Overview on relevant European legislation
The Landfill Directive


“Information Exchange Event on landfill of Waste“

Helsinki, 15 to 16 September 2008

EU Legislation – Legal Background for waste management

Waste Framework Dir.
(2006/12/EC, *Ex- Dir. 75/442/EEC)*

Currently under revision

Hazardous Waste Dir.
(Dir. 91/689/EEC)
with
Dec. 2000/532/EC

Waste Shipment Regulation
(Reg. (EC) 1013/2006)

(former Reg. (EEC) 259/93)

Setting the framework / Fundamental and general provisions / Definitions

Specification of waste treatment operations

Landfill Directive
(Dir. 1999/31/EC)

Acceptance Criteria

(Council Decision 2003/33/EC)

Incineration

(Dir. 2000/76/EC)

IPPC

(Dir. 2008/1/EC)

Recycling
Recycling Strategy released in 2005; provisions in new Waste Framework Dir

Specification for single waste streams

- Sewage Sludge Dir. 86/278
- Batteries and Accumulators Dir. 2006/66
- Packaging and Packaging Waste Dir. 94/62
- PCBs Dir. 96/59
- End-of Life Vehicles Dir. 2000/53
- WEEE Dir. 2002/96
- Waste oil Dir. 75/439
- ROHS Dir. 2002/95
- Mining Waste Dir. 2006/21

Waste Framework Directive 2006/12/EC

(ex 75/442/EEC)

Revision of Waste Framework Directive

The Waste Framework Directive (2006/12/EC) is currently under revision. Since a final version will have to be decided via the „Co-decision-procedure“, European Parliament and the Council have to agree on the entire text

The revision has to be seen in the overall context of the fundamental reform of European waste legislation which includes the revision of the Waste Shipment Regulation

In December 2005, the Commission has presented a Proposal for a Directive on waste

In June 2007, the Council has reached a compromise on this text

In June 2008, the Parliament has voted on a compromise which is agreed on with Council representatives

After the second reading by the Council, the Directive will be published; transposition period for MS is 2 years

Revision of Waste Framework Directive: Key documents

May 2003: Commission Communication entitled "Towards a thematic strategy on the prevention and recycling of waste / COM(2003) 301 (available at http://eur-lex.europa.eu/LexUriServ/site/en/com/2003/com2003_0301en01.pdf)

December 2005: Communication from the Commission to the Council, the European Parliament, the European Economic and Social Committee and The Committee of the Regions - Taking sustainable use of resources forward - A Thematic Strategy on the prevention and recycling of waste / COM(2005) 666 released together with Proposal for a Directive of the European Parliament and of the Council on waste / COM(2005) 667 (available at http://ec.europa.eu/environment/waste/pdf/directive_waste_en.pdf)

June 2007: Council compromise (available at http://register.consilium.europa.eu/pdf/en/07/st11/st11406-re04.en07.pdf)

June 2008: Parliament vote on WFD text (available at http://www.europarl.europa.eu/sides/getDoc.do?pubRef=-//EP//TEXT+TA+P6-TA-2008-0282+0+DOC+XML+V0//EN)

Revision of Waste Framework Directive

Major impacts of parliament compromise (not exhaustive)

- **Subject matter**
- **Scope/definition:**
  - **Exclusion of in situ land**
  - **Distinction waste/by-products,**
  - **End of waste status**
- **Establishment of a 5-step waste hierarchy with new definitions for re-use and recovery**
- **Distinction disposal/recovery (particular with regard to incineration)**
- **Waste prevention programs**

Treatment methods (Article 1)

Disposal operations listed in Annex II A

Recovery operations listed in Annex II B

Disposal Operation concerning landfills:

D 1: Deposit into or onto land (e.g. landfills etc.)

D 5: Specially engineered landfills (e.g. placement into lined discrete cells which are capped and isolated from one another and the environment, etc.)

