

# Overview on relevant European legislation

## The Landfill Directive



## Information Exchange and Awareness Raising Event on LANDFILL of Waste

Poland

Gdansk, 27 - 28 February 2007

BiPRO

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# EU Legislation - Legal Background for waste management

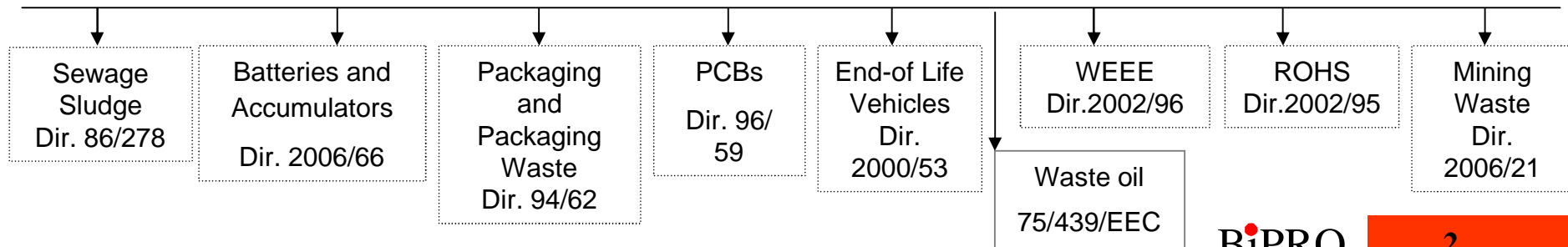
<b>Waste Framework Dir.</b> (2006/12/EC since 05.04.06) <i>(former Dir. 75/442/EEC)</i>	<b>Hazardous Waste Dir.</b> (Dir. 91/689/EEC) with Dec. 2000/532/EC <b>EWC</b>	<b>Waste Shipment Regulation</b> (Reg. EC 1013/2006 since 14.06.06) <i>(former Reg. EEC 259/93)</i>
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**Setting the framework/ Fundamental and general provisions/definition**

**Specification of waste treatment operations**

<b>Landfill Directive</b> (Dir. 1999/31/EC ) <hr/> <b>Acceptance Criteria</b> (Council Decision 2003/33/EC)	<b>Incineration</b> (Dir. 2000/76/EC)	<b>Recycling</b> Part of Recycling Strategy planned for 2007
	<b>IPPC</b> (Dir. 96/61/EC)	

