

**Questionnaire according to Commission Decision 2000/738/EC for the report
of the Member States on the transposition and implementation of Directive
(99/31/EC) on the landfill of waste**

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| Please provide the following contact information and complete the grey text boxes: | |
| Institution/Organisation you are representing | Ministry of Agriculture, Natural Resources and Environment – Department of Environment |
| Country your Organisation is representing | CYPRUS |
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| Submission |
| The submission is due the 30. September 2013. |

There is no need to repeat information already supplied but please indicate clearly where and when that information was provided.

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| I. Transposition into national law |
| 1. What are the current laws and regulations in force to transpose the Directive into national law? For those Member States where regional entities have responsibilities in making provisions on landfills, these provisions also need to be sent. Please indicate precisely where each provision of the Directive has been transposed. |
| The directive was transposed into national law as Regulations and a Ministerial Decree, under the Solid and Hazardous Law. The Regulations carry the title “The Solid and Hazardous Law Regulations (Landfills) Regulations of 2003” (562/2003 and the amendment 618/2007) while the decree “Setting of Criteria and procedures for the acceptance of waste at Landfills decree of 2007” (282/2007) |

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| 2. Give general information on the use of collected landfill gas to produce energy including the measures to minimise damage to or deterioration of the environment and risk to human health through collection, treatment and use of landfill gas. |
| <u>Collection of landfill gas</u> a) At the Sanitary Landfill servicing the district of Paphos there is a biogas pipe network collection which allowed the collection of biogas in order to be burnt on site by a controlled flaring combustion. However, still the quantities are not yet adequate to justify the use of a flare. The Sanitary Landfill has been operating since 14/07/2005 and is in fully comply with the provisions of the directive. |

b) At the Residual Sanitary Landfill servicing the district of Larnacas-Ammochostou there is also a biogas pipe network collection which allowed the collection of biogas in order to be burnt on site by a controlled flaring combustion. As the organic material from the mixed domestic waste is separated, stabilized and used as a substitute for the covering soil, the quantities and quality of the collected biogas are not expected to be high. However, still the quantities are not yet adequate to justify the use of a flare. Also, there is a provision for future use of biogas for energy production if the quantity and quality justify this. The Residual Sanitary Landfill has been operating since 01/04/2010 and is in fully comply with the provisions of the directive.

c) For the 53 Uncontrolled Waste Disposal Landfills (U.W.D.L) that were closed in the districts of Paphos (37 U.W.D.L), Larnaca-Ammochostos (16 U.W.D.L) all necessary studies for their rehabilitation and after care were completed. The construction works of Paphos district are already started and for Larnaca and Ammochostos are expected to begin at the first half of 2014. The rehabilitation works include among others and the sealing of U.W.D.L and collection of biogas. The studies revealed that in most of the landfills the quantity and quality of biogas does not justify the utilization of biogas for the production of energy.

According to the risk category to which the U.W.D.L were rated the proposed technical solutions to minimize environmental impacts from biogas were given. In summary, at the level of the preliminary design, the following 3 categories are distinguished depending on the range of measures required (for a complete restoration):

1. Where the quantity is limited, relief of biogas through windows will be followed in the atmosphere,
2. Where the quantity is enough to justify it, that will be controlled by flaring combustion and
3. Where the quantity of collecting biogas is significant then its use in energy production (one or two landfills) will be followed.

Similar studies will be elaborated for the 20 U.W.D.L of Nicosia district and the 44 U.W.D.L of Limassol district and construction works are expected to be completed by 2017. From the 64 U.W.D.L in both districts only 2 are still in operation the rest has been permanently closed.

3. Give a general description of the measures provided to minimise nuisances and hazards pursuant to Annex I, Section 5?

For both Sanitary Landfill of Paphos district and the Residual Sanitary landfill of Larnaca-Ammochostos district there are complete and detailed monitoring systems in place to check and control and minimize to the least any nuisances and hazards described in Annex I, Section 5. Also all these parameters were taken into consideration during the preparation of the Environmental Impact Assessment study submitted to the competent Environmental Authority (Department of Environment) and all the measures needed to be followed are part of the terms of following permit issued for both Landfills.

- Operation of an Integrated Waste (municipal and similar waste) Management Facility Permit from the Ministry of Interior according Waste Law 185(I)2011
- Waste Discharge Permit from from the Department of Environment according the Water Pollution Control Laws of 2002 to 2009, and IPPC Laws of 2003 to 2008, and,
- Air Pollutant Emissions Permit, from the Department of Labour Inspection according the Atmospheric Pollution Control of 2002 to 2009 Laws

4. Have lists or criteria been set for waste to be accepted or refused at each landfill class? If yes, have these lists or criteria as well as the limit values and analysis methods been sent to the Commission?