Waste categories NOT covered (Article 2)

Gaseous effluents

Mineral resources working quarries

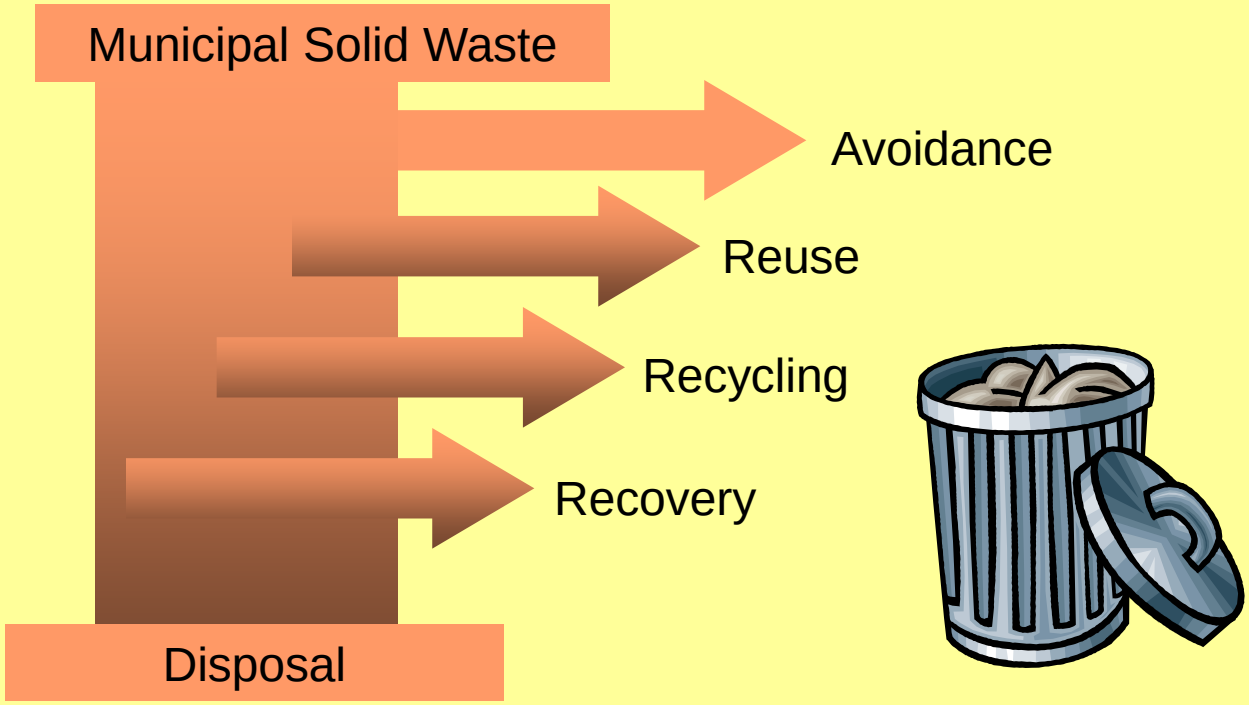
Animal carcases

Radioactive Waste

Waste waters

Decommissioned explosives

European Waste Hierarchy (Article 3)



One of the priorities within the Community Waste Strategy is the elimination of uncontrolled, unmonitored and mismanaged landfills and landfills without permits

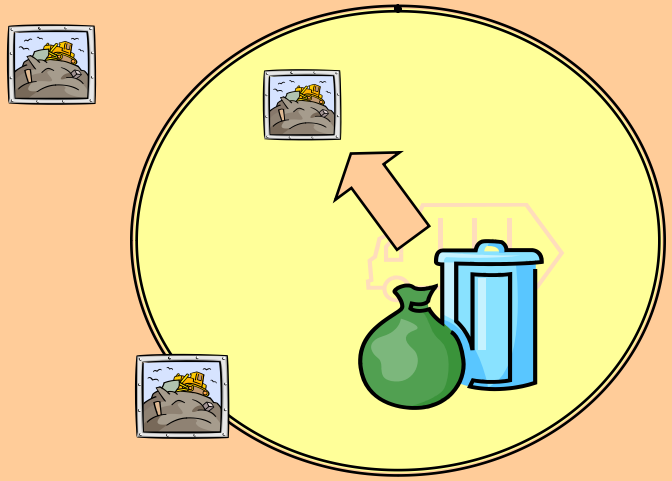
Management Principles (Article 5)