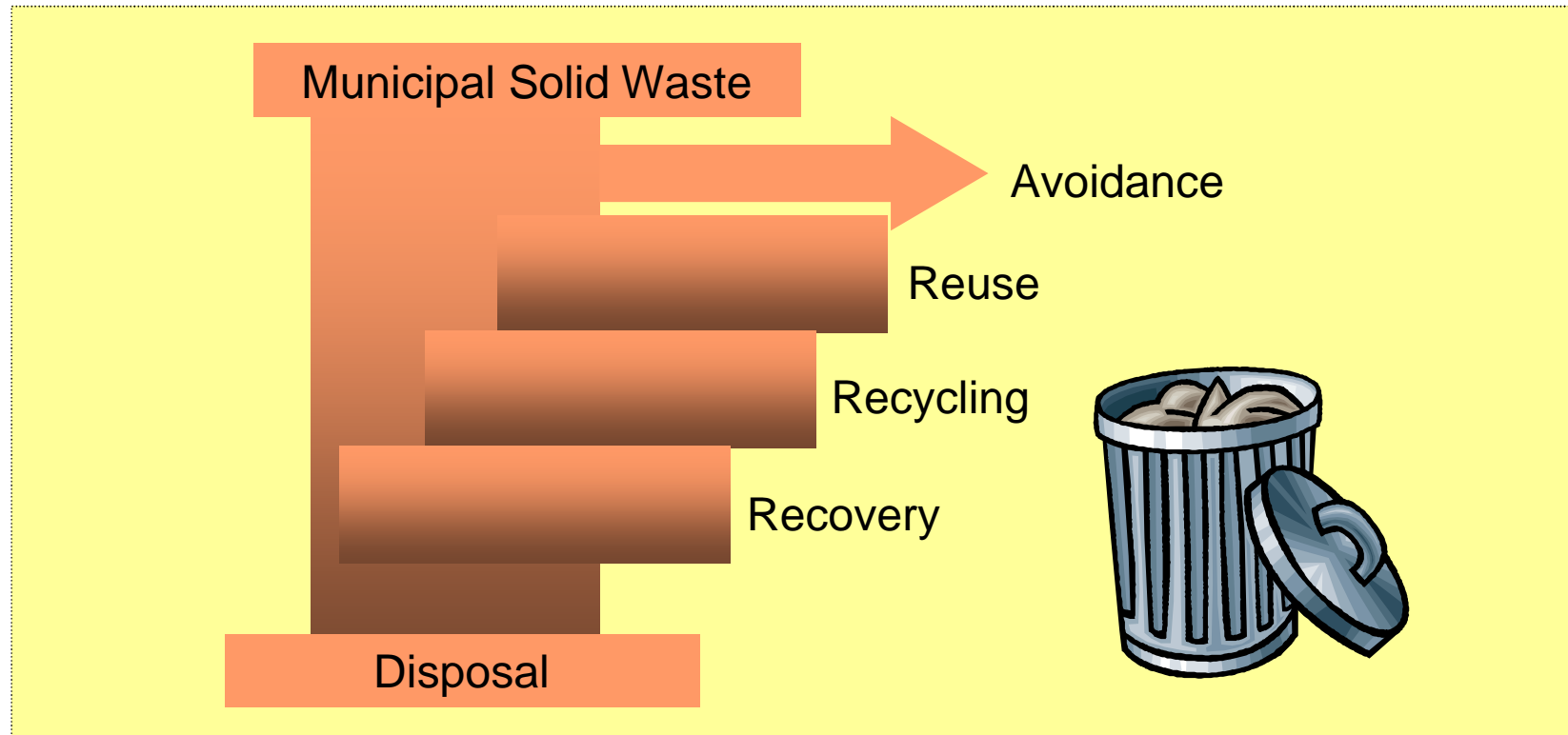
## Specification for single waste streams





## EU Legislation - Waste Directive

### Directive 2006/12/EC Article 3 –European Waste Hierarchy



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



# EU Legislation - Waste Directive

## Directive 2006/12/EC– Management Principles (Article 5)

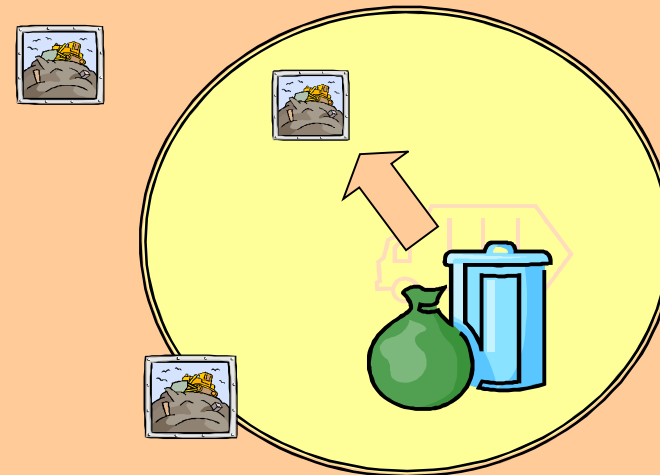
### Article 5(1): Principle of self-sufficiency

- 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





# EU Legislation - Waste Directive

Directive 2006/12/EC– Waste categories NOT covered (Article 2)



**Decommissioned  
explosives**

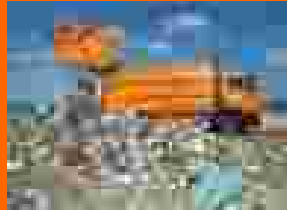


## EU Legislation - Waste Directive

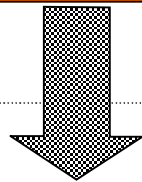
### Directive 2006/12/EC Article 1 – Disposal/ Recovery



**Disposal**  
operation listed in  
Annex II A



**Recovery**  
operation 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.)



# EU Legislation - Hazardous Waste

## Directive 91/689 Article 1(4) – Categorization of hazardous waste

**hazardous**



Definition (Art. 2 (c) 99/31/EC):

