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| **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** **Reporting period 2013-2015** |
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| **Please provide the following contact information and complete the grey text boxes:** |
| **Institution/Organisation you are representing** |  The Finnish Environment Institute |
| **Country your Organisation is representing** | Finland |
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| **Support** |
| 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.euPlease specify your contact details and indicate what your question is about: e.g. registration in CIRCA, use of the eDAMIS system, waste concepts.With kindest regards,the Waste Data Centre Team at EurostatEUROPEAN COMMISSION - Eurostat - Environment StatisticsL-2920 LUXEMBOURG<http://ec.europa.eu/eurostat/waste>  |
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| **Submission** |
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| **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.** |
| Please see the implementation notifications on 29 August 2013 (MNE(2013)57608) and 24 February 2015 (MNE(2015)50937). They contain reference tables with detailed information on the transposition of each Article of the Directive into national law. *The Åland Islands:* Regional Decree on the landfill of waste 2007:3, modified 2013:10  |
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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.** |
| The legal provisions on the collection, treatment and use of landfill gas given in the Government Decree on Landfills (331/2013) are in line with the provisions of the Directive. According to the Government decree, the biogas produced at landfills must be collected and recovered or incinerated.Detailed provisions concerning the technical solutions used for collection, treatment and use of the gas at a certain landfill site are given in the environmental permit of the landfill, issued in accordance to the Environmental Protection Act (527/2014). The permit authority shall set conditions to the operation in order to prevent any harm to human health or damage to the environment (Environmental Protection Act, Chapter 6). Additionally, in case the gas is utilised in an off-site power plant, this power plant will in most cases need its own, separate environmental permit which will stipulate also on the conditions for the safe use of the landfill gas. There were 45 landfill gas pumping stations operating in 2015. Their number has over tripled since year 2000. The volume of the recovered biogas was 83 million m3 in 2011. Approx. 82 % of the recovered biogas was used for the production of electrical and thermal energy, producing 84 GWh electricity and 193 GWh thermal energy. The production of electricity from biogas is supported in Finland by feed-in tariff. Feed-in tariff can be granted to new biogas power plants that have a nominal output of more than 100 kW. The target price for electricity produced in a biogas power plant that belongs to the feed-in tariff system is 83,50 €/MWh. The producer of electricity can receive feed-in tariff for a maximum period of 12 years (Act on production subsidies for electricity produced with renewable energy sources 1396/2010). Biogas production can also be supported by investment subsidies such as energy support which is granted by Centres for Economic Development, Transport and the Environment.*The Åland Islands:* Landfill gas was produced in one landfill and was burned onsite in order to reduce greenhouse gases.  |
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| **3. Give a general description of the measures provided to minimise nuisances and hazards pursuant to Annex I, Section 5?** |
| The Government Decree on Landfills, Section 11, contains equal provisions and requirements to Annex I, Section 5 of the Directive. Additionally, Government Decision requires that structural damages of the landfill caused by frost heaving have to be prevented. The Government Decree states also more generally that all kinds of dangerous situations and possible harm have to be prevented systematically at the landfill site. Detailed provisions how these requirements shall be fulfilled at a certain landfill site are given in the environmental permit of the landfill, issued in accordance with the Environmental Protection Act (527/2014).*The Åland Islands:* It is not permitted, since 1 January 2005, to deposit biodegradable waste in landfills. This reduces nuisances as odours and problems with birds, vermin and insects. The landfill must be located where it does not provide any considerable risk for the environment. |
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| **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 criteria and procedures for the acceptance of waste at landfills are in accordance with the Council Decision 2003/33/EC.Landfills are divided into three categories in line with the Landfill Directive: landfills for inert non-hazardous waste, for non-hazardous waste and for hazardous waste. The classification of waste as hazardous is in line with the Waste Directive (2008/98/EC). The EC list of wastes (Commission Decision 2014/955/EU) has been implemented in Finland by Annex 4 of the Government Decree on Wastes (179/2012, as amended by 86/2015). The legislation has been notified to the Commission.*The Åland Islands:* There are no national lists or criteria for accepting waste to landfills. The Regulation for the Landfill of Waste (ÅFS 2007:3), paragraph 20 makes a direct reference to the criteria set in Annex II of the Landfill Directive. |
