ISWA – Working Group on Landfill

Monday 6th May, 2013 by DAKOFA (Danish Waste Association).

Landfilling practices and regulation in Denmark.

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Outline

1. Landfilling of waste in Denmark, Retrospect.
2. Waste amounts being landfilled in Denmark.
3. EU-legislation on the landfilling of waste (incl. implementation in Denmark).
4. How does the Danish implementation deviate from the EU Landfill Directive?
5. Questions?
1. Landfilling of waste in Denmark, Retrospect. (1)

1973: The Environmental Protection Act passed by The Danish government (“Folketinget”).

1974: 1. national guidelines on “controlled landfills”.

1982: 2. national guidelines on landfilling of waste.

1997: 3. national guidelines on landfilling of waste.

2001: Danish Statutory Order on landfills.

2009: Amendments of Statutory Order on landfills.

2013: Statutory Order is expected to be amended.
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2. Waste amounts being “landfilled” in Denmark (1)

Treatment of waste in Denmark – 2011:

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Tonnes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recycling</td>
<td>5,593,000</td>
</tr>
<tr>
<td>Incineration</td>
<td>2,605,000</td>
</tr>
<tr>
<td>Landfilling</td>
<td>549,000</td>
</tr>
<tr>
<td>Temporary storage</td>
<td>102,000</td>
</tr>
<tr>
<td>Special treatment</td>
<td>253,000</td>
</tr>
<tr>
<td><strong>Sum</strong></td>
<td><strong>9,102,000</strong></td>
</tr>
</tbody>
</table>
2. Landfilling of waste in Denmark (2)

Waste treatment in Denmark – 2011:

- Særlig behandling
- Midlertidig oplagring
- Deponering
- Forbrænding
- Genanvendelse

Diagram shows the percentage distribution of waste treatment methods in Denmark for the year 2011.
## 2. Landfilling of waste in Denmark (3).

### Waste types being “landfilled” in Denmark:

<table>
<thead>
<tr>
<th>Type</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Household (bulky waste etc.)</td>
<td>20%</td>
</tr>
<tr>
<td>Service sector (mainly non-recyclable and non-combustable waste)</td>
<td>16%</td>
</tr>
<tr>
<td>Industry (mainly non-recyclable and non-combustable waste)</td>
<td>35%</td>
</tr>
<tr>
<td>Building &amp; Construction (impregnated wood, poll. soil &amp; PCB)</td>
<td>21%</td>
</tr>
<tr>
<td>Waste water treatment (sludge etc.)</td>
<td>4%</td>
</tr>
<tr>
<td>Slags and fly ash (waste incineration &amp; coal-based power plants)</td>
<td>3%</td>
</tr>
<tr>
<td>Other (mainly hazardous waste)</td>
<td>1%</td>
</tr>
<tr>
<td><strong>Sum:</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>
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3. EU-legislation on the landfilling of waste (1)

- EU Landfill Directive: 1999/31/EC.
- EU Council Decision: 2002/33/EC.
3. EU-legislation on the landfilling of waste (2)

**EU Landfill Directive - contents:**

1. Overall objectives.
2. Definitions.
5. Waste and treatment not acceptable in landfills.
3. EU-legislation on the landfilling of waste (3)

EU Landfill Directive - contents:

6. Waste to be accepted in the different classes of landfills.
7. Application for a permit.
8. Conditions of the permit.
9. Content of the permit.
3. EU-legislation on the landfilling of waste (4)

EU Landfill Directive - contents:


12. Control and monitoring procedures in the operational phase.

13. Closure and after-care procedures.
3. EU-legislation on the landfilling of waste (5)

EU Landfill Directive - contents:

14. Existing landfill sites.
15. Obligation to report.
17. Committee procedure.
18. Transposition.
19. Entry into force.
3. EU-legislation on the landfilling of waste (6)

EU Landfill Directive - contents:

Annex I: General requirements for all classes of landfills.

Annex II: Waste acceptance criteria and procedures.

Annex III: Control and monitoring procedures in operation and after-care phases.
3. EU-legislation on the landfilling of waste (7)

Landfill Directive (99/31/EC):

• The EU Landfill Directive was approved in April 1999 and published at 16. July 1999.