Any waste covered by Article 1(4) of Directive 91/689/EEC on haz. waste



### Annex I

describes category or generic type

- 1 Hospital and clinical wastes
- 2 Pharmaceuticals, medicines and veterinary comp.
- 3 Wood preservatives
- ...
- 40 other



### Annex II

describes constitutes of the waste

- C 1 beryllium and comp.
- C 2 vanadium comp.
- C 3 chromium (V1) comp.
- C 4 cobalt compounds
- ...
- C 51 hydrocarbons



### Annex III

describes properties of waste

- H 1 Explosive
- H 2 Oxidizing
- H 3 A Highly Flammable
- ...
- H 14 Ecotoxic

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



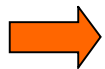
## EU Legislation - Waste Directive

### Directive 1999/31/EC– Operations included (Article 3)

The Directive **shall be applied to landfills** as defined in Article 2(g)

#### **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) on isolated island or in **isolated settlements** (Notification to Commission required)



## EU Legislation - Landfill Directive

### Directive 1999/31– 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



# EU Legislation - Landfill Directive

## Directive 1999/31 – 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



bricks & tiles



glass & porcelain

**non-hazardous**



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

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



e.g. municipal waste

**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



e.g. chemicals



## EU Legislation – Landfill Directive

### Directive 1999/31– Waste to be accepted in landfills (Article 6)

(a) only waste that has been subject to **treatment** is landfilled.

#### Definition of treatment (Art. 2 (h))

"treatment" means

- 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





## EU Legislation – Landfill Directive

### Directive 1999/31– 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 haz.waste)



Whole **used tyres** (from July 2003)  
Shredded used tyres (from July 2006), excluding:  
- used as engineering material (only whole tyres)  
- bicycle tyres  
- tyres with outside diameter above 1400 mm



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



## EU Legislation – Landfill

### Directive 1999/31–biodegradable municipal waste Reduction targets (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)**

Commission will work on Standards for Composting from 2007 onwards



## EU Legislation – Landfill Directive

### Directive 1999/31–Biodegradable municipal waste Definition and major types (Article 2 (m)):

*'biodegradable waste'* means any waste that is capable of undergoing anaerobic or aerobic decomposition, such as:



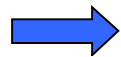


# EU Legislation - Landfill Directive

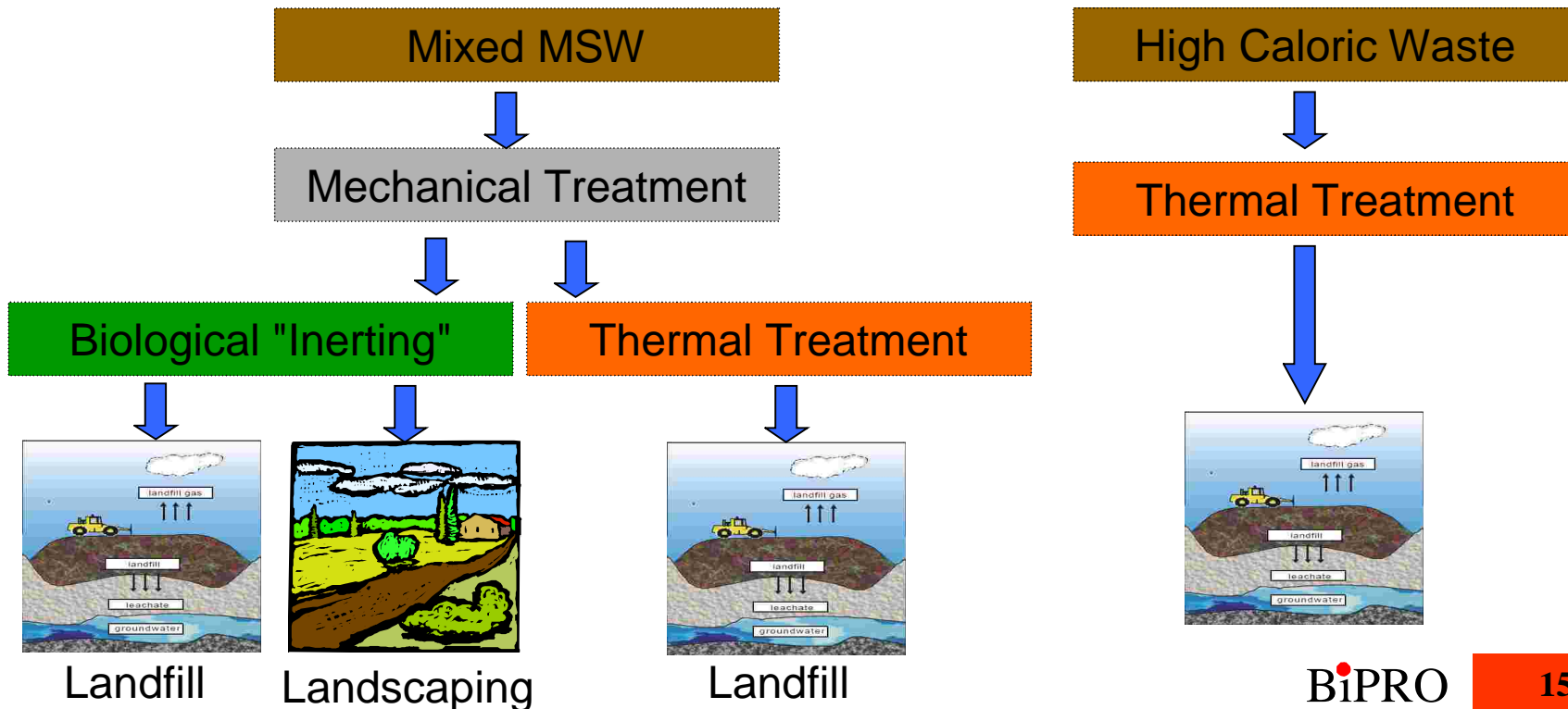
**MS shall develop national strategies for reduction using recycling, composting, biogas production and material/energy recovery**



**Diversion** (separate collection of paper and biowaste)



**Treatment** (stabilization by **biological** and/or **thermal** methods)





# EU Legislation - Landfill Directive

## 1999/31/EC - 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

### 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

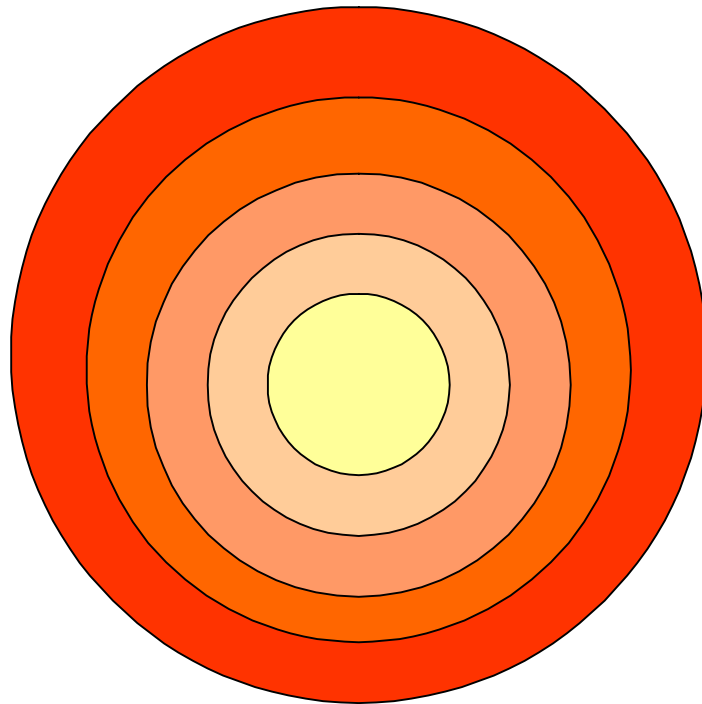
### 7. Barrier

Prevent free access and establish system to detect illegal dumping



# EU Legislation - Landfill Directive

## Summary: The main safeguards of a landfill



Safeguard 1: **Site selection** (hydrogeology)

Safeguard 2: **Sealing** (bottom and top)