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| **5. Supply information on the collection method for meteorological data as referred to in Annex III, Section 2.** |
| The collection method for meteorological data has not been defined in the Finnish legislation. Instead, the collection method is defined on a case-by-case basis in the environmental permit of the landfill. At Finland´s climate conditions the meteorological data does not have major significance in practice since both the volume of precipitation and the evaporation rate are low and the existing national meteorological network is dense. The data of the nearest meteorological station to the landfill can therefore be utilized, if necessary.*The Åland Islands:* Meteorological data from the nearest meteorological station should be used, unless the data is collected at the spot.  |
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| **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 provisions concerning the monitoring system for leachate, surface water and gas emissions have been set in Chapter 7 of the Government Decree on Landfills (331/2013), and they are in line with the requirements of the Landfill Directive. Section 41 of the Government Decree requires that before starting the use of the landfill or its monitoring, or before the closure of the landfill, a base-line survey is conducted at the site. This survey has to include the evaluation of surface water and groundwater conditions at the site, as well as the gas formation and the state of waste decomposition at the landfill area already in use. The requirements for minimum analyses needed for the base-line survey have also been defined in the Decree. Requirements set in the Government Decree on Landfills concerning the necessary monitoring during the use and the after-care phases of the landfill are in accordance with the Landfill Directive. The detailed provisions for monitoring gas emissions, leachate, surface water and ground water are set in Sections 43-46.The environmental permit of the landfill shall contain stipulations on monitoring (Environmental Protection Act, Section 62). Additionally, the landfill operator has to have a monitoring and surveillance program in place (Waste Act 646/2011, Section 120; Government Decree on Waste 179/2012, Section 25; Government Decision on Landfills Section 47). This program shall cover the waste acceptance to the landfill as well as the monitoring of surface water, groundwater and landfill gas in the area.*The Åland Islands:* The operator shall analyze gas emission, groundwater, leachate and surface water according to the conditions given by the environmental permit. The operator must annually disclose all of sampling and measurement results to the authority.  |
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| **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.** |
| According to Section 45 of the Government Decree on Landfills, the quality and quantity of the surface water shall be analysed from samples taken from at least two measuring points. One of the measuring points shall be upstream from the landfill relative to the direction of surface water flow. The other point shall demonstrate the effect of the landfill on the surface water. The measurements shall be made at three-month intervals during the landfill's operational phase and at six-month intervals during the after-care phase. The measurements may be adjusted on the grounds of individual landfill properties. Based on the results of the analyses and the quality of the landfill, the competent authority may decide on the reduction of the measurements. Still, the competent authority is allowed to do so only in cases where the environmental permit of the landfill allows such a reduction. The volume of the surface water is measured, or if this is not possible, the volume is estimated. However, the estimation of the volume of the surface water does is not mean that the information on the volume would have been deemed as "not required".The obligation for surface water measurements at existing landfills came into force on 1 January 1999 (previous Government Decision on Landfills 861/1997). The landfills in the operational phase, as well as landfills passed into the after-care phase after 1 January 1999, are reported below (see question 5 in section II). The measurement of the composition or the volume of the surface water is deemed not to be required for 6 non-hazardous and 3 inert waste landfills (the numbers contain both landfills in operation and landfills in aftercare phase). The measurements were not required because of only minor environmental effects due to the size of the landfill and the nature of the waste. *The Åland Islands*: There are no such landfill sites. |
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| **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.** |
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| **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.** |
