

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

Please provide the following contact information and complete the grey text boxes:	
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<p>Support</p> <p>Should you have any questions please do not hesitate to contact us. The best way to contact us is via our functional email address: estat-waste-statistics@ec.europa.eu</p> <p>Please specify your contact details and indicate what your question is about: e.g. registration in CIRCA, use of the eDAMIS system, waste concepts.</p> <p>With kindest regards, the Waste Data Centre Team at Eurostat EUROPEAN COMMISSION - Eurostat - Environment Statistics L-2920 LUXEMBOURG http://ec.europa.eu/eurostat/waste</p>
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<p>Submission</p> <p>The submission is due the 30. September 2010.</p> <p>Please send the completed questionnaire to EUROSTAT via eDAMIS.</p> <p>For more information how to submit the completed questionnaire via eDAMIS see: http://epp.eurostat.ec.europa.eu/portal/page/portal/waste/reporting#reporting</p>
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There is no need to repeat information already supplied but please indicate clearly where and when that information was provided.

<p>I. Transposition into national law</p>
<p>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.</p>
<p>The Landfill Directive was transposed into the national legislation with the Joint Ministerial Decision (JMD) 29407/3508/2002 (OJG 1572 B/16.2.2002) "Measures and terms for the Landfill of wastes".</p> <p>Moreover, Council Directive 2011/97/EU, amending Directive 1999/31/EC as regards specific criteria for the storage of metallic mercury considered as waste, was transposed into national legislation by the Joint Ministerial Decision (JMD) 28745/895/E103/02.05.2013 (OJG 1104 B) "Amendment of the specific criteria for the storage of metallic</p>

mercury considered as waste”, amending Annexes I, II and III of the abovementioned JMD 29407/3508/2002.

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.

Regarding the use of collected landfill gas, out of 70 Landfill sites for municipal wastes that are operating in year 2015, 3 sites use the collected gas for energy production and provide this energy to the Public Power Corporation of Greece.

The measures applied for the control of landfill gas, have been laid down in Annex I, bullet 4 of JMD 29407/3508/2002. Some measures reported by the operational bodies of the landfill sites, are installation of engineered control shafts and monitoring systems for checking out possible gas escape, use of biofilters at the upper parts of the shafts for biological treatment of the gas before escaping to air, burning of collected gas in torch.

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

In general all Landfill sites take measures to minimise nuisances and hazards, according to available data collected.

- a) Prevention of odours and dust creation is ensured by immediate unloading of wastes and soil covering and in combination with the operation of a network of gas collection pipes.
- b) the disposal and stratification procedure, is carried out so that there is not waste dispersion.
- c) Repulse of birds and insects is achieved by eliminating the free surface area of wastes, by immediate soil covering.
- d) Control of gas emissions is carried out by the network of collection pipes.
- e) Measures for fire prevention are taken both at the operational and the after-closure phase. The general measures include: i) construction of firebreaks, at least 10m wide, around the landfill establishment. ii) construction of fire detection and fire extinguishing networks. iii) construction of water reservoirs for fire extinguishing cases. iv) storage of adequate amounts of soil materials for fire extinguishing case. v) Removal of dried vegetation from the slopes of the landfill body. vi) To provide a water-tank vehicle in cases of landfills where the daily disposal volume exceeds 500 tones.
- f) Measures for noise control include peripheral plantation of trees and appropriate vegetation

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?

The general criteria used by the operational bodies of the landfill sites are those set by the Decision 2003/33/EC (Waste Acceptance Criteria). Due to the fact that the majority of Landfill sites in Greece are Landfills for municipal wastes (non hazardous category), according to article 2 par. 2 of the ANNEX of the previously mentioned Decision, municipal wastes can be accepted without testing in the municipal Landfill sites.

As far as for the other classes of landfill sites, waste acceptance criteria are set by the Environmental Permit.

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

Collection of meteorological data is carried out either by established meteorological stations at the landfill site, or if this is not the case, data is collected by the closest Meteorological Station of the National Network.

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 general systems for the monitoring of the above mentioned parameters are laid down in the environmental permits of landfill sites. Commonly the following measures are taken:

- a) Monitoring of leachate. During the operational phase one measurement at a representative sample of the volume of leachates per month, is carried out. Regarding the composition of leachates, one measurement of a representative sample every three months, is carried out. At the after-closure stage one measurement every six-month period of the

volume and composition must be carried out.

The chemical parameters that are commonly analysed are: pH, COD, BOD, odours, conductivity, Temperature, phenols, total P, As, Cd, Cu, Hg, Zn, volatiles, CN-, F-, N as NH₄, Total Suspended Solids, Total Dissolved Solids. Before the initiation of operation of the landfill, sampling and analysis of underground waters at existing near-by boreholes is carried out in order to lay down reference values of underground waters for comparison reasons with future analysis.

b) Surface waters. Commonly analyses must be carried out at one monitoring point upward and at two points downward the landfill body. The volume and composition must be analysed, every three months at the operational stage and every six months at the after-closure stage.

c) Gas emissions. Monitoring of the volume and composition of representative samples from different sites of the landfill body must be carried out. Analyses of the potential gas emissions should be carried out monthly, at the operational phase, while at the after-closure stage, every six months. The components that should be monitored, are: CH₄, CO₂, O, Total Cl, Total S, N, Benzen, cloro-ethane. Additional parameters are measured in special cases.