Safeguard 3: **Gas control**

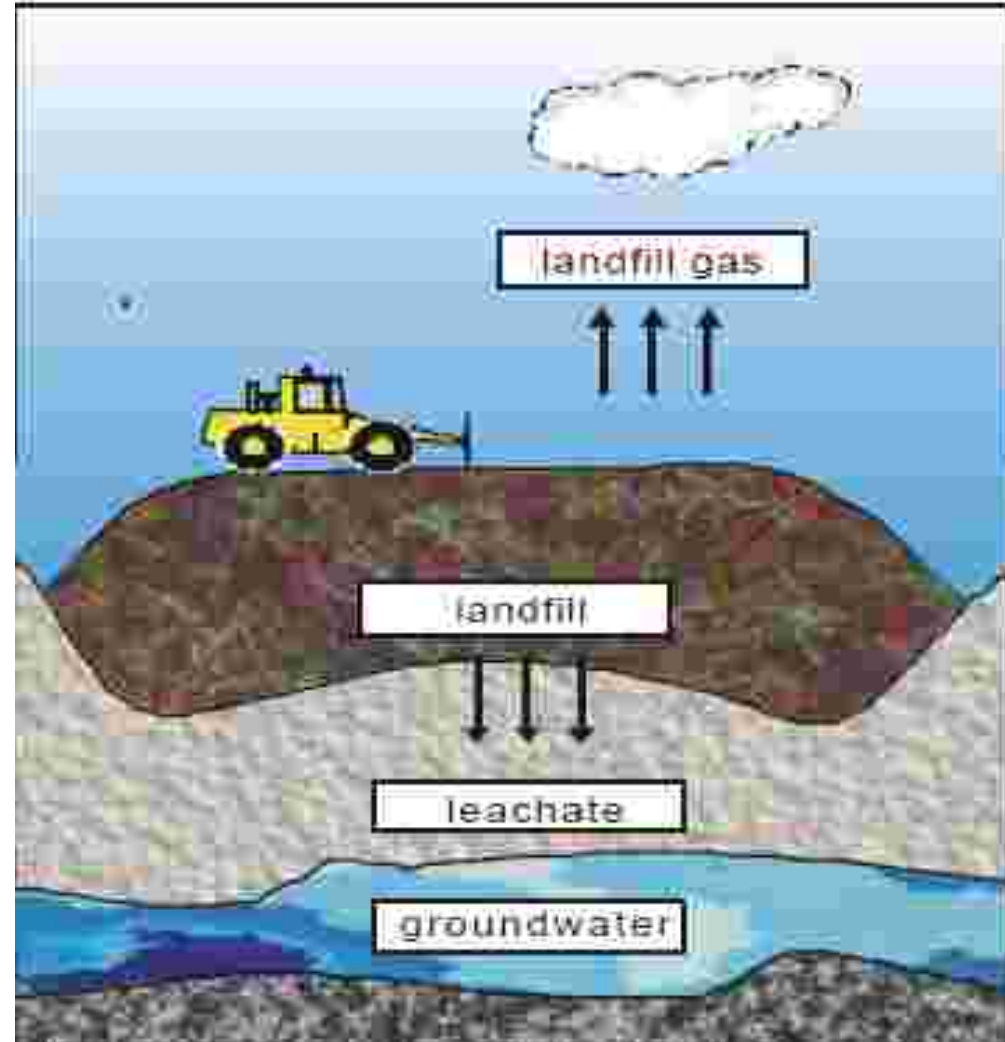
Safeguard 4: **Leachate management, collection and treatment**

Safeguard 5: **Stability and access control**



# EU Legislation – Directive 1999/31/EC

- ➔ Authorization
- ➔ Operation
- ➔ Closure
- ➔ Aftercare





## Authorization of Landfills

### Art.7 and 8 of 99/31/EC – Permit for disposal operation

#### 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



## Authorization of Landfills

**Directive 1999/31/EC– Minimum content of permit (specifying and in supplement to provisions in Dir. 2006/12/EC and Dir. 96/61/EC)**

**Permit shall state (Art 9):**

- (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)