| There are no such exemptions in the Finnish legislation. The Åland Islands had previously a derogation concerning landfills on certain islands in its legislation but this possibility has been abolished from 1 September 2007 onwards by amending the Regulation 2007:7 on the landfill of waste (Landskapsförordning 2007:37 om ändring av landskapsförordningen om deponering av avfall). In the amendment, Section 25 (which previously contained the derogation on certain islands) was replaced by provisions on meteorological data. |
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| **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.** |
| Derogations for underground storages have been granted in the Government Decree on Landfills. According to Section 9 of the Government Decree, Sections 6-8 of the Decree are not applied to underground storages. Sections 6 and 7 contain provisions on the surface and bottom structures of the landfill and Section 8 contains provisions on the management of landfill gas. *Åland Islands:* The answer to Question 3 is "No". |
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| **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.** |
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| **(b) Give an indication of which wastes are classified at national level as biodegradable waste and which wastes as biodegradable municipal waste.** |
| "Biodegradable waste" means food and garden waste, paper, paperboard and cardboard waste, wastes from municipal waste water plants and food processing waste water plants, wastes produced in agriculture, forestry as well as other waste capable of undergoing aerobic or anaerobic decomposition. "Biodegradable municipal waste" (in the sense of Article 5(2) of the Landfill Directive) contains biodegradable waste generated in permanent dwellings, holiday homes, residential homes and other forms of dwelling, as well as biodegradable waste comparable in its nature to household waste generated by administrative, service, business and industrial activities.*The Åland Islands:* There are no different classifications.  |
| **(c) Indicate the experiences made with the practical application of the strategy.** |
| The Finnish National Strategy concerning Reduction of Landfilling of Biodegradable Waste was accepted in 2004. It defines the necessary actions in order to achieve in Finland the qualitative and quantitative targets set in the Landfill Directive for management of biodegradable wastes. The actions have been further specified in the new National Waste Plan until Year 2016 which was adopted in 2008. The Waste Plan among other things specifies the steps to be taken on prevention of waste and on the needs for new infrastructure for management of municipal wastes. The 50 %-target set in the Landfill Directive for the year 2009 (1 Mt) was achieved already in 2007, and the 35 %-target (700 000 tons) for the year 2016 was achieved in 2012. The amount of biodegradable municipal waste landfilled has decreased from 1 300 000 tons in 2000 to 275 000 tons in 2014. The latter figure corresponds 16 % of the total amount of biodegradable municipal waste produced in Finland in 2014. The decrease in landfilling municipal biodegradable waste is especially due to the increase in waste incineration capacity in the last years. The capacity for incineration (or co-incineration) of municipal waste has increased from 222 000 tons in 2006 to 1,5 Mt in 2015. The total amount of MSW incinerated and co-incinerated in 2014 was 1,3 million tons which corresponds 50 % of the total amount of biodegradable municipal waste produced in 2014. The target set in National Waste Plan for energy recovery of biodegradable MSW for year 2016 was 30 %.According to the National Waste Plan, the material recycling of municipal waste should be increased:* Composting and anaerobic digestion in biogas plants should increase from 7 % in 2006 to 20 % in 2016. The amount of municipal biowaste (food waste and garden waste) composted or treated in biogas plants was 382 000 tonnes in 2014 which corresponds to 15 % of the municipal waste produced that year. The amount of municipal waste treated by anaerobic digestion has this far been rather low in Finland, about 4 % of the total amount of municipal waste produced in 2014 (109 000 tons). The National Action Plan of Finland on renewable energy (issued by the Ministry of Employment and the Economy) aims at enhancing the co-production of heat and electricity from biogas. The target is to increase the use of biogas to 0,7 TWh by the year 2020. To facilitate the construction of new biogas plants, Finland has introduced from January 1, 2011 onwards feed tariffs for electricity produced from renewable resources (Act 1396/2010). However, the share of MSW treated by anaerobic digestion has remained on the same level (3-4 %) since 2010, although the number of biogas plants in operation has increased from 40 (in 2009) to 61 (in 2015).
* The recycling of paper and paper board has been very successful in Finland. Paper products are included under producer responsibility in Finland (Government Decree 528/2013). Producers of paper products have to arrange that at least 75 % of specified paper products sold and consumed are recovered. This aim has been achieved, the recycling rate was 77 % in 2015.

