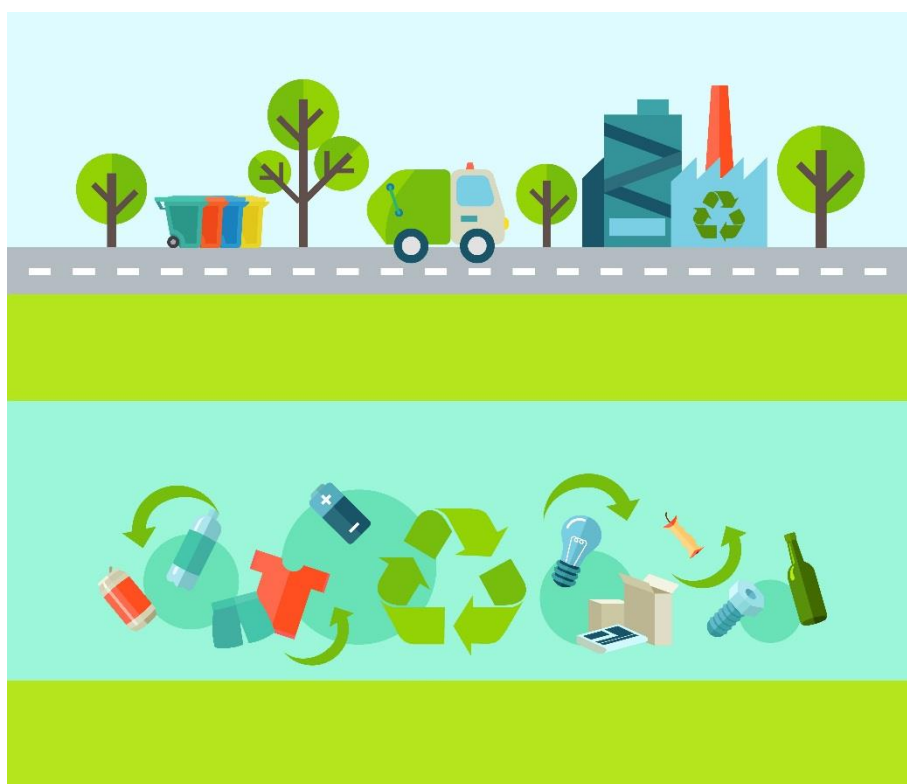


Waste Management in Europe: Main Problems Identified in EU Petitions and Best Practices (Updated Version)

Committee on Petitions



DIRECTORATE GENERAL FOR INTERNAL POLICIES
POLICY DEPARTMENT FOR CITIZENS' RIGHTS AND
CONSTITUTIONAL AFFAIRS
PETITIONS

**Waste Management in Europe: Main Problems
Identified in EU Petitions and Best Practices
(Updated Version)**
STUDY

Abstract

This study, commissioned by the European Parliament's Policy Department for Citizens' Rights and Constitutional Affairs at the request of the PETI Committee examines the application and proper transposition of European environmental law on waste by Member States, that is one of the recurrent topics addressed by the Committee on Petitions, which collects complaints from citizens in this matter and call for respect of the rule of law.

Waste management concerns all activities and actions that are required to manage waste, from its generation to its final disposal. This includes the collection, transport, treatment and disposal of waste, together with monitoring and regulation.

This study is an updated version of the previous research from 2011. Based on the results from 2011, new petitions from 2013 to 2016 were analysed with the aim to update the main findings and recommendations on the crucial areas of complaints. The results of the recently carried out assessment show that most of the analysed petitions still relate to deficits in the waste management system, the operating of existing installations (mainly landfills) and the permitting procedure for new facilities. In addition, two petitions address the improper management of radioactive waste which constitutes a new area of complaint (EURATOM Treaty) compared to the analysis in 2011. For all the main areas covered, best practice examples and recommendations for better approaches in future were updated and reviewed.

ABOUT THE PUBLICATION

This research paper was requested by the European Parliament's Committee on Petitions and commissioned, overseen and published by the Policy Department for Citizen's Rights and Constitutional Affairs.

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LIST OF ABBREVIATIONS

EC	European Commission
EP	European Parliament
ECJ	European Court of Justice
EIA	Environmental Impact Assessment
HLW	High Level Radioactive Waste
JC	Joint Convention
MS	Member State(s)
NPP	Nuclear Power Plant
SEA	Strategic Environmental Assessment
TFS	Transfrontier Shipments of waste
WFD	Waste Framework Directive
WMP	Waste Management Plan

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1. GENERAL INFORMATION AND METHODOLOGY

The Petitions Committee of the European Parliament receives numerous petitions pertaining to the issue of waste management. The analysis presented here builds on the analysis: "Waste management in Europe: main problems and best practices. External expertise on emerging regulatory and policy issues within the responsibility of the ENVI Committee in the area of Environmental policy", conducted in 2011 on behalf of the European Parliament.

The aim of the study from 2011 was to gain deeper insights into the problems which Member States face when trying to implement European waste legislation successfully, and to point out ways to improve the situation. The main focus within the broad topic of waste management was on treatment of mixed municipal solid waste.

The aim of the study presented here is to provide an update on the situation evidenced in the 2011 study, gain new insights on the problems Member States need to face towards a full standing implementation of EU waste legislation, and update the best practices and recommendations.

The main elements of the 2011 study have been included in the 2017 study to allow a direct comparison between the findings of both studies. They include:

- An overview of EU waste legislation and its implementation across EU Member States, and its comparison against the 2011 results.
- An assessment of possible problems based on a list of petitions provided by the Petitions Committee, and its comparison against the 2011 results.
- An assessment of the issues raised in the new petitions against EU legislation and of potential deficiencies in implementation or in the application of transposed national legislations, and its comparison against the 2011 results.
- Formulation of updated recommendations based on a selection of best practices (gathered at EU level) and on expert judgment.

As in the 2011 study, the following steps were made:

- General evaluation of the petitions brought forward by taking into account the main focus of complaint and the geographical location; identification of the problems addressed in relation the context of waste management and the waste type concerned.
- Legal assessment of the petitions brought forward to identify the pieces of EU legislation potentially addressed by the petitions.
- Clustering of petitions according to common characteristics (e.g. waste type, etc.), assessment of common trends and evidenced paths .
- In-depth analysis of the selected cases using independent sources of information (e.g. desk research and research of documents provided by regional authorities and civil society organizations, NGOs, and local media).
- Development of recommendations for improving the situation.

The general objective of this study was to pinpoint common problems and possible solutions which will be of general validity for the further development of the European waste management sector.