## Authorization of Landfills

### Directive 2006/12/EC– Permit for disposal operation

#### Permit shall cover (Art 9(1)):

- (a) Types and quantities of waste
- (b) Technical requirements
- (c) Safety precautions to be taken
- (d) Description of disposal site
- (e) Treatment method

#### Permits may be (Art. 9(2)):

- Granted for specific period
- Renewable
- Subject to conditions and obligations
- Refused, if the intended method of disposal is unacceptable



## Authorization of Landfills

### Directive 1996/61/EC (Art. 9) – Permit for IPPC installation\*

- Description of installation and its activities
- Raw and auxiliary materials used or generated
- Source of emission
- Conditions of the site
- Nature and quantities of forecastable 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**



## European Legislation – Landfill Directive

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

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

- (a) Setting up
- (b) Operation
- (c) Financial security (as far as possible)
- (d) 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**

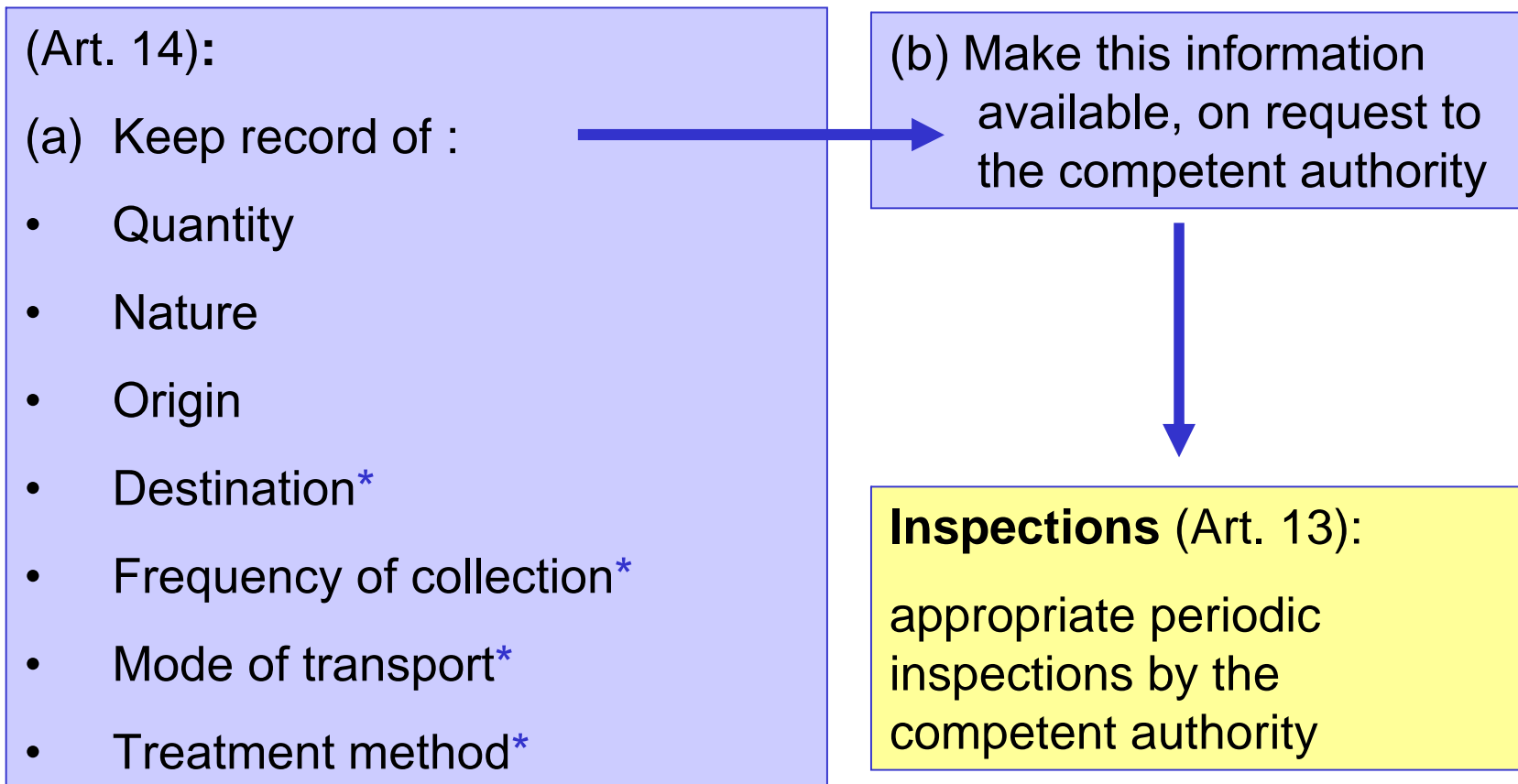
Transparency in collection and use of necessary cost information shall be ensured acc. to Directive 90/313/EEC (free access to environmental information)