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.

Such exemptions are examined at the stage of environmental permit. Moreover, the selected sites are always in distance from surface waters.

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)	Yes
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.	
<p>In compliance with article 3, paragraph 4 of Directive 1999/31/EC, the Greek Ministry of the Environment and Energy (former Ministry of Environment, Physical Planning and Public Works) notified to the European Commission the Exemption List of islands and isolated settlements (Our Ref. No.: 110928/16-7-2003). Moreover specific legislation that regulates these exemptions was issued: JMD 4641/232/2006 on "Technical specification of small landfills in islands and isolated settlements".</p>	
3. Have the Member States made use of the option provided in Article 3(5) (underground storage)? (Yes/No)	Yes
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.	
<p>In the Joint Ministerial Decision (JMD) 24944/1159/2006 (OJG 791 B) "Approval of general technical guidelines for the management of hazardous wastes in compliance with, article 5 (par. B) of JMD 13588/725 "Measures, terms and restrictions for the ..." (B' 383) and the provisions of article 7 (par. 1) of Dir 91/156 of the European Council of 18th March 1991", and more specifically, in chapter 6 of the ANNEX, there is a special provision for underground storage. In the aforementioned chapter it is documented that underground storage in deep drillholes, salt mine cavities, or natural cavities, is prohibited due to the specific geological conditions of Greece (seismicity and permeable limestone bedrock). The aforementioned legislation has been communicated to the European Commission.</p>	
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.	
<p>Biodegradable waste, as set in JMD 29407/3508/2002 and mentioned in the document of the "National Strategy for the reduction of biodegradable wastes" (Our Ref. No 110929/16-7-2003 document to EC) is defined as: waste that may undergo aerobic or anaerobic degradation, such as: 1) food wastes, 2) gardening wastes, 3) paper and cardboard wastes and 4) biomass.</p> <p>Biodegradable municipal waste: domestic wastes as well as other biodegradable wastes which its nature, or composition is similar to the biodegradable domestic wastes. In terms of classification in EWC codes, the biodegradable municipal wastes which are accepted as such are:</p> <p>the codes of chapter 20:</p> <ul style="list-style-type: none"> -20 01 01, paper and cardboard -20 01 08, biodegradable kitchen and canteen waste -20 02 01, biodegradable wastes from garden and parks <p>as well as from chapter 15, the code:</p> <ul style="list-style-type: none"> -15 01 01, paper and cardboard packaging (including separately collected municipal packaging waste) 	
(c) Indicate the experiences made with the practical application of the strategy.	
<p>The main practices which are applied in order to achieve the targets for diversion of biodegradable municipal wastes from landfilling, as set out in the National Strategy, are described below:</p> <p>i) Municipal waste recovery through treatment in four (4) Units of Mechanical Separation & Composting that are</p>	

established in: a) Athens-Attica , b) Chania – Creta, c) Heraklion – Creta, d) Kefallonia island.

- ii) Operation of a network of Mechanical Separation and Recycling Units which includes 32 Units all over Greece (according to the available data for the year 2015), where recyclable wastes collected from the “blue” bin are separated in different waste streams and finally are delivered to recycling companies within or outside the country.
- iii) Recycling of paper and cardboard as raw material, in the paper production industries, within the country or outside the country (exported) in recovery establishments.

Additionally, household composting using specific bins is another practice applied in various municipalities which contributes in diverting biodegradable municipal wastes from landfills.

Moreover, from 2010 the recovery of rural areas biodegradable waste in farming and agricultural operations (e.g. feeding animals, fertilizer in gardens) is included in the total diversion from landfills. Finally since 2011 the network of collection and handling of waste coming from edible oil and fat has been developed and the amounts of this recovered waste contribute to the diversion of the biodegradable waste from landfills.

The results from the described practices, so far are mentioned below:

Year 2013 : Total amount diverted from landfilling: 696,664 t
(includes: collected paper and biodegradable municipal waste)

Year 2014 : Total amount diverted from landfilling : 672,622 t
(includes: collected paper and biodegradable municipal waste)

Year 2015 : Total amount diverted from landfilling : 639,551 t
(includes: collected paper and biodegradable municipal waste)

(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 following data is derived from relevant questionnaires:

Year 2013: 2,817,748 t

Year 2014: 2,862,114 t

Year 2015: 2,851,095 t

(f) Which adaptations of the strategy are envisaged?