YES (Decree 282/2007)

/YES they were sent to the Commission. ()

5. Supply information on the collection method for meteorological data as referred to in Annex III, Section 2.

The collection of meteorological data at the landfills constructed and operated in the districts of Paphos and Larnaca-Ammochostos is done through a meteorological station set up on the sites. The data measured and the collection frequency is the ones indicated in Annex III, section 2. The same procedure will be followed for the new Residual Landfill that will be constructed for Nicosia and Limassol Districts.

6. Give a short description of the general system for the monitoring of leachate, surface water and potential gas emissions and atmospheric pressure as referred to in Annex III, Section 3.

The landfill in operation (Paphos and Larnaca-Ammochostos) have been designed to include:

- a) At least one bore hole in the groundwater inflow region and two bore holes in the outflow region to monitor groundwater
- b) At least one sampling point (pit) upstream and one downstream of the landfill site to monitor surface water
- c) Surface water collection system on the landfill site and parametrically is installed
- d) According to the landfill topography, gas bore holes will be installed not only on site but at nearby areas also.

7. Give general information on landfill sites for which the measurement of volume and composition of surface water provided in Annex II, Section 3 was deemed not to be required.

The landfills in operation (Paphos and Larnaca-Ammochostos) include monitoring of surface water upstream and downstream. They're, however, certain periods of the year, like summer months where the temperature is very high and there is not raining, that there is no need for such measurements.

II. Implementation of the Directive

1. Have the Member States made use of the option provided in Article 3(3) (non-hazardous waste other than inert waste from prospecting and extraction, treatment and storage of mineral resources as well as from the operation of quarries)? (Yes/No)

NO

If yes, please give details of these exemptions.

2. Have the Member States made use of the option provided in Article 3(4) (islands and isolated settlements)? (Yes/No)

NO

If yes, please give details of these exemptions, including information on the quantities and, where possible, the types of waste going to such exempted sites.

3. Have the Member States made use of the option provided in Article 3(5) (underground storage)? (Yes/No)

NO

If yes, please give details on the storage facilities, the exemptions and information on the quantities and, where possible, the types of waste going to such exempted sites.

4. (a) Has the national strategy for the reduction of biodegradable waste going to landfills pursuant to Article 5(1) been developed and notified to the Commission? (Yes/No)

YES

If no, please state the reasons why.

(b) Give an indication of which wastes are classified at national level as biodegradable waste and which wastes as biodegradable municipal waste.

Biodegradable municipal waste includes paper waste, food waste and green waste. Biodegradable waste in general used in digestors mainly includes also manure and agriculture by-products (sewage sludge, slaughterhouse waste), food waste from food industry, expired food products.

(c) Indicate the experiences made with the practical application of the strategy.

The requirements set out in the Waste Management Strategy regarding the reduction of municipal biodegradable waste in landfills are applied as follows:

- The first Integrated Waste Management Plant servicing Larnaca-Ammochostos district is operated from 01/04/2010. At the Plant the biodegradable fraction of the mixed domestic waste is separate and, where it is possible, is converted into compost otherwise is neutralized and used as a substitute for the soil in landfilling.

(e) Indicate the amount of biodegradable municipal waste and other biodegradable waste (both in tonnes, if possible broken down in waste streams) going to landfills for each year of the reporting period.

The data of 1993 are used as the basis to calculate its targets. In the calculation of biodegradable waste paper/carbon is included along with green waste (waste from gardens, parks, streets) and the organic material from households. According to the information from 1993, 71% is considered to be biodegradable (see table 1 below).

Up to the year of 2009 all municipal biodegradable waste was going to landfills except some quantities of paper/carbon collected and recycled by the collective system of packaging (Green Dot Cyprus). In 2010, the first Integrated Waste Management Plant servicing Larnaca-Ammochostos district was put in operation. At the Plant the biodegradable fraction of the mixed domestic waste is separate and, where it is possible, it is converted into compost otherwise is neutralized and used as a substitute for the soil in landfilling. In 2011, the first two composting plans were licenced in the area of Nicosia, which are excepting green waste from municipalities.

Table 1: Data of the year 1993

| Composition | t/y | percentage % | 75% by 16.07.10 biodegradable can be landfilled |
|--------------------|----------------|---------------------|--|
| Glass | 11.000 | 3 | |
| Paper/Carbon | 92.200 | 25 | 69.150 |
| Metallic | 14.800 | 4 | |
| Plastic | 47.900 | 13 | |
| Green | 40.600 | 11 | 30.450 |
| Biodegradable | 129.100 | 35 | 96.825 |
| others | 33.200 | 9 | |
| Total | 368.800 | 100 | 196.425 |

| | 2010 | 2011 | 2012* |
|--|----------------|----------------|-------------------|
| Total municipal waste | 570.590 | 570.820 | 561.290 |
| Recycle paper/carbon | 38.380 | 44.550 | Under calculation |
| Wood | 0.650 | 0.370 | Under calculation |
| Green waste recycled (composting) | | | Under calculation |
| Biodegradable landfilled | 332,890 | 308.630 | 303.480 |

*Estimated (still under calculation)

(f) Which adaptations of the strategy are envisaged?

