



Status quo of alternative assessment and substitution in Europe – introduction to the panel

**Lothar Lißner
Cooperation Centre Hamburg (Germany)**

**International Symposium on
Alternatives Assessment:
Advancing Science and Practice**

Bethesda, March 5-6, 2015



Many EU-Directives and EU-Regulations demand substitution as priority

**General substitution demand (without a substance list):
Industrial Emissions Directive, Chemical Agents Directive, Volatile Organic Compounds (VOC)-Directive, Waste directive**

**General substitution demand (with a substance list):
Water Framework Directive**

**Detailed bans for certain substances:
End-of-Life Vehicles-Directive, VOC (for carcinogenic substances),
Carcinogenic and Mutagenic Substances at work places Directive**

**Biocide Directive:
Detailed substitution procedure**

REACH

Many assessment and substitution frameworks have been developed

- **REACH-Criteria (presentation M. Vainio)**
- **Criteria from other European legislations or authorities**
- **EU Member States**
(presentations A.A. Ejersted / E. Lechtenberg-Auffahrt)
- **NGO Criteria: Environment, trade unions**

- **Overview in OECD-Toolbox**
'OECD Substitution and Alternatives Assessment Toolbox'
<http://www.oecdsaatoolbox.org/>

Resources and major actors for AA and substitution

- **National ministries and public research**
- **Researcher associations (e.g. Green Chemistry associations)**
- **Industry (active, but often not public)**
- **NGOs**

Few ideas to substantially promote AA and substitution

KEMI (Sweden): Center of Excellence

VAMIL-Programme (NL): Tax incentives supporting the introduction of environmentally friendly technologies based on a list of technologies – some of them aiming at replacing hazardous chemicals

Danish set of measures

REACH - if you look at it as an idea and its final political objective

Contact

Dr. Lothar Lissner

Kooperationsstelle Hamburg IFE

Humboldtstr. 67a,

22083 Hamburg

+49-40-484010-100

www.kooperationsstelle-hh.de

l.lissner@kooperationsstelle-hh.de



Main reasons **not** to substitute

- Uncertainty and 'Never change a running process'
- No priority neither at enterprises nor in practical governance
Dealing with the current problems is already too laborious
No additional problems by an unnecessary innovative approach
(existing standards etc.)
- Uncertainty in risk assessment – Shift of risks
- Substitutes are less tested in practice
- Integration in the production chain makes an innovation beyond enterprise borders necessary
- Technological or economic difficulties

Major **NON-Substitution**-strategies for risk reduction



Reduction and elimination of emissions

Technology, hygiene, organisation



Protection of target media

Air, soil, water, workers, consumers



Reduction of the concentration of a hazardous substance

Dilution, ventilation, non functional filler materials

Advantages of these strategies:

Very well quantifiable, measurable, no functional changes

One example for substitution contexts

Biodegradable loss lubricants (BLL) in inland and coastal water activities

Priority of state owned water authorities:

Water protection

Long standing – high quality

Priority:

Price

Sufficient quality

Short term functioning

Water protection? - No legal obligation!



**BLL: High market
penetration!**

www.ivam.llincwa.nl



**BLL: Very low mar-
ket penetration!**

The Netherlands: Examples from VAMIL / MIA

F 3150

Textielreinigingssysteem met CO2

bestemd voor: a. het reinigen van textiel met CO2,

bestaande uit: b. een reinigingsinstallatie, een toevoereenheid, een mengsysteem, een pomp en een opslagsysteem voor CO2.

A 7120

UV-gewasbeschermingsinstallatie

bestemd voor: a. het doden van plantpathogenen in grasvelden of land- en tuinbouwgewassen door behandeling met UV-licht, ter beperking van het gebruik van chemische bestrijdingsmiddelen,

bestaande uit: b. een zelfrijdende, hangende of getrokken gewasbeschermingsinstallatie, UV-lampen, voeding en meet- en regelapparatuur, exclusief het trekkend voertuig of de rail.

Formerly in the programme

een aardappelhaarwortelsnijmachine

to replace the chemical removal of potato eyes by mechanical means