Article 5(1): **Principle of self-sufficiency**

- Network of disposal installations
- Best available technology
- Not involving excessive costs

Article 5(2): **Principle of proximity**

- Disposal in one of the nearest appropriate installations
- Most appropriate methods
- High level of protection



Control of Landfilling - Record keeping and Inspections

(Art. 14):

(a) Keep record of :

- Quantity
- Nature
- Origin
- Destination*
- Frequency of collection*
- Mode of transport*
- Treatment method*

(b) Make this information available, on request to the competent authority

Inspections (Art. 13):

appropriate periodic inspections by the competent authority

*Where relevant

Hazardous Waste Directive 91/689/EEC

Categorization of hazardous waste - Article 1(4)

Annex I **Hazardous due to category or generic type**	Annex II **Hazardous due to constitutes of the waste**	Annex III **Hazardous due to properties of waste**
1 Hospital and clinical wastes	C 1 beryllium and comp.	H 1 Explosive
2 Pharmaceuticals, medicines and veterinary comp.	C 2 vanadium comp.	H 2 Oxidizing
3 Wood preservatives	C 3 chromium (V1) comp.	H 3 A Highly Flammable
...	C 4 cobalt compounds	...
40 other	...	H 14 Ecotoxic
	C 51 hydrocarbons	

All hazardous wastes must be **categorized** with their unique **European Waste Code** (EWC, 6 digit code) derived from the Annexes of Decision 2000/532: List of hazardous waste

Landfill Directive 1999/31/EC

Definition for landfills (Article 2 (g))

'Landfill' means a waste disposal site for the deposit of the waste onto or into land (i.e. underground), including:

- **internal disposal sites (waste disposal in place of production)**
- **a permanent site (i.e. more than one year) which is used for temporary storage**

But excluding:

Facilities where waste is unloaded in order to permit its preparation for further transport for recovery, treatment or disposal elsewhere

Storage of waste prior to recovery or treatment for a period less than three years

Storage of waste prior to disposal for a period less than one year

Operations excluded and exemptions permitted (Article 3)

Operations excluded from the scope of the Directive:

- **Spreading of sludges** on soil for the purpose of fertilisation
- The use of **inert waste** for redevelopment/restoration or construction in landfills
- The deposit of non-hazardous **dredging sludges** along waterways
- The deposit of **unpolluted soil**, non-hazardous **inert waste** from **mining and quarrying**

!

MS can declare that specific articles* do not apply for landfills (<15 kt/<1kt/y) for inert or non-hazardous waste on isolated island or in **isolated settlements**
(Notification to Commission required)

* Use only for inert; financial garantee, cost coverage; acceptance procedures, control & monitoring, quality control

Classification of landfills (Article 4)

inert

Definition Art. 2 (e):

- **Waste that does not undergo significant physical, chemical or biological transformation**
- **Waste will not dissolve, burn, biodegrade or react**

non-hazardous

Definition Art. 2 (b) + (d):

- **Municipal waste**
- **Waste not covered by paragraph (c)**

hazardous

Definition Art. 2 (c):

Any waste covered by Article 1(4) of Directive 91/689/EEC on hazardous waste – listed showing the nature, constituents or properties listed in Annex I, II and III

Waste NOT to be accepted in landfills (Article 5 (3))

Liquid waste

Waste which is:
explosive, corrosive, oxidizing, highly flammable (defined in Annex III of Directive on haz. waste)

Hospital and **clinical** waste
from medical and veterinary establishments (defined as infectious in Annex III of Directive on hazardous waste)

Whole **used tyres** (from July 2003)
Shredded used tyres (from July 2006), excluded:
whole tyres used as engineering material

Article 5(3): "The dilution or mixture of waste solely in order to meet the waste acceptance criteria is prohibited."