- a) A Waste Management Plan for Municipal Waste from households and similar waste, according to Directive 2008/98/EC, was prepared .One Sanitary Landfill and one Residual Sanitary Landfill (part of Larnaca-Ammochostos district Integrated Waste Management Plant I.W.M.P) were constructed and operated (both meets the requirements of directive 99/31/EC). The one I.W.M.P constructed and is operated from 01/04/2010 servicing Larnaca-Ammochostos districts. The Plant was designed in a way that a high separation of recycled and biodegradable material is achieved. Another I.W.M.P servicing Limassol district will be constructed by the year 2016, while a third I.W.M.P servicing Nicosia is under consideration. All necessary studies were completed and Ministry of Interior is at the final stage of the preparation of the construction Tender Documents. Also all necessary studies will be prepared in the near future for the construction of a forth I.W.M.P which will cover the need of Paphos district.
- b) All necessary studies were completed for the establishment of a Green Point Network (collection points for the depositing of various waste streams out of households – bulky waste, green, textile, furniture, weee, etc.). The construction of the Green Points Network is expected to completed by the end of 2014.
- c) Separate collection at source was promoted at households, from the existing collective system for the packing waste servicing also and all types of paper, created under the packaging directive while the competent authority promotes the separate collection from other household streams such as other organic waste eg.food and green waste.
- d) The preparation of studies/documents regarding the rehabilitation/restoration of the old non approved landfills, which are closed at Paphos and Larnaca-Ammochostos districts, were completed. Construction works are expected to be completed by the beginning 2015 for Paphos district and one year later for Larnaca-Ammochostos district. The rehabilitation/restoration of the old non approved landfills, which are closed at Nicosia and Limassol districts is expected to be completed by 2017.
- e) A study was launched in 2007 regarding the development of a hazardous waste unit where a landfill was included. Following the study institutional structures were put in place, such as Technical Committees and a Ministerial Committee, to follow the implementation of the development including the possibility for EU financing.
- f) **Legislative framework is going to prepare for banning green waste from landfill.**

5. Indicate the number of existing landfills:

| | Landfill for hazardous waste | Landfill for non-hazardous waste | Landfill for inert waste | Others (*) | |
|--|------------------------------|----------------------------------|--------------------------|--------------------|--|
| Total number of existing landfills | 1* | 119 (117+2) | 2 | | |
| Number of these landfills complying with the directive | | 2 | | | |
| Number of landfills closed (no more depositing) since 16 July 2001 | | 115 | | | |
| Number of landfills re-equipped | | | | | |
| Rest capacity (tonnes) | | Unable to | Unable to estimate | Unable to estimate | |

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| | | estimate | | | |
| (*) where necessary, until the end of the transitional period; specify the type of landfill * The landfill was constructed before the publication of the directive. | | | | | |

6. What measures have been taken to ensure that the provisions of Article 10 concerning the costs of landfilling are met?

The article 10 is transposed into the national law as a regulation (article no 14: burial expenses) in the Regulations 562/2003 (see point 1, part I). According to article 14 of this Regulation, the amount charged by a landfill (landfill fee) must be approved by the competent authority and have also the positive opinion of the local authority, in the area of which the landfill is constructed and operated.

7. Give a general description of the measures provided to avoid adverse environmental effects of the closed landfills pursuant to Article 13?

According to the national legislation, the operator is obliged to follow all the provisions of the article 13 of the Regulation 562/2003 and article 13 of the Directive. According to the Waste Law must have a licence and under this licence relevant terms are set to ensure the environment and human protection.

8. Give a short description of the planning procedure for landfills with regard to Annex I, Section 1 (location of the landfill).

The criteria set out in Annex I were taken into consideration at the stage of selecting the most appropriate location for the construction of a landfill (district of Paphos and the districts of Larnaca/Ammochostos). All the parameters taken into consideration were evaluated using a Multicriteria Decision Support System together with GIS system.

9. Give a general description of the technical measures provided to ensure that the requirements of Annex I, Section 2 (water control and leachate management) are met.

See point 6 in part I.

10. Have general or specific requirements as set out in Annex I been provided for inert waste landfills?

There are no inert waste landfills complying with the directive yet. However all requirements of Annex I will be taken into consideration when such new landfills will be constructed.

11. Have the requirements set out in Annex I, paragraphs 3.2 and 3.3 been reduced for certain landfills? (Yes/No)

NO

If yes, give general information on these landfills.