2. PETITIONS CONSIDERED

For this study, ten petitions (submitted between 2013 and 2016) were reviewed in detail. As a first step, the petitions were evaluated against the criteria defined in the 2011 study, in order to allow a direct comparison of the two studies. The defined criteria include parameters to describe and cluster the petitions such as: the focus of complaint, the type of waste and waste management considered, and the assessment of the EU waste law applicable to the case, or that the case might infringe.

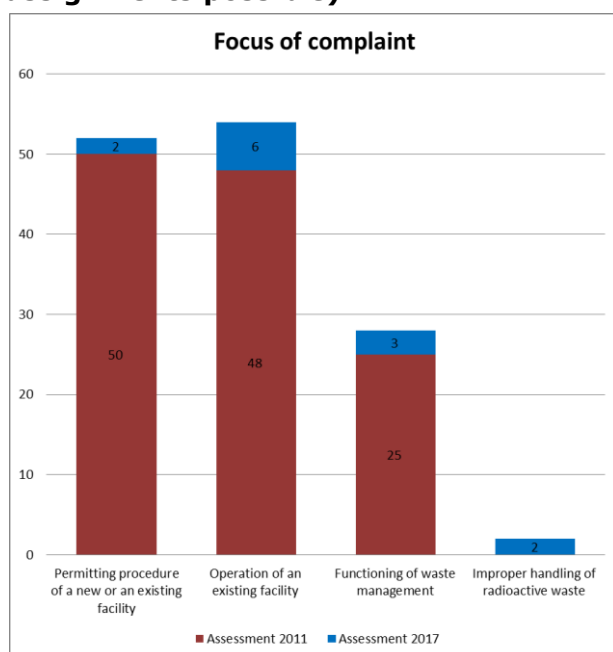
The following paragraphs describe the petitions and the results of the evaluation according to the defined criteria. Table 1 below provides an overview of the petitions at a glance and their focus of complaint, which are explained in detail in the following paragraphs within this Chapter.

2.1. Focus of complaint

The general evaluation of the petitions in the 2011 study included an identification of the main focus of the complaint raised by the petitioner. In the 2011 study, the focus of complains could be summarized in the following categories:

Issues related to permitting procedure for a planned or an existing facility, issues related to the operation of an existing facility, and deficiencies in the functioning of the waste management systems. While the first two categories are related to the operation of a specific (existing or planned) facility, the latter embrace a wider spectrum of issues, related for instance to the transcription of the EU waste management into national law. The figure below shows the distribution of the 10 petitions evaluated in this study, and benchmarks them against the results of the 2011 study. The red-scale bars show the results of the 2011 study; the blue-coloured bars show the results of the 2017 study.

Figure 1: Analysed petitions categorized according to the main focus (multiple assignments possible)



The graph highlights that in comparison to 2011, the focus of petitions in the 2017 study is now primarily linked to the proper operation of existing facilities, followed by issues related to the functioning of the waste management and by issues with permitting procedures. In

comparison to the 2011 study, a new category was identified, related to the improper handling of radioactive waste.

Table 1: Analysed petitions and their focus of complaint

Petition reference number	Title	Country	Permitting procedure and insufficient environmental impact assessment and public consultation	Possible negative environmental impacts through improper operation of waste management facilities	Deficiencies in waste management systems	Improper handling of radioactive waste
1418/2016	Radioactive toxic waste in Calabria	Italy				x
0615/2013	Waste management in Calabria	Italy			x	
0722/2015	Waste recycling plant in Torrent in Valencia	Spain	x	x		
1710/2013	Fyli landfill and its impact on the environment and the health of local residents	Greece		x		
1498/2016	Waste landfill in Vereknýe protection of the quality of groundwater	Slovak		x		
0518/2014	Possible risk posed by temporary storage facility for radioactive waste from Paks nuclear power plant	Hungary				x

Petition reference number	Title	Country	Permitting procedure and insufficient environmental impact assessment and public consultation	Possible negative environmental impacts through improper operation of waste management facilities	Deficiencies in waste management systems	Improper handling of radioactive waste
1137/2013	Infringement of national and EU environmental legislation resulting from the operation of the Mavrorachi landfill site in the province of Thessaloniki	Greece		x	x	
0586/2014	Alleged infringement by the Galician Waste Management Plan of EU law on waste management	Spain			x	
0528/2015	Failure to comply with Community law in the implementation of a plan for preventing and managing non-hazardous waste in the municipality of Echillais in the French Department of Charente-Maritime	France		x		
2622/2014	The non-hazardous waste storage facilities in the Montpellier urban area/l'Arbousier site in Castries	France	x	x		

2.2. The petitions in detail

Case 1: Petition 1418/2016 on radioactive toxic waste in Calabria (Italy)

Summary of petition

The petitioner requested a proper investigation and assessment of the situation in Calabria, where the presence of radioactive waste off the coasts of Calabria is suspected, due to increase of occurrence of leukaemia and other forms of cancer in the past years. In particular, the petitioner requested the competent local authorities to perform an assessment of radioactive levels in the Ionian Sea and on the coast, which might have been increased due to suspected cargoes allegedly sunk by criminal organizations to get rid of illegally shipped radioactive waste.

Facts

The petition refers to the problem of illegal disposal of radioactive waste operated by criminal local organizations, which is allegedly affecting the regional Calabria for the past three decades. Different investigations have been conducted since the 90es but unfortunately, proofs of existence of illegally dumped toxic and radioactive waste haven't been found until today.

The case, originated in the mid-90s when Francesco Fonti, a 'reformed mafioso', confessed that several ships containing radioactive and hazardous waste were allegedly sunk off the coast of Calabria, such as the case known as 'il relitto di Cetraro' (the wreck of Cetraro), which could never be found ¹.

Over two decades, Italian prosecutors have looked into more than 30 suspicious deep-water sinking. They suspect that Italian and foreign industrialists have acted in league with the 'ndrangheta' and possibly government agencies, to use the Mediterranean as a dumping ground. Several vessels were reported to have sunk in fair weather, to have transported suspicious cargos, having sent no mayday at the moment of the accident, or with reported vanished crew ².

A Committee of inquiry set up by the Italian Parliament to investigate on illicit activities related to waste management, already in 2005 declassified many confidential documents relating to the possible existence of national and international traffic in toxic and radioactive waste, managed by business and criminal lobbies³. These documents, available online, highlighted the involvement of organized crime, entrepreneurs, institutional entities as well as potential life threats against investigators⁴.