Directive 1999/31 – Acceptance requirements (Article 6)

(a) Only waste that has been subject to treatment may be landfilled*

Treatment (Art. 2 (h)) :

- Physical processes
- Thermal processes
- Chemical processes
- Biological processes
- including sorting,

that change the characteristics of the waste in order to reduce its volume or hazardous nature, facilitate its handling or enhance recovery

* May not apply if such treatment does not contribute to prevention and reduction of negative impacts

Reduction targets for biodegradable municipal waste (Article 5)

…of amounts stated 1995 in EUROSTAT (or latest year before)

Reached aim already in 2003

* Countries which put more than **80% of Municipal Waste** (EUROSTAT 1995) into landfills may **extend the period for maximal 4 years**

(Applies e.g. for: UK, ES, all 10 new MS)

Targets to be re-examined by 2014
Commission works on Standards for Composting since 2007

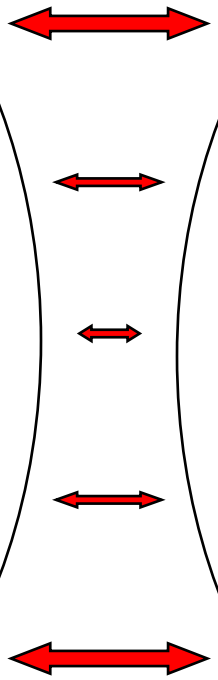
Definition and strategies for biodegradable waste

Any waste that is capable of undergoing anaerobic or aerobic decomposition

MS shall develop national strategies for reduction of biodegradable waste using recycling, composting, biogas production and material/energy recovery

Range of approaches – Biodegradable waste

- Bans on landfilling biodegradable waste
- Mandatory separate collection (e.g. biowaste, packaging waste, biodegradable fraction C&D waste)
- Mandatory MBT or incineration
- Incineration MSW
- Low share of landfilling



- Voluntary approaches
- Landfill taxes
- No or poor separation (e.g. only packaging, only major commercial sources)
- No or were little bans for landfilling (e.g. only animal by-products, health care waste)
- no or little energy recovery or biological treatment facilities
- high share of landfilling

Implementation examples (2005) – Biodegradable waste

AT: Legal obligation for separate collection biowaste, packaging waste, biodegradable fraction C&D waste;
landfilling only of wastes pre-treated by incineration or MBT in order to obtain TOC <5%

BE Flanders: Landfilling ban for unsorted MSW, waste collected for recovery and combustible fraction (TOC >6%)

DK: Landfilling ban for all combustible waste fractions (incineration)

DE: General legal obligation for separation; biodegradable MSW composted, packaging waste recovered;
general ban for landfilling of untreated waste (pre-treatment MBT or incineration)

Implementation examples (2005) – Biodegradable waste

LU: separate collection kitchen, green waste, paper, wood;
pre-treatment installations for MSW at landfills (sorting, shredding, homogenisation, organic stabilisation)

NL: High share of incineration for MSW;
targets for separate collection organic waste,
ban on landfilling separately collected biowaste (composting, fermentation)

SE: Landfilling ban for combustible and organic waste;
high share incineration
growing share biological treatment

Information sources

2005:

„Implementation of the Landfill Directive in EU 15“

- Basic characterisation
- Compliance testing
- On-site verification
- at landfill level (case studies)

2005:

„National strategies for reduction of biodegradable waste“

- Separation
- Treatment
- Bans to landfill
- Share

2007:

Follow-up study implementation DE, ES, HU, IE, SI, SE

- Implementation into national legislation (DE, HU, SE, SI)
- Guidance Documents (IE, HU, SI, SE)
- Additional acceptance criteria
- Inspections (generally targeted on landfill operators while SE primarily addresses waste generators)

(http://ec.europa.eu/environment/waste/landfill_index.htm)

Siting and general requirements for landfills (Annex I)