Restrictions on landfilling of biodegradable municipal waste have been introduced gradually based on the biowaste strategy (2004) and through the former Council Decision on landfills (861/1997, revised 2006) and new Government decree on landfills (2013). Landfilling of most organic wastes has been prohibited from 1 Jan. 2016 onwards by Government Decree on landfills (331/2013). Organic wastes may only be landfilled if their total organic content (TOC or LOI) is below 10 %. Wastes that are exempted from the prohibition are listed in the section 28. To construction and demolition waste the prohibition will apply from the beginning of year 2020.*The Åland Islands:* The strategy is operating as planned. |
| **(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.** |
| In 2013:* biodegradable municipal waste: 433 830 tons
* other biodegradable waste: 867 500 tons

In 2014:* biodegradable municipal waste: 275 400 tons
* other biodegradable waste: 836 600 tons

*The Åland Islands:* No biodegradable municipal waste and other biodegradable waste going to landfills in the Åland Islands. |
| **(f) Which adaptations of the strategy are envisaged?** |
| The aims of the Strategy have been further elaborated in the National Waste Plan until Year 2016 which was accepted by the Government in 2008. These actions include, among others, defining additional waste management capacity needed in order to replace municipal waste landfilling with alternative waste management options, increasing the recovery and use of biogas (including landfill gas), as well as increasing the recycling and energy recovery of all biodegradable wastes. The National Waste Plan contains the national waste prevention program (as required by Art. 29 of the Waste Framework Directive 2008/98/EC) which aims also to reducing the amount of biodegradable wastes produced. The Waste Plan contains a wide range of tools for the implementation of its goals, for example legislative measures, improving environmental permits, development of new services, increasing research, and development of supervision and guidance. A new National Waste Plan is currently being prepared and is intended to be finalised by the end of 2016.The Long-term Climate and Energy Strategy of Finland (issued in 2008) proposed a prohibition of landfilling of all biodegradable or combustible wastes by the year 2020. It was estimated that this measure could reduce the expected methane releases from landfills for 0,4 Mt CO2-equivalents/year in 2050, compared to the estimated CO2-reduction based on the targets of the Landfill Directive. Prohibition of landfilling of almost all organic waste came into force from the beginning of the year 2016. See also answer to questions 4(c).*The Åland Islands:* No adaptions of the strategy are planned. |

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| **5. Indicate the number of existing landfills:** |
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|  | Landfill for hazardous waste | Landfill for non-hazardous waste | Landfill for inert waste | Others (\*) |
| Total number of existing landfills | 25 | 92 | 7 |  |
| Number of these landfills complying with the directive | 23 | 90 | 7 |  |
| Number of landfills closed (no more depositing) between 1 January 2013 and 31 December 2015 | 0 | 14 | 1 |  |
| Number of landfills re-equipped | 0 | 0 | 0 |  |
| Rest capacity (tonnes) | 15 848 000 | 58 802 000 | 691 000 |  |
| (\*) where necessary, until the end of the transitional period; specify the type of landfill |

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| **6. What measures have been taken to ensure that the provisions of Article 10 concerning the costs of landfilling are met?** |
| The requirements of Article 10 have been implemented in the Waste Act (646/2011) and the Environmental Protection Act (527/2014). Section 20 of the Waste Act stipulates that the original waste producer or the present or previous holder of the waste is liable for costs arising from the waste. When receiving the waste the landfill operator becomes the new holder of the waste and thus liable for the costs. According to Section 21 of the Waste Act, costs related to setting up, use, closure and after-care of the disposal site shall be included into the costs arising from the waste disposal and into the fee covering these costs. The fee shall also cover the costs arising from lodging the financial guarantee for the landfill, and the estimated costs of the closure and after-care of the landfill site for a period of at least 30 years.According to the Environmental Protection Act, Section 59, the landfill operator shall give to the permit authority a financial guarantee covering the costs arising from the appropriate waste management. *The Åland Islands:* The operator shall take fees when accepting the waste, to cover the cost for the landfill and also for closure and after-care procedures (Regulation on Landfill of waste 2007:3 paragraph 24). |
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| **7. Give a general description of the measures provided to avoid adverse environmental effects of the closed landfills pursuant to Article 13?** |