The case also got international fame, as Mr. Fonti and the Italian environmental NGO Legambiente claimed vessels were sent to Somalia and other developing countries such as Kenya and Zaire with toxic cargoes, which were either sunk with the ship or buried on land from local rebel groups in exchange for weapons. Fonti claimed that Italian TV journalist Iliara Alpi and her cameraman Miran Hrovatin (a case which remained unsolved until today) were murdered in 1994 in Somalia because they had seen toxic waste arrive in Bosaso, Somalia⁵. Also Natale De Grazia, the commander of the Italian Navy who was at the forefront

¹ <http://www.archivio900.it/it/articoli/art.aspx?r=relauto&id=5978>

² <http://www.repubblica.it/2009/09/sezioni/cronaca/nave-veleni/cimitero-navi/cimitero-navi.html>

³ <http://leg16.camera.it/465?area=5&tema=434&Relazione+sugli+illeciti+connessi+al+ciclo+dei+rifiuti+in+Calabria>

⁴ <https://archivio.camera.it/desecretazione-atti/commissione-parlamentare-inchiesta-sul-ciclo-dei-rifiuti-leg-XIV>; <http://www.alessandrobratti.it/docs/2017020935310515.PDF>

⁵ <https://www.theguardian.com/world/2009/sep/16/shipwreck-waste-mafia-italy>

of the investigation into the trafficking of radioactive and toxic wastes in a case known as the lost "Ships of Poison", died in 1995 under very mysterious circumstances.

Latest status available

National media⁶ reported in early 2017 that official documents from the DIA (Italian Anti-Mafia Investigation Directorate) contained information of about 52 'suspicious' ships sunk between 1995 and 2000 in the Mediterranean Sea. Nevertheless, several investigations have been carried out and expeditions made to verify the existence of these wrecks, unfortunately without success so far.

Cornering radioactivity levels, the ARPACAL (Regional agency for environmental protection in Calabria) published in February 2017 the report on the radioactivity levels registered during a targeted measuring campaign in the Calabrian coasts, in particular on the Jonic sea coast and around the province of Catanzaro⁷. The analysis of the 1,074 collected samples exclude any presence of radioactive contamination derived from anthropic activities. Calabria presents a natural radioactivity due to its geological morphology, which is abundant in radon and other naturally radioactive elements.

Nevertheless, an epidemiological study of Calabria Region on contaminated sites⁸ and several journalistic inquiries carried out by Italian media⁹, highlighted that in certain areas of Calabria (e.g. in the towns Africo and Gioia Tauro) there is an abnormal incidence of cancer illnesses and related deaths.

Unfortunately, despite more than thirty years of investigations and the occurrence of severe cancer-related sickness in certain parts of Calabria, the case is yet far from being solved and closed. Major concerns regard the possibility that toxic and radioactive waste might have been dumped anywhere (meaning, the problem would not just be 'confined' to sunken ships but might interest also the land) and will hardly be found.

Evaluation

The existing information suggests that a problem linked to illegal activities and illicit disposal of radioactive waste might exist, although the sunken ships could never be found.

Although the recent measurement campaign conducted by the ARPACAL would exclude, at least for the moment, the presence of radioactivity along the coast, the incidence of cancer-related illness in the local population is extraordinary: media recently reported that in Africo (town in the province of Reggio Calabria), with a population of about 3 thousands inhabitant, 180 persons died from cancer in the past 15 years and currently about 100 people are cancer sick, the youngest of which is just 19 years old and developed a cancer form which is normally triggered by high levels of radioactivity¹⁰.

In the future, the situation should be monitored and further investigation shall be done, especially since the presence of sunken ships cannot be fully excluded, and considering the risks associated to radioactivity and its persistence in the environment. Further measurement campaigns should be conducted in the future also in other provinces, in order to fully exclude

⁶<http://www.lastampa.it/2017/02/14/blogs/ecomafie/navi-dei-veleni-una-brutta-verit-viene-alla-luce-VziIV1boxgTQJ8bcumvfKO/pagina.html> (newspaper article: La Stampa, 14.02.17) (Last access: 23.01.2018).

⁷ ARPACA, 2017. « La Anurale Radioattività della costa Jonica », resoconto di attività. Link: <http://www.arpacal.it/index.php/arpacal/attivita/comunicazione/comunicati/1058-radioattivita-online-il-report-delle-misure-sulla-costa-jonica-catanzarese> (Last access: 12.12.2017).

⁸ <http://www.iss.it/publ/index.php?lang=1&id=2963&tipo=5>

⁹ https://www.iene.mediaset.it/video/calabria-una-nuova-terra-dei-fuochi_10564.shtml?r=q18-5a7618711cb83d818cdb2c975b0d03ff227c1141488d928f08259833a12d811e

¹⁰ <https://www.telemia.it/2016/10/africo-il-paese-dei-condannati-a-morte-lultimo-degli-ammalati-ha-solo-19-anni/>

the presence of radioactivity or other toxic dumped waste in the area, and to find the cause of the high cancer-related mortality in certain areas.

Case 2: Petition 0615/2013 concerning waste management in Calabria (Italy)

Summary of petition

This petition, presented in 2013, highlights the problem of inefficient waste management in the region Calabria, Italy. In particular, the petitioner expressed concerns regarding a possible waste containment emergency in the region due to improper waste treatment and disposal, and denounces the absence of measure for waste prevention and reduction.

The petitioners denounced that no biological waste processing was taking place and that the separate waste collection announced by the local authorities was not yet implemented to date.

Facts

The Commission replied to the petitioners in several occasions since the petition was presented, in the timeframe 2013-2016. It should also be noted that, in the framework of infringement procedure 2003/2077 regarding illegal landfills in Italy, the Court's ruling of 26 April 2007 (C-135/05)¹¹ recognised that Italy did not comply with EU legislation concerning the safe disposal of waste. A recent assessment of the situation shows that over 200 landfills are not yet compliant with the EU regulation, among which several sites in Calabria. In October 2012 the Commission decided to refer the case to the Court of Justice of the European Union for the second time under Article 260 TFEU (C-196/13). The case was closed in 2014, with the Court declaring Italy failing to adopt all measures necessary to ensure compliance with the EU waste Directive, and ordered the Italian Republic to pay the European Commission, into the 'European Union own resources' account, a lump sum of EUR 40 million¹².

In 2011 the waste management in Calabria was also evaluated by a Committee of inquiry set up by the Italian Parliament to control illicit activities concerning the waste cycle¹³. The Committee report prepared on the basis of the evaluation highlighted that Calabria waste management system is characterized by a low percentage of separate collection, numerous illegal landfills, weaknesses in the water purification system and hazardous special waste traffic. Moreover, it is also affected by the infiltration of organized crime in many different areas¹⁴.

In the meantime in 2013, the Commission published a roadmap specific for the Italian Southern regions, which included a series of measures to improve the waste management system (landfill tax, establishment of a SISTRI (Sistema di controllo della tracciabilità dei

¹¹ European Court of Justice (2007): Case C-135/05 - Judgment of the Court (Grand Chamber), 27 April 2007. European Commission v Italian Republic Failure of a Member State not complying with EU legislation concerning the safe disposal of waste.