1. Location

- Distance to residential areas, recreational areas, waterways
- Waterbodies, agricultural or urban sites
- Existence of water or nature protection zones
- Geological and hydrogeological conditions
- Risk of flooding, subsidence, landslide or avalanches
- Protection of nature or patrimony

2. Water control and leachate management

Control water from precipitation; prevent surface or ground water from entering the landfill body/waste, leachate collection

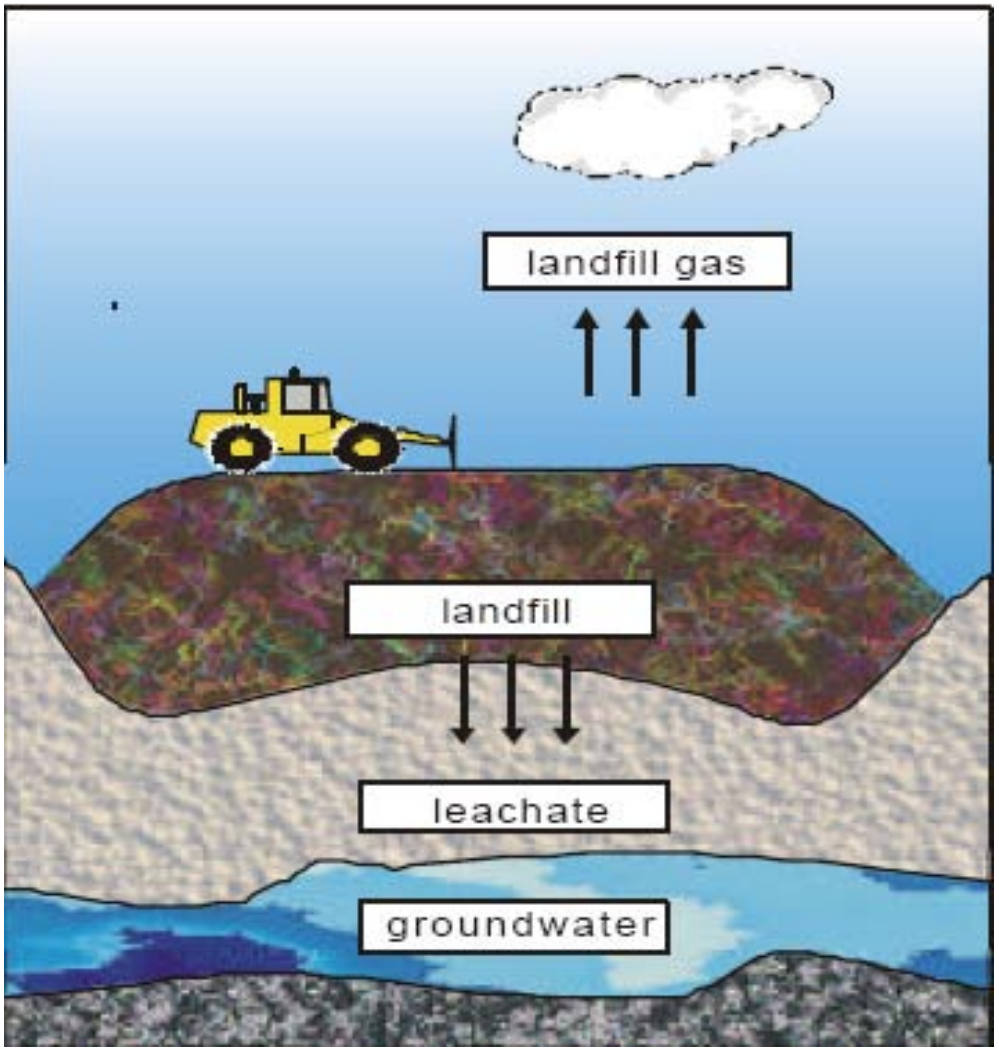
3. Protection of soil and water

Geological barrier, sealing system

Siting and general requirements for landfills (Annex I)