| According to Environmental Protection Act (527/2014) all landfills require an environmental permit. Besides the requirements concerning the construction and use of the landfill, the permit has to include also the necessary provisions concerning the closure and after-care of the landfill, such as remediation of the area and prevention of emissions. Additionally, the permit of the landfill has to contain stipulations on how long time the landfill operator is responsible for the after-care of the landfill. (Environmental Protection Decree 713/2014, Section 16 )On application by the permit holder, relevant authorities or a third party suffering harm, the permit authority shall amend the permit if the pollution, or the risk the pollution causes, is substantially different than was originally expected (Environmental Protection Act, Section 89).The landfill operator is required to inform the supervisory authority of any significant changes in the operation (Section 170). The supervisory authority may prohibit the operator to continue operation that is in breach of the Environmental Protection Act, or give stipulations how the operation must be changed. The supervisory authority can also require the operator to repair the damages caused to the environment, or to conduct necessary studies on the influences of the operation to the environment in case there are grounds to suspect pollution prohibited by the Environmental Protection Act (Section 175). The proceedings can also be started based on an application of other relevant authorities, a third party suffering harm or certain NGOs defined in the Act (Section 186).*The Åland Islands:* The operator shall during the whole after-care period be responsible for controlling the environmental effects. This includes analyzing landfill gas and leachate. The groundwater shall also be monitored. (Regulation on Landfill of waste 2007:3 paragraph 23).  |
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| **8. Give a short description of the planning procedure for landfills with regard to Annex I, Section 1 (location of the landfill).** |
| The suitability of the location is one of the issues evaluated in the environmental permit procedure in accordance with the Environmental Protection Act (527/2014). The general requirements for the acceptable location of the landfill have been set in Section 4 of the Government Decision on Landfills (331/2013). According to it, landfill may not be located for example on a ground water area suitable for water supply, at waterways, in the sea, or in the vicinity of surface waters requiring specific protection, to an area reserved for nature or landscape protection or recreation, to an area reserved for protection of cultural patrimony, on a swamp, drainage divide, shattered zone, or to an area where there is risk of flooding, avalanches, landslides or subsidence.According to the Act on Environmental Impact Assessment Procedure (468/1994) and the Decree on Environmental Impact Assessment Procedure (713/2006), the environmental impacts of landfills shall be assessed before the environment permit can be issued. These include all landfills for hazardous wastes, landfills for municipal waste and sludge with annual capacity over 20 000 tonnes, and other landfills with annual capacity of over 50 000 tonnes. Also smaller landfills can be assessed if there is a risk of significant adverse effects. In the procedure, several optional locations for the landfill are assessed from the perspective of its environmental and health impacts as well as its impacts to the landscape, urban sites, cultural heritage and community structure. One of the options examined shall be a zero-option (no landfill constructed). *The Åland Islands:* A description of the effects on the environment (EIA) must be carried out, where all the requirements in Annex I, Section 1, must be considered. |
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| **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.** |
| Commonly used method for controlling the environmental burden of the landfill are for example drainage in order to collect and manage surface water and leachate; bottom, cover and vertical sealing structures; covering and landscaping; and snow ploughing in spring. Water treatment methods used in 2013-2015 were filtration and absorbance of the landfill water at 85 landfills and other treatment methods (such as physico-chemical treatment or biological treatment) at 33 landfills. At 66 landfills, surface waters and leachate were directed to a municipal wastewater treatment plant and at 5 landfills to an industrial wastewater treatment plant. From one landfill, surface waters and leachate were directed to a water body.*The Åland Islands:* The operator shall, when applying for a permit, present a plan for technical measurements of the parameters. The authority will consider if the proposed measures according to the plan are enough before the operator gets the permit.  |
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| **10. Have general or specific requirements as set out in Annex I been provided for inert waste landfills?** |
| No. *The Åland Islands:* The permit authority may make exceptions from the regulation when it is assessed to be safe for the environment, but it has not been done yet. |
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| **11. Have the requirements set out in Annex I, paragraphs 3.2 and 3.3 been reduced for certain landfills? (Yes/No)** | Yes |
| **If yes, give general information on these landfills.** |
| In some cases the requirements have been reduced or adjusted. The requirements concerning the landfill base and sides have been reduced at 12 landfills for non-hazardous waste and one landfill for hazardous waste in operation. The requirements concerning the leachate collection and surface sealing system have been reduced at 4 hazardous waste landfills and 22 non-hazardous waste landfills that are in operation, as well as at 60 non-hazardous landfills that are in aftercare phase.The reasons for the reductions were based on the minor environmental effects of the landfills in question. In addition, the hydrogeological conditions and other environmental effects of the landfill areas have been considered, as well as the quality of the deposited waste. On several landfills alternative structures have been used, such as: on the surface sealing the impermeable mineral layer has been replaced by a bentonite mat and the drainage layer has been replaced by a drainage mat. *The Åland Islands:* the answer to Question 11 is "No". |