• In DK the Landfill Directive was implemented in June 2001.
3. EU-legislation on the landfilling of waste (8)

**Council Decision (2002/33/EC):**

- The annexes to the Landfill Directive should be adopted (by COMM & TAC) at the latest 16. July 2002.

- The EU-Commission put forward a proposal for the annexes in June 2002.

- The proposal was rejected by the Member States (in TAC) in July 2002.
3. EU-legislation on the landfilling of waste (9)

**Council Decision (2002/33/EC):**

- Negotiations between The Commission and the EU Member States took place during the Danish Presidency in autumn 2002.
3. EU-legislation on the landfilling of waste (10)


• Since the translation of the Council Decision to Danish contained several hundred errors the Danish edition of the CD was adjusted at 19. May 2003.

• EU Member States (EU/15) should have implemented the CD in national legislation latest 16. July 2004. In many MS (incl. DK) the implementation was delayed!
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How does the implementation in Denmark deviate from The EU Landfill Directive? (1)

The implementation of the Landfill Directive as well as the Council Decision have been “more or less straight” (read: no “Gold Plating”) in more or less all the EU Member States – except in Denmark…..!

(..........as far as I know...........)!
How does the implementation in Denmark deviate from the EU Landfill Directive? (2)

Design:

- Requirements in DK for liners at all categories of landfills (inert, non-haz and haz).
  (NB: According to the CD Member States may set general/specific requirements for liners at inert landfills.)

- More stringent requirements in DK for thickness of the geological barrier - for inert & non haz landfills.
  (Read: Minimum 2 meter thickness of clay liner – compared to “only” 1 meter in the CD.)
How does the implementation in Denmark deviate from the EU Landfill Directive? (3)

Design:

• Reduced requirements for liners and leachate collection system for landfills established with “inwards groundwater pressure”.
  (Read: Where the bottom of a landfill is established below the local groundwater/surface water table.)

• For the above mentioned landfills: More stringent requirements for monitoring of groundwater/surface table around the landfill.
  (Read: Every month instead of 2 times a year as stated in the Council Decision.)
How does the implementation in Denmark deviate from the EU Landfill Directive? (4)

**Operation:**

- Requirements for the landfill operator to work out a water balance for the landfill - to be used for an evaluation between the actual leachate production and the estimated leachate production by use of meteorological data. (NB: According to the CD it is not mandatory to carry out a leachate water balance.)

- Ban on establishing surface sealing (in order to reach “Final storage quality” - or passive phase - as soon as possible as well as to avoid “ticking bombs” in the future).
How does the implementation in Denmark deviate from the EU Landfill Directive? (5)

Operation:

• Possibility for the landfill operators to work out the annual report by use of an internet-based web-application (ERISDA).

• Special requirements for the closure of landfills – e.g. use of gravel as root barrier.
How does the implementation in Denmark deviate from the EU Landfill Directive? (6)

Mandatory Certificate:

• Persons responsible for the management of a landfill shall be in possession of a “Certificate A” before 1. July 2006 (.........................or within 1 year after employment at the landfill!).

• All other persons working at landfills (with landfill-related tasks) shall be in possession of a “Certificate B” before 1. July 2007. (.........................or within 2 years after employment at the landfill!).
How does the implementation in Denmark deviate from the EU Landfill Directive? (7)

Mandatory Certificate:

• To obtain an “A-Certificate” it is obligatory to submit to tests in “Landfill Regulation/Legislation”; “Landfill Operation” and “Landfill Management”.

• To obtain a “B-Certificate” it is obligatory to submit to tests in “Landfill Regulation/Legislation” and “Landfill operation” and furthermore it is mandatory to participate in a one-week “Machinery Course”.

(NB: Criteria to pass the tests to obtain B-Certificate is reduced compared to obtaining an A-Certificate!)
How does the implementation in Denmark deviate from the EU Landfill Directive? (8)

Mandatory Certificate:

• All persons obtaining an A- or a B-Certificate are offered participation in lessons with instruction in the examination requirements.

• Today more than 800 persons have obtained a Certificate.

(NB: Appr. 175 persons have obtained an A-Certificate!
Appr. 625 persons have obtained an B-Certificate!
Appr. 50 persons have obtained an A- & B-Certificate!)
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Thank You!

Questions?