Need for revision of the National Strategy

The data mentioned above for the calculation of the biodegradable fraction of the municipal wastes for the reporting period 2013-2015 was based on data collected from: (i) the relevant questionnaires, regarding the application of 1999/31/EC Directive, (ii) the operation of the Mechanical Separation & Composting Units and of the Mechanical Separation and Recycling Units, (iii) the data regarding paper and cardboard packaging recovery within the country or abroad, (iv) household composting using specific bins, (v) the recovery of rural areas biodegradable waste in farming and agricultural operations, (vi) the network of waste coming from edible oil and fats. From the previous reporting periods it is concluded that comparing the figures, a deviation between the real data and the estimated data in National Strategy is noted. This can be explained because in 2003, when the National Strategy was finalised, there were not adequate records due to the fact that there were not organised management bodies to provide adequate data, neither integrated establishments (including Units for Mechanical Separation and Composting). Therefore the calculations were mostly estimations and assumptions.

Based on the above it is obvious that there was a need for revision and revaluation of the National Strategy for the biodegradable waste, taking into account the updated data from the questionnaires, the recovery of waste in other operations, the differentiation of the biodegradable fraction in municipal waste due to the economic crisis in Greece. This was completed in the framework of the new National Waste Management Plan, in accordance with the Waste Framework Directive (2008/98/EC), which has been approved and published on 15-12-2015 with the Act no. 49 of Ministerial Council “Amendment and approval of the National Waste Management Plan and the National Strategic Plan for Waste Prevention, ratified according to the 51373/4684/25–11–2015 Joint Ministerial Decision”.

The basic directions for the diversion of biodegradable waste, according to the new National Strategy for the biodegradable waste are the following:

- (a) promotion and application of coordinated prevention actions (information activities, financial instruments), according to the National Strategic Plan for Waste Prevention, (b) separate collection of biodegradable waste (especially biowaste and paper), (c) construction of small decentralized recovery (composting, anaerobic digestion)

facilities of separate collected organic waste and additionally the treatment of the remaining municipal waste in MBT units (d) the promotion of joint actions with other productive sectors (agriculture, livestock) for the co-management of biodegradable waste, (e) cooperation between the Regional Authorities for the construction of central treatment facilities.

5. Indicate the number of existing landfills:

(year 2015)	Landfill for hazardous waste	Landfill for non-hazardous waste	Landfill for inert waste	Others (*)
Total number of existing landfills	2	70 (Municipal wastes)		2 (Non hazardous Industrial waste)
Number of these landfills complying with the directive	2	(¹)	-	2
Number of landfills closed (no more depositing) since 16 July 2001	0	4 (²)	-	0
Number of landfills re-equipped	-	-	-	-
Rest capacity (tonnes)	17,417(³) (the data refers to one of the two sites)	There is not adequate data for all landfill sites because a lot of extension works are carried out.	-	-

(*) where necessary, until the end of the transitional period; specify the type of landfill

(¹) Most of the existing municipal landfills have their environmental permits updated according to the terms and requirements of the 99/31/EC Directive. Regarding the sites which were constructed prior to the issue of the Directive, these sites have now obtained new environmental permits in accordance to the Directive.

(²) The older cells of the landfills have now been closed and rehabilitated. The number refers to the reporting period 2014-2016.

(³) Additional cell (in total 6) is permitted

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

According to Article 12 of JMD 29407/3508/2002:

- the cost of landfill regarding operation and extension works is covered by the price charged for the disposal (per kg of waste), by the Waste Management Bodies.
- the cost of closure works and aftercare is deposited in the form of bank guarantee, prior to the initiation of operation of the landfill.

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

The closure of the landfill site is followed by the rehabilitation procedure and the after care period for 30 years. The rehabilitation works consists of the following stages: a) sealing of surface of the waste piles, b) continuation of leachate collection and treatment, and construction - if not existing - of gas collection system. c) soil covering and appropriate planting.

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

This issue is examined during the evaluation procedure of the Environmental Assessment Study of the planned landfills, in order to issue the Environmental Permit.

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.

The technical measures for water control and leachate management, in order to meet the above mentioned requirements, are laid down in the environmental permit of each landfill. The common measures taken are mentioned below:

- a) The control of precipitations entering the landfill body is achieved by appropriate compaction of wastes and soil covering.
- b) The prevention of surface waters entering the landfill body is achieved by the construction of peripheral drainage trench system.
- c) Collection of contaminated water and leachate by the construction of leachate collection network.
- d) Treatment of leachates. Leachates are collected through a collection network and are led to the treatment plant. The treated effluents can be used for irrigation purposes of the site vegetation or for recirculation at the waste body in order to keep the appropriate humidity conditions in the waste body.

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

So far, general requirements for the construction of inert waste landfills have been set in JMD 114218/1997 (OJG 1016/B/17.11.1997) and the Joint Ministerial Decision (JMD) 29407/3508/2002 (OJG 1572 B/16.2.2002) "Measures and terms for the Landfill of wastes".

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.