Safer Products (AB 1879)
- Move Toward a Cradle-to-Cradle Economy

SB 509 (Simitian): Create an Online Toxics Information Clearinghouse

AB 1879 (Feuer): Accelerate the Quest for Safer alternatives

Safe Chemicals Act of 2011

Requires EPA to establish mandatory minimum data set and authorizes EPA to require additional information if necessary

Requires EPA to prioritize chemicals based on likely risk, volume, uses, toxicity, persistence, bioaccumulative potential

Requires expedited action on prioritized chemicals

Requires EPA to evaluate whether industry shows that prioritized chemicals present “reasonable certainty of no harm.”

Establishes a public database of information with narrow CBI provisions

Provisions to promote green chemistry and development of safer alternatives