4. Gas control	Collect, treat, use
5. Nuisance and hazards	Minimise odour, dust, noise, traffic, birds, vermin, insects, fires
6. Stability	Place in a way to avoid slippage and settling
7. Barrier	Prevent free access and establish system to detect illegal dumping

- Authorization
- Operation
- Closure
- Aftercare



Permit for disposal operation (Art. 7 and 8)

Application for permit: (Art. 7)

(a) Identity of applicant and operator

(b) Description of types and total quantities of waste to be deposited

(c) Proposed capacity

(d) Description of disposal site (incl. Hydrogeology and Geology)

(e) Proposed methods for pollution prevention and abatement

(f) Operation, monitoring and control plan

(h) EIA accord. 85/337/EEC if required

(i) Financial security

Conditions of permit: (Art. 8)

Issue of permit only if

a (i) relevant requirements fulfilled

a (ii) management in hand of person technically competent; development and training provided

a (iii) necessary measures taken to prevent accidents and limit consequences

a (iv) adequate provisions (financial security) to ensure obligations including after-care

(b) In line with relevant WMP

(c) inspection by competent authority prior to commencement of disposal

Minimum content of permit (Art. 9)
(specifying and in supplement to Dir. 2006/12/EC and Dir. 96/61/EC)

Permit shall state :

(a) **Class** of landfill

(b) Defined **types** and total **quantity** of waste authorized for deposition

(c) Requirements for **preparation, operation, monitoring, control** incl. Contingency plans (Annex III,4B), provisional requirements for closure and after-care

(d) Obligation of **annual reporting** to competent authorities on type and quantities of waste disposed and results of monitoring (acc. Art. 12/13 and Annex III)

Permit for IPPC installation* Directive 2008/1/EC (Art. 9)

- Description of installation and its activities
- Conditions of the site
- Raw and auxiliary materials used or generated
- Source of emission
- Nature and quantities of forcastable emissions
- Proposed technology for emission prevention and reduction
- Measures to monitor emissions
- Measures to prevent pollution, use energy efficiently, prevent accidents, remediation and after-care

***applicable to landfills receiving >10 t/d or total capacity of 25 kt, excluding landfills for inert waste**

Directive 1999/31/EC – Cost calculation (Art. 10)

Member States shall take measures to ensure that all costs involved in :

1. Setting up
2. Operation
3. Financial security (as far as possible)
4. Estimated costs of closure and after-care for a period of at least 30 years

are covered by landfill fees for disposal

} **To be paid by owner, collector or producer**

Transparency in collection and use of necessary cost information shall be ensured acc. to Directive 90/313/EEC
(free access to environmental information)

Waste acceptance procedures (Art.11)

(a) Holder or operator have to show that waste acceptable in accordance with permit and Annex II

(b):

- Checking of documentation (incl. haz. waste and shipment)
- Visual inspection at entrance and at deposit
- Sampling if relevant (see Annex II (3)3)

(b):

Register on :

- Quantity
- Characteristics
- Origin (producer, collector)
- Location on site
  (for hazardous waste: precise location of the waste - mapping of landfill cells)

(c) Written acknowledgement of receipt

(d) Notification of non-acceptance

11(2) Regular inspections at deposit and register for exempted landfills

Operation of Landfills – Acceptance Control, Monitoring

Basic Characterisation of waste

- ✓Info on Source, Origin, source process, pre-treatment, composition, leaching behaviour, appearance, EWC, hazard properties, recipient landfill category, precautionary measures, exclusion check recycling/reco

- ✓Testing leaching behaviour, composition

Annex II

Compatibility with landfill acceptance criteria ?