## Operation of Landfills

### Record keeping and Control (2006/12/EC)

( basic requirements; further specifications in 99/31/EC)



\*Where relevant



## Operation of Landfills

### Record keeping and Control (99/31/EC)

(Art. 11(1) b):

Install register on :

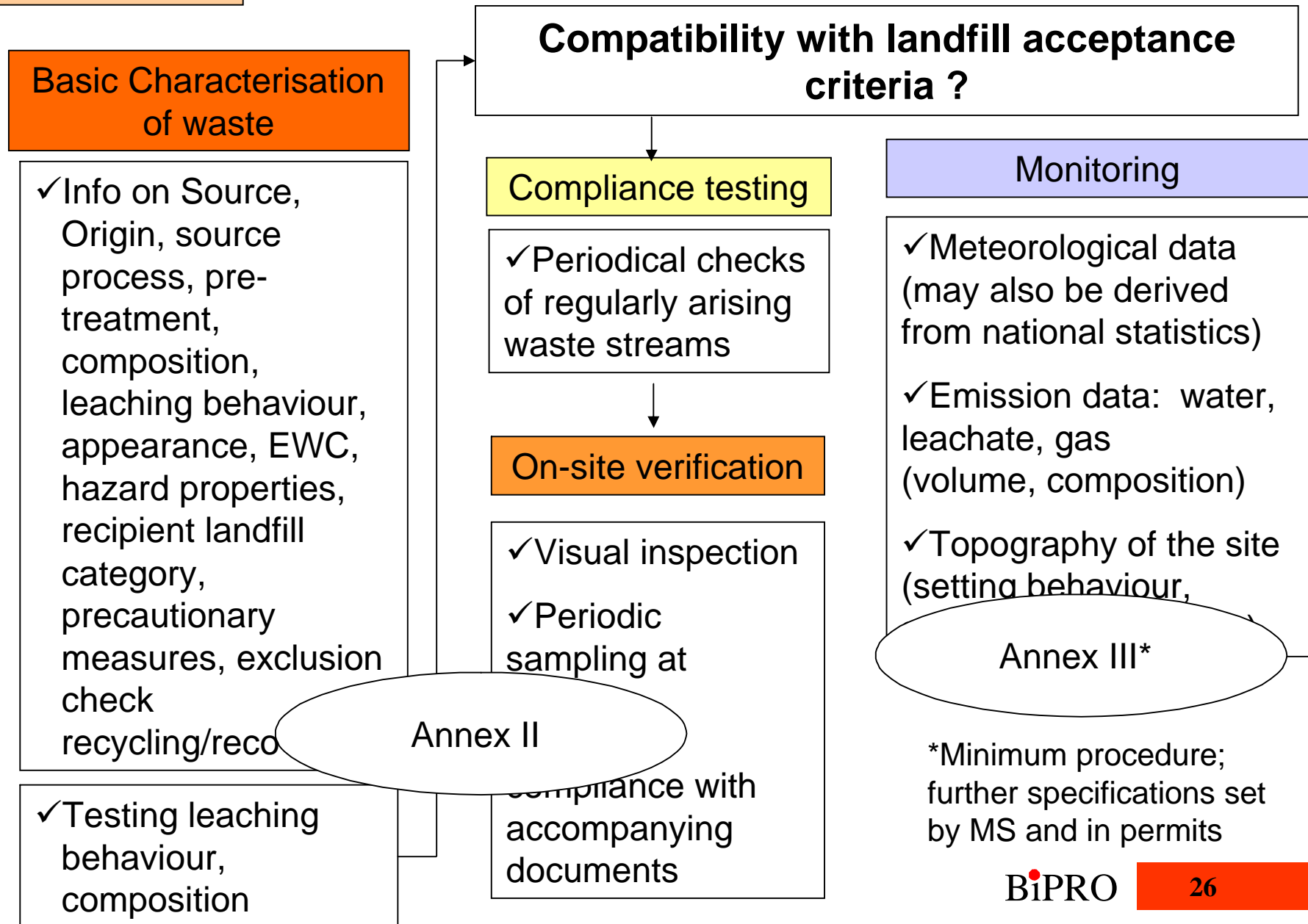
- Quantity
- Characteristics
- Origin (producer, collector)
- Location on site (for hazardous waste: precise location of the waste - mapping of landfill cells)