¹² European Court of Justice (2013): Judgment of the Court (Grand Chamber), 2 December 2014. European Commission v Italian Republic Failure of a Member State to fulfil obligations — Directives 75/442/EEC, 91/689/EEC and 1999/31/EC — Waste management — Judgment of the Court establishing a failure to fulfil obligations — Non-compliance — Article 260(2) TFEU — Financial penalties — Penalty payment — Lump sum payment Case C-196/13 Link: <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:62013CJ0196>

¹³ <http://leg16.camera.it/465?area=5&tema=434&Relazione=sugli+illeciti+connessi>

[+al+ciclo+dei+rifiuti+in+Calabria;](#)

<http://parlamento.camera.it/dati/leg16/lavori/documentiparlamentari/indiceetesti/023/007/INTERO.pdf>

¹⁴ [http://www.ilfattoquotidiano.it/2017/10/05/ndrangheta-le-mani-del-clan-piromalli-su-depuratore-e-termovalorizzatore-sette-fermi-anche-ex-sindaco-di-villa-san-giovanni/3895317/;](http://www.ilfattoquotidiano.it/2017/10/05/ndrangheta-le-mani-del-clan-piromalli-su-depuratore-e-termovalorizzatore-sette-fermi-anche-ex-sindaco-di-villa-san-giovanni/3895317/)

[http://www.repubblica.it/cronaca/2017/05/11/news/ndrangheta_business_rifiuti_in_manette_capi_clan_de_stefa_no_operazione_coordinata_dda_reggio_calabria-165152932/ \)](http://www.repubblica.it/cronaca/2017/05/11/news/ndrangheta_business_rifiuti_in_manette_capi_clan_de_stefa_no_operazione_coordinata_dda_reggio_calabria-165152932/)

rifiuti) unit to prevent illegal practices related to waste management, etc.)¹⁵. In the course of 2014, the Commission undertook an in-depth analysis of the current waste management plan for the region of Calabria.

Between 2013 and 2014, the preparation of the Waste Management Plan compliant with the Waste Framework Directive for the Region Calabria was initiated. Relevant to this case are in particular the Directive 2001/42/EC on the assessment of the effects of certain plans and programmes on the environment (SEA Directive) and the Directive 2008/98/EC on waste (Waste Framework Directive). In particular, the SEA Directive foresees that certain plans and programmes which are likely to have significant effects on the environment must be subjected to an environmental assessment (so-called Strategic Environmental Assessment or SEA). The Directive further foresees that the SEA procedure must be carried out before the plan or programme is adopted and that the public must be consulted in the framework of the SEA procedure. The petitioner criticised the guidelines for the preparation of the new WMP approved by the Calabria regional government (Regione Calabria – linee guida)¹⁶: while acknowledging that these guidelines mark an improvement in separate collection and a decrease in the amount of waste to be landfilled, the petitioner considered that this was not enough and complained that the public was not being consulted on what the content of the new WMP should have been. Nevertheless, the Commission observed that, since the new Calabria WMP is still being drafted and has not yet been adopted, there is no breach of the SEA Directive in relation to the Calabria Waste Management Plan. However, in the framework of its ongoing own-initiative investigation, the process of adoption of this plan was meant to be monitored.

In addition, the Commission has been monitoring the execution of the above-mentioned judgment of the Court of Justice of the EU, including the clean-up of the relevant illegal landfills in Calabria. In 2014 the Commission launched an own-initiative investigation (EU Pilot) aimed at ascertaining that all the Italian regions, including Calabria, had the waste management plans compliant with the Waste Framework Directive. Within the above procedure, in December 2015, the Italian authorities confirmed that the Calabria waste management plan is under revision and should be approved by October 2016.

Latest status available

The Waste Management Plan for the Region Calabria compliant with the Waste Framework Directive was prepared and published in early 2016, covering the time frame 2017- 2022¹⁷. The measures foreseen to be implemented include a 'zero landfill' objective, so that just by products from the mechanical and biological treatment and non-recyclable waste will be landfilled. Targets for material recycling are established and their potential for achievement is assessed the Waste Management Plan is prepared in a way to fully comply with the Waste Framework Directive. All relevant documentation is publicly available for download on the ARPACAL website (Regional agency for environmental protection in Calabria)¹⁸.

¹⁵ European Commission (2013): Roadmap for South Italy – Services to support Member States' enforcement actions and inspections concerning the application of EU waste legislation. Link : http://ec.europa.eu/environment/waste/framework/pdf/IT_SOUTH_Roadmap_FINAL.pdf

¹⁶ Linee guida per la rimodulazione del Piano regionale di gestione dei rifiuti della Regione Calabria" contained in decision 49 of 11/2/2013. Link:

http://www.regione.calabria.it/ambiente/allegati/novit/linee_guida_rifiuti/linee_guida_pianorifiuti.pdf

¹⁷ Piano regionale Gestione Rifiuti-Convenzione Sogides S.p.A.- MATTM del 07.08.2015 « Rafforzamento delle Autorità Ambientali » « Adozione di Piani di gestione adeguati alla normativa (rifiuti). Ministero dell' Ambiente, Regione Calabria, Sogides_2016 Link:

http://www.consiglioregionale.calabria.it/ppa10/151/PIANO_MONITORAGGIO/1-PIANO_MONITORAGGIO.pdf

¹⁸ www.arpacal.it

A public consultation was also open from 26 July and for 60 days. All documentation was made available at the website of the Calabria Region (as the Strategic Environmental Evaluation)¹⁹.

Finally, the Waste Management Plan for the region Calabria compliant with the Waste Framework Directive was prepared and published, and the Commission was informed of its adoption in February 2017.

In conclusion, it emerged that it was not possible to identify infringements of the Calabria' Waste Management Plan with regard to the EU Directives on waste (Regione Calabria)²⁰.

Nevertheless, waste management in Calabria was recently included in another infringement procedure (2003/2077) which regards to non-compliant landfills on the whole Italian territory. From the assessment, it emerged that in Calabria there are 23 non-compliant landfills.

As further steps, the Commission will verify that the irregular landfills existing in Calabria are rehabilitated and that the waste management plan is implemented effectively and in compliance with the Waste Framework Directive.

Evaluation

Although the Calabria Waste Management Plan was adopted and no infringements with regard to the Waste Framework Directive was detected, considerable efforts will be necessary to provide the region with the necessary infrastructures, and for the closure of non-compliant landfills in a reasonable timeframe.

Hence, it is nevertheless recommended that the European Commission keeps monitoring the effective implementation of the Waste Management Plan in compliance with the Waste Framework Directive.

Case 3: Petition 0722/2015 concerning the waste recycling plant in Torrent in Valencia (Spain)

Summary of petition

This petition concerns the waste recycling plant 'Centro Valenciano de Valorización de Residuos (CVVR), located on lots 13 and 79 of Partida de la Contienda in Torrent, in the Spanish province of Valencia. The petition denounces suspected illicit waste activities happening in the plant, such as the presence of suspicious waste piles about 25 meters high and outdoor waste burning, since fires were witnessed in several occasions during night by citizens living in the surroundings. In one of these occasions, the fire burnt for over six months with the fire brigade unable to extinguish it. The petitioner claimed that the fire might generate considerable amounts of smoke and toxic emissions, hazardous for the health of the surrounding communities, and asked therefore for an investigation and the closure of the plant, since not complying with EU legislation and negatively affecting citizens health and environmental quality in the neighbouring area.

¹⁹ Valutazione Ambientale Strategica di cui al D.lgs. 152/2006 e s.m.i. per il "Piano Regionale di Gestione dei Rifiuti" Avviso di adozione della proposta di "Piano Regionale di Gestione dei Rifiuti". Link available at: <http://www.regione.calabria.it/ambiente/allegati/rifiuti/comunicazioni/dip. ambiente - vas avvio consultazione pubblica dip. 11 - ambiente e territorio del 22 07 2016.pdf>

²⁰ Waste Management Plan for the Region Calabria (Piano Regionale di Gestione dei Rifiuti) – Accessed in November 2017 Link: http://regione.calabria.it/ambiente/allegati/rifiuti/Piano%20regionale%20gestione%20rifiuti%202007/Piano%20dei%20rifiuti%20sups2_20.pdf

Facts

In 2008, the company Gemersa opened the 'Centro Valenciano de Valorización y Reciclaje' (Valencian Centre for Valorisation and Recycling), also known as 'Gemersa Gestión Medioambiental de Residuos', a pioneering installation in the region for the recycling of construction and demolition waste and similar industrial waste. The installation, built on a surface of about 25.000 square meters, had a capacity of 200,000 tons/year and five different processing lines for different waste types, and with a recovery rate which could go up to 92% of input material. Investment costs for the installation were about 3 Million Euros.²¹

At the end of March 2014, local press reported about a fire of big magnitude breaking out during the night, which required the intervention of fire brigades and more than twelve hours of work to extinguish the fire²². In May 2015, the press reported on another fire broke out due to uncertain causes²³.

The plant entered in the meantime in a state of insolvency and debits, and the permit to operate is revoked. Several local newspapers are reporting the case²⁴.

In July 2015, local newspapers reported about suspect traffic of trucks in the area of the plant, and neighbours witnessed the discharge of huge quantities of waste, described as 'mountains of waste' and the occurrence of several fires, one in particular burning over seven months. Local population is worried for the health and environmental harms caused by the fumes released by the fire, since the plant is located in the very proximity of houses and inhabited centre. Several persons reported breathing problems. The local population initiated a petition to the European Commission, with the support of the 'Fiscalía de Medio Ambiente' (Attorney General for the Environment) and the 'Conselleria de Medio Ambiente' (the Catalan equivalent of the Ministry of the Environment).

The case gained more political attention. In October 2016, the Deputy of the Parliament of the Council of Valencia, Rojo Domingo, urged the council to take measures against the valorisation plan, which is in a state of insolvency with mountains of waste construction material which caused up to three fires, which had to be considered an environmental disaster, in order to avoid severe damages to the environment.

On 1st July 2016, the Directorate for the Territory of Valencia (Dirección Territorial de Valencia, de la Conselleria de Agricultura, Medio Ambiente, Cambio Climático y Desarrollo Rural) withdrew the Integrated Environmental Authorization for the valorisation plant in Torrent, and mandate to dismiss the installation no 505-10/ AAI/CV from the registries of the installations of the community of Valencia (Registro de Instalaciones de la Comunidad Valenciana)²⁵.

Latest status available

To date, the treatment plant is not in the list of waste operators provided by the Spanish Ministry of the Environment,²⁶ but last information available shows that the plant is not completely and properly dismantled.

²¹http://www.lasprovincias.es/valencia/prensa/20070211/horta/mayor-centro-reciclaje-escombros_20070211.html (Last access: November 2017).

²²<http://laopiniondetorrent.es/castellano/not/53859/la-planta-de-reciclaje-de-gemersa-de-torrent-sufre-un-incendio/> (Last access: November 2017)

²³<http://www.lasprovincias.es/sucesos/201505/03/incendio-afecta-planta-reciclaje-20150503181204.html> (Last access: November 2017).

²⁴<http://www.lasprovincias.es/horta-morvedre/201507/03/denuncian-nuevos-vertidos-ilegales-20150703003716-v.html> (Last access: November 2017).

²⁵ Diari Oficial de la Generalitat Valenciana. Num 7973/06.02.2017, pag. 3 (Last access: November 2017).

²⁶http://consultas.cma.gva.es/areas/calidad_ambiental/residuos/BuscadorResiduos/buscador_residuos_avanzado.aspx?idioma=C (Last access: November 2017).

Evaluation

The petition was requesting the EC to intervene and take actions to withdraw the permit for operation to the Gemersa treatment plant. This concerns mostly Article 23 of the WFD on issue of permits. Nevertheless, the evolution of the case according to the information found through the desk research evidenced that the case was dealt by local authorities²⁷, and would suggest that after the withdrawal of the Integrated Environmental Authorization to operate, together with the state of insolvencies of the treatment plant, the plant was shut down and is no longer operating.

Case 4: Petition 1710/2013 on the Fyli landfill and its impact on the environment and the health of local residents (Greek)

Summary of petition

Fyli landfill in the Attica prefecture in Greece is a landfill which has already been in operation for 53 years. The petitioner claims that the operation of the landfill causes extremely serious health problems among local residents of all ages (including skin disorders and cancer) and hence social, domestic and financial problems. The petitioner claims that necessary measures have not been taken by the Greek authorities to protect the health of those affected. The petitioner asks for closing down the landfill and to rehabilitate the area in environmental and archaeological terms. He expresses concerns on the lack of toxicological and epidemiological monitoring and the failure to implement global best practices regarding waste management.

The petitioner questions the EU in keeping funding such massive mixed waste disposal sites, calling for the immediate and definitive closure of the landfill (Petition no 1710-2013).

Facts

Attica Prefecture includes the capital of Greece, Athens, and has a population of 3.8 million people. About 2.1 million tonnes of municipal waste is generated annually in this region (Recycling & Waste World 12-01-2017).

The Fyli sanitary landfill site at Ano Liosia is split into two phases. Phase one is currently being filled while phase two is currently being engineered for landfill operations. Phase two will start operations in 2018. The base of the landfill is lined and collects leachate, which is treated in a desalination plant on site using the reverse osmosis system. The fresh leachate entering the treatment plant is received in a settling tank. The heavies fall to the bottom of the tank from a suspension while flocculation is achieved with the light fraction remaining on the top of the water after coming out of suspension with the heavy fraction. The leachate is further treated to reduce its BOD, COD and ammoniac nitrogen content before being discharged off site into the sewer network. Methane is burnt on site using a series of flare torches. Electricity is harnessed from the burnt methane through a series of energy generator sets (Recycling & Waste World 12-01-2017).

On those segments of the Fyli sanitary landfill, which already have been closed for receiving waste, no up to date information on possible environmental impacts could be gathered.

As these old parts of the site may have caused damage to the environment and human health in the past, the status on remediation and protection activities needs to be assessed and monitored.

²⁷ Diari Oficial de la Generalitat Valenciana. Num 7973/06.02.2017, pag. 3

Latest status available

The company EDSNA (<http://www.edsna.gr/>) is responsible for the waste management and for treating municipal waste produced by the municipalities across the region of Attica (including the municipality of Fyli; Recycling & Waste World 04-01-2016²⁸). Disposal is done at a new landfill site, which construction has been financed by EU funds (located on an area of 364,000 m², permitted for waste input of 17 Mio m³ or 13.6 Mio tons, <http://www.edsna.gr/>). A specific share of the total amount of generated municipal waste is processed in a recycling and mechanical-biological treatment centre, starting its operation already in 2010. Only non-hazardous waste is landfilled at the new site. The landfill site complies fully with the requirements of the EU Landfill Directive (1999/31/EC) (Recycling & Waste World 12-01-2017²⁹).

According to information available at <http://www.edsna.gr/> the old landfills I and II of Ano Liosia are not operating any more. No information could be gathered if remediation activities have been started up to now to minimise harm to the environment and human health.

Evaluation

The Commission concluded in its answer from 31 October 2014 to the Petition 1710-2013 that the EC will continue to monitor the situation in Fyli, and the measures taken by the Greek authorities not only to guarantee an adequate functioning of the landfill but also to establish an adequate network of integrated waste facilities once the Fyli landfill reaches its maximum capacity. The Commission will use all available means to this end, including financial instruments, and share technical expertise with Greece.

According to case C-286/08³⁰ and following complaints, questions and European Parliament reports on the existence of illegal and uncontrolled landfills in Greece the European Court of Justice ruled that Greece failed to take all the necessary measures to ensure, as regards the management of hazardous waste, compliance with Articles 4 and 8 of Directive 2006/12/EC of the European Parliament and of the Council of 5 April 2006 on waste and Articles 3(1), 6 to 9, 13 and 14 of Council Directive 1999/31/EC of 26 April 1999 on the landfill of waste. With the ruling to case C-584/14³¹ the European Court of Justice declared that Greece failed to adopt the measures necessary to comply with the judgment of 10 September 2009 in Commission v Greece (C-286/08).

Rulings of more specific cases on other landfills have been published by the European Court of Justice (see C-202/16 on the disposal site in Temploni and C-677/13 on the Kiato landfill site).

The Member States authorities are responsible to take sufficient measures to close down and rehabilitate all the illegal landfills operating across the country and to comply with the EU legislation.

²⁸ Press Release from 04 January 2016: Recycling & Waste World - Athens municipality ensures efficient waste management service for City of the gods residents. <http://www.recyclingwasteworld.co.uk/in-depth-article/athens-municipality-ensures-efficient-waste-management-service-for-city-of-the-gods-residents/112017/> (Last access: November 2017).

²⁹ Press Release from 12 January 2017: Recycling & Waste World - EDSNA provides a sustainable waste management system for Attica. <http://www.recyclingwasteworld.co.uk/in-depth-article/edsna-provides-a-sustainable-waste-management-system-for-attica-1/150153/> (Last access: November 2017).

³⁰ European Court of Justice 2009: Case C-286/08 - Judgment of the Court (Grand Chamber), 10 September 2009 European Commission v Hellenic Republic Failure of a Member State to fulfil obligations of specific European Legislation. http://eur-lex.europa.eu/legal-content/en/TXT/PDF/?uri=uriserv%3AOJ.C_.2009.267.01.0021.01.ENG (Accessed in November 2017).

³¹ European Court of Justice 2016: Case C-584/14 - Judgment of the Court (Grand Chamber), 7 September 2016 European Commission v Greece Failure of a Member State to fulfil obligations of specific European Legislation, Greece has failed to adopt the measures necessary to comply with the judgment of 10 September 2009 in Commission v Greece (C-286/08).

In the area of environment, the European Union has adopted an important number of Directives containing minimum requirements. However, it should be noted that the European Commission does not have the competence to conduct on-site inspections in the Member States in order to investigate compliance with EU directives in the area of environment. Member States have the obligation to transpose the EU directives in the area of environment into national law and it is therefore the national legislation that applies to the concrete situations; thereafter, the relevant national authorities have the responsibility to adequately enforce the national provisions transposing the EU waste legislation. In addition, Member States have the duty to provide remedies sufficient to ensure effective legal protection in the fields covered by EU law (Petition No 1710-2013).

In the past, it was possible to finance from EU funds any type of waste treatment installations, including landfills, on condition they were in line with relevant EU legislation. The services of the European Commission received the closure documents from the Greek authorities of the Cohesion Fund project 2000-2006 'Construction of the second landfill of Western Attica in Fyli'. In the light of all these documents the Commission services determined that the project met the necessary requirements in order to receive the final payment. Thus the project is paid and closed.

Such approach was justified by the need to avoid uncontrolled dumping of waste. In the newer financing period (2014-2020) the financing of landfills was no longer possible (except on islands) unless they are part of an integrated waste facility. Moreover, the Greek authorities had to prepare a credible action plan to meet landfill diversion and recycling targets as a necessary condition to receive financing from EU cohesion funds.

Case 5: Petition 1498/2016 on waste landfill in Vereknýe protection of the quality of groundwater (Slovakia)

Summary of petition

The waste disposal facility (landfill) in the Vereknýe (in Hungarian, Vrakuňa in Slovak) district of Bratislava is situated on the backwater (one of the branches out of the main current) of the main Danube river. The facility was used for decades to store hazardous waste originating from the former chemical plant Dimitrov, imprudently stored into metal and plastic barrels placed directly on the soil. According to the information from the petitioner 90,000 tonnes of waste have been disposed. The petitioner claims that the soil is polluted among other chemicals with sulphur and chlorine, and that due to the inadequate method of storage, the pollution is perpetually leaking into the Little Danube and into the deeper soil layers (due to the loose pebble stone texture of the ground). Hazardous substances (benzene, toluene, xylol, arsenic, herbicides, lead, and copper) potentially reached the underground drinking water reserves causing a crucial harm to the environmental.

The petitioner calls for the toxic substances to be neutralised, the quality of the water and soil to be improved, and the effect of the pollution on the public health to be evaluated, pointing out that the current situation puts the drinking water supply of an entire region in danger. He asks that the European institutions supervise the rehabilitation process.

The petitioner claims that the Slovak government is in breach of the following EU legislation: Directive 2006/118/EC on the protection of groundwater against pollution and deterioration, Directive 2000/60/EC establishing a framework for Community action in the field of water policy, Directive 2006/12/EC on waste and Council Directive 91/689/EEC on hazardous waste, furthermore the current situation is contrary to the spirit of Article 37 of the Charter of Fundamental Rights of the European Union on environmental protection (Petition No 1498-2016).

Facts

The landfill was established in the old river bed of Malý Dunaj by decision of the local authority in Bratislava no. 1059 / 405-66 dated 14.7.1966. Storage of waste began in 1966. Waste was stored in layers until the 1979. In 1980, the entire landfill was covered with an inert material with thickness of about 2-6 meters. The landfill constantly increases in size, covering a surface of about 46,500 m². It is estimated that the volume of waste is about 90,000 m³ (Machlica A., Chovanec J. 2015). Geophysical measurements already took place to map and limit the landfill and the adjacent depressions, which in the past served to store various kinds of waste. Nine monitoring wells ranging up to Neogene clayey subsoil were built to monitor the landfill. Groundwater sample were collected from the wells for evidence of the alleged wide range of pollutants present in the landfill. In total, about 500 samples were analysed for heavy metals, volatile compounds, oils, pesticides and herbicides, and many other substances that could explain the current conditions of the potential environmental risk (Chovanec J., 2014³²). Concentrations of hazardous and polluting substances were found, especially sulphates, chlorides, total petroleum hydrocarbons, as well as high concentrations of cyclohexane derivatives and benzothiazole (Pospiechová O. 1991³³, Klaučo S. 1982, 1983, 2000, Vlasko I. 2000³⁴).

Latest status available

Because of the potential risk to the environment and the people living in this area, the site was inserted in the list of priorities for a detailed environmental investigation, which is part of the Ministry's geological work undertaken in 2015 and titled "Investigation of contaminated sites in selected locations of the Slovak Republic" parts "An investigation of the environmental burden in Bratislava Region: Vrakunská cesta - landfill CHZJD " (Machlica A., Chovanec J. 2015³⁵).

In August 2015, the Environment Ministry announced the results of an extensive geological investigation of the area, based on which it was concluded that the location of the waste dump represents an environmental as well as a health risk that requires remedial measures. The report states that sources of drinking water on Žitný Ostrov are not endangered and the problem is local, but it is still necessary to address the issue. The geological investigation confirmed long-standing suspects of high concentrations of dangerous agents like pesticides, herbicides, benzenes and arsenic, and said these were gradually spreading (The Slovak Spectator 28-10-2016³⁶).

In July 2017 the Water Management Research Institute began to inspect selected house wells situated near the landfill containing waste from the former Juraj Dimitrov Chemical Plant in the Bratislava borough of Vrakuňa (RTVS 20-07-2017³⁷). The testing of water from private wells in the Bratislava borough of Vrakuňa has confirmed contamination, which is why the

³² Chovanec J. (2014): Project - An investigation of the environmental burden in Bratislava Region: Vrakunská cesta - landfill CHZJD

³³ Pospiechová O. (1991): Monitoring of changes in groundwater quality in the area landfills to sites Ružinov, Vrakuňa, Smolenice, Boleráz, Budmerice, GÚDŠ, Bratislava.

³⁴ Klaučo, S. (2000): Evaluation of the current state of chemical waste dump on Vrakunská cesta - a summary of findings; Klaučo S. (1983): Žitný ostrov – regime monitoring and sampling of groundwater - part of Final Report. IGHP, Bratislava; Klaučo S. (1982): Engineering geological map, hydrogeological and geochemical exploration. IGHP, Bratislava.

³⁵ Machlica A., Chovanec J. (2015): CHZJD landfill in Vrakuňa – The sleeping load of Bratislava <https://aragoneneuropa.files.wordpress.com/2016/10/sleeping-load-of-bratislava-2015.pdf> . (Last access: November 2017).

³⁶ Press Release from 28 October 2016: The Slovak Spectator – Chemical time bomb in Vrakuňa still ticking <https://spectator.sme.sk/c/20369682/chemical-time-bomb-in-vrakuna-still-ticking.html> (Last access: November 2017).

³⁷ Press Release from 20 July 2017: RTVS – Inspection of selected wells launched in Bratislava due to landfill <http://enrsi.rtvs.sk/articles/news/138662/inspection-of-selected-wells-launched-in-bratislava-due-to-landfill> (Last access: November 2017).

locals are advised not to use the water for drinking, bathing or watering vegetables. The water tests results from 22 private wells rose concerns that the intake or use of the water might be dangerous for human health due to a nearby hazardous waste dump site. Analyses have been carried out for 68 contaminants, and only one of them, tetrachloroethene, exceeded the permissible levels (four times) for potable water. The tests were also positive for six more chemicals - hexachlorocyclohexane (alpha, beta, gamma, and delta) and atrazine and prometryn (TASR 04-08-2017³⁸).

On 2 February 2017 a Parliamentary Question (P-000750-17) was addressed to the EC claiming at the delay in the start of remediation actions comprising the following:

- Has the Member State complied with its environmental obligations under EC law in connection with the treatment of the dump, and is the delayed action by the Slovakian authorities in accordance with the objectives of the Landfill of Waste Directive, and with the provisions of the framework Directive on Waste and the directive on Hazardous Waste, and of the Water Framework Directive?
- Does the Commission agree that, in addition to the urgent treatment and disposal of waste, improving the quality of the soil and protecting underground water reservoirs are also important considerations?
- How does the Commission propose to assist the Member State in starting the process of clearing the waste dump as soon as possible?

The answer from the EC (15 March 2017) to the Parliamentary Question (P-000750-17) stated that regarding groundwater, the WFD and the GWD require Member States to comply with the principle of non-deterioration and to take measures to prevent and limit inputs of pollutants into groundwater. Under Article 5 GWD, Member States shall carry out trend assessments for groundwater bodies at risk and reverse upward trends, and may also assess trends for identified pollutants to verify that plumes from contaminated sites do not expand, deteriorate the chemical status of the groundwater body, and present a risk for human health and the environment. Trends and measures shall be summarised in RBMPs. Slovakia finished reporting these plans in October 2016. The Commission will conduct a systematic assessment of all current RBMPs and will report on WFD implementation by 2018.

The Slovak Operational Programme Quality of Environment (2014-2020) allows for the financing of measures in the area of remediation of environmental burdens. In this respect, following a notification of the 'Scheme for the remediation of environmental burden, in cases where this obligation passes to the state, SA.43981 (N2/2016)', the Commission Services are in close contact with the Slovak authorities in order to assess the compatibility of this project and any other land remediation projects with state aid rules.

In an additional Parliamentary Question (E-004146-17) from 21 June 2017 it was stated by the EC that remediation of environmental burdens in urban environment forms is part of the support for the 2014-2020 funding period from the European Regional Development Fund under programmes aimed at improving quality of environment. This programme is managed by the Slovak Ministry of Environment. The amount foreseen for remediation of environmental burdens in the programme Quality of Environment is EUR 180 million.

Evaluation

Available information suggests that the Vrakuňa landfill site has a negative environmental and health impact. Special attention needs to be paid on the fact that a drinking water reservoir is in close distance to the site location. A systematic assessment of the river basin

³⁸ Press Release from 04 August 2017: TASR – Well Water Tests in Vrakuňa Come Back Positive for Contamination http://195.46.72.16/free/jsp3/search/view/ViewerPure_en.jsp?Document=..%2F..%2FInput_text%2Fonline%2F17%2F08%2Fbtbex840y5.dat_160100.1%40Fondy&QueryText= (Last access: November 2017).

management plans under the GWD is recently carried out by the EC and will potentially identify need for action in terms of the requirements stipulated in the GWD.

Remediation activities need to be taken in order to minimise the harms to the environment and human health. In compliance with EU and national waste legislation the Member States need to take the necessary actions and apply the appropriate technical solutions (in terms of remediation measures and the disposal of chemical waste removed from the site).

European funding such as the European Regional Development Fund are appropriate sources to support the implementation of measures defined by the Member State authorities.

Case 6: Petition 0518/2014 on possible risk posed by temporary storage facility for radioactive waste from Paks nuclear power plant (Hungary)

Summary of petition

The petitioner reports that there are currently 312 fuel rods in each of the four reactors at the Paks nuclear power plant. Spent fuel rods are placed in a temporary storage facility located nearby (KKÁT). This is a surface facility, and the chambers containing the tubes which hold the rods are not sufficiently protected. The petitioner believes that a significant amount of radioactive material could be released into the atmosphere in the event of armed conflict or terrorist attack, endangering the lives of 1.5 billion people. The petitioner takes the view that the KKÁT unit does not guarantee protection against a possible nuclear weapons attack, and is asking the European Union to introduce an obligation or recommendation for radioactive waste to be stored deep underground.

The petitioner states that above-ground KKÁT constructions with its two-metre concrete chamber would be no protection against a bomb attack. It is proposed that the introduction of a requirement or a recommendation that radioactive waste needs to be stored at a certain depth below ground to protect Europe's natural environment.

Facts

In 2012, 7,477 cassettes were stored in the storage facility, corresponding to around 24 reactor blocks. The 'chamber' solution involves reinforced-concrete structures above or below the ground, based on a system of containers holding one or more groups of heating elements. Inside the container, which is on the surface, the cassettes containing the heating material are placed individually in thick-walled, hermetically-sealed steel tubes laid horizontally. The tubes are placed horizontally in rows in chambers surrounded by concrete walls. The reinforced concrete chambers containing the tubes, with their almost 2-metre-thick walls, provide adequate screening against radioactivity (<http://www.rhk.hu>, Petition No 0518/2014).

Latest status available

In order to store the spent fuel assemblies removed from reactors of Paks Nuclear Power Plant for an interim period of 50 years, a modular dry storage facility operates on a site adjacent to the site of the plant. The modules that are capable of storing fuel assemblies can be extended. The positioning of modules in a row allows the use of a common reception building and loading equipment. Spent fuel assemblies are stored individually in vertical tubes in the storage building. In order to prevent corrosion during long-term storage, the storage tubes are filled with nitrogen gas and are placed in vaults surrounded by concrete walls. The removal of residual heat generated by irradiated fuel takes place by natural flow of air through the vaults and the connected stack system. This cooling process is self-regulating.

The cooling air does not come into direct contact with the fuel assemblies as they are in a hermetically sealed environment (Convention on Nuclear Safety 2016³⁹).

The Interim Spent Fuel Storage Facility was extended by way of additional modules. Altogether 8,347 assemblies were stored in 19 storage modules at the end of 2015. Currently, 20 storage modules have operation license in the facility; four others are under construction, according to the future storage needs (Convention on Nuclear Safety 2016).

Evaluation

Council Directive 2011/70/EURATOM of 19 July 2011 establishing a Community framework for the responsible and safe management of spent fuel and radioactive waste imposes obligations on the Member States to establish and maintain a national framework for spent fuel and radioactive waste management. Member States must bring into force the laws, regulations and administrative provisions necessary to comply with the Directive by 23 August 2015. In accordance with the Directive, low and intermediate radioactive waste can be disposed near the surface. Nevertheless, it is broadly accepted at the technical level that deep geological disposal represents the safest and most sustainable option. The Implementing Geological Disposal of Radioactive Waste Technology Platform (IGD-TP) could facilitate Member States' access to expertise and technology.

The Commission participates with Member States in the European Nuclear Safety Regulators Group, which is an independent body set up to monitor issues of nuclear safety and radioactive waste.

Case 7: Petition 1137/2013 concerning the infringement of national and EU environmental legislation resulting from the operation of the Mavrorachi landfill site in the province of Thessaloniki (Greek)

Summary of petition

The Mavrorachi landfill site is located in the province of Thessaloniki. The petitioner claims that environmental rules have been breached in terms of operation of the landfill site and expresses concern at failure of the regional waste management plan. The petitioner criticises that the Thessaloniki local authorities did not ensure that the site is operating properly and safely.

The petitioner refers to existing infringements of Directive 92/43/EEC and 2009/147/EC and asks for higher take up of recycling initiatives through presenting several specific environmental protection measures.

Specifically, a hazard to public health and a threat to the delicate ecosystem of the vulnerable area of Koroneia are claimed by the petitioner (for which Greece was condemned by the EU Court of Justice under C-517 in 2011).

Facts

The Mavrorachi landfill site was opened on 26 November 2008. Local public have been voicing complaints since 2009, which mainly concern leachate leaks into waters draining into Lake Koronia.

³⁹ ÖKO Zrt. and Golder Associates (Hungary) Zrt. (2015): National Programme of Hungary on the management of spent fuel and radioactive waste: Strategic Environmental Assessment. http://www.kormany.hu/download/6/93/a0000/Nat_Progr_rad_waste_SEA_EnvRep_EN.pdf (Last access: November 2017); Convention on Nuclear Safety (2016): Seventh National Report Hungary prepared in the Framework of the Convention on Nuclear Safety. https://www-ns.iaea.org/downloads/ni/safety_convention/7th-review-meeting/hungary-seventh-national-report-to