Compliance testing

- ✓Periodical checks of regularly arising waste streams

On-site verification

- ✓Visual inspection
- ✓Periodic
  ling at
  compliance with accompanying documents

Monitoring

- ✓Meteorological data (may also be derived from national statistics)
- ✓Emission data: water,
  leach
)
- ✓Topography of the site (setting behaviour, structure, composition)

Annex III*

*Minimum procedure; further specifications set by MS and in permits

Criteria and procedures for acceptance of waste at landfills (Decision 2003/33/EC)

Landfill for inert waste:
short list of acceptable inert wastes,
specific leaching limit values

Landfill for non-hazardous waste:
municipal waste, gypsum waste, stable, non-reactive hazardous waste;
specific leaching limit values

Landfill for hazardous waste:
specific leaching limit values

Standards for sampling and test methods to be applied since July 2005

Control and monitoring procedures acc. Annex III of Landfill Directive

Meteorological data	→	Daily testing of meteorological date (temperature, volume of precipitation etc.)
Emission data: water, leachate and gas control	→	Frequent testing of volume and composition from leachate, gas and surface water
Protection of groundwater	→	Frequent testing of groundwater level and composition
Topography of the site: data on the landfill body	→	Yearly testing of landfill body

Control and monitoring procedures acc. Annex III of Landfill Directive

Leachate control → Leaching system, collecting point for taking samples and further treatment of leachate

Gas control → Gas collection system, collecting point for taking samples and further treatment of gas

	Operating phase
Leachate volume	Monthly
Leachate composition	Quarterly
Volume and composition of surface water	Quarterly
Potential gas emissions and atmospheric pressure (CH4, CO2, O2, H2S, H2, etc)	Quarterly

Specific details which are described underneath the table in the Annex have to be taken into consideration

The parameters to be measured and the substances to be analysed as well as the frequency of measuring must be laid down in the permit document

Closure / Aftercare of landfills (Art. 13)

Start of closure according to:

-permit,

-at request of operator

-at decision of authority

Operator responsible for maintenance, monitoring, control as long as required by authority

Monitoring (acc. Annex III Landfill Directive) →

- Meteorological data
- Emission data: groundwater, leachate, gas (volume, composition)
- Topography of the site (structure and composition, setting behaviour)

Notification of any significant adverse environmental effect revealed by control procedures

Execution of corrective measures following on decision of authorities

Adaptation of existing installations (Art. 14)

!

Existing installations

(permit granted or in operation at the time of transposition of the Directive)

may not continue operation

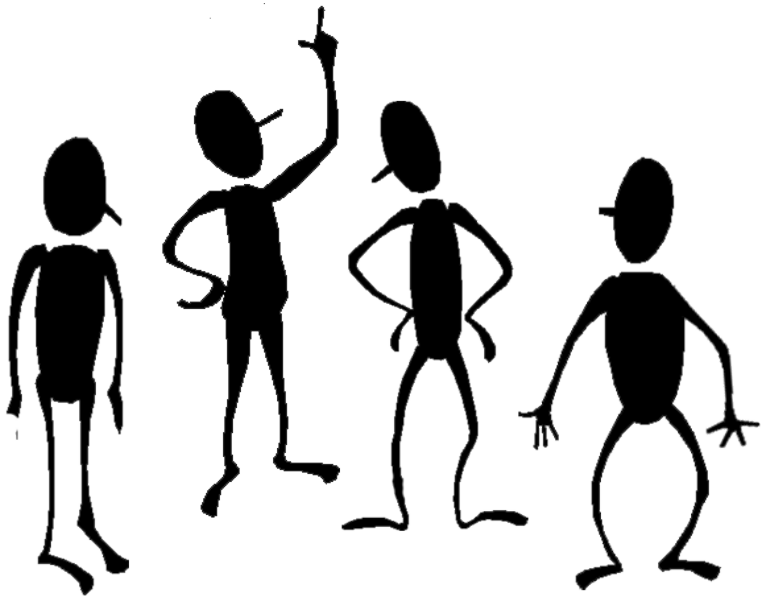
unless the following steps have been accomplished:

as soon as possible and **2009** at the latest

(a) Operator presents conditioning plan for the site including all aspects required for permit under this Directive and corrective measures needed to comply with the requirements

(b) Competent authorities take definite decision whether operation can continue on the basis of the plan and the requirements of 99/31/EC; if required measures to close the site in accordance with Art. 13

(c) In case of approval, authorisation of necessary work and setting of transitional period for completion



Thank you for your attention