Make this information available, on request to the competent authority

**Written acknowledgement of receipt !**



# Acceptance control, Monitoring (Art. 11 & 12)





## 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  
by July 2005**



## 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)

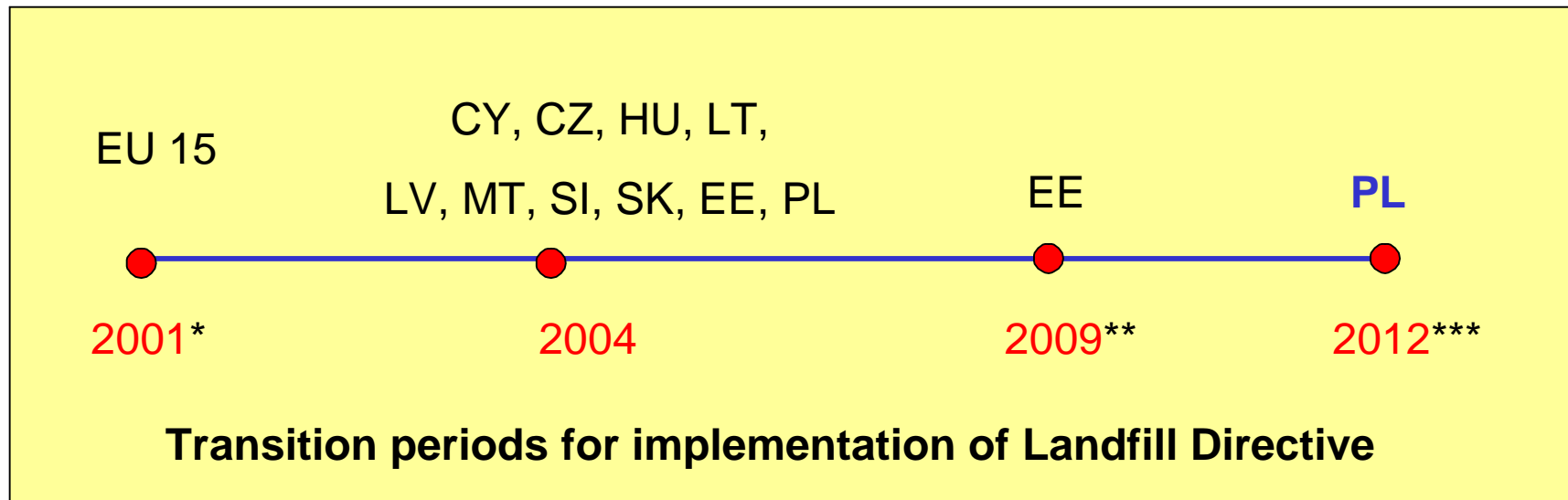
### Notification of any significant adverse environmental effect revealed by control procedures

### Execution of corrective measures following on decision of authorities



## EU Legislation – Landfill Directive

**Directive 1999/31 – Transition periods for application of legal requirements in new Member States**



**\*Article 18**

**\*\* Oil shale ash at existing landfills**

**\*\*\* Art. 14c, leachate management, gas control,  
geological barrier, stability for MSW**



## EU Legislation – Landfill Directive

### Directive 1999/31 – Requirements for existing installations (Art. 14)

Existing installations



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

**may not continue operation**

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

unless the following steps have been accomplished:

- (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

\* Poland 2012 on basis of approved conditioning plan, provided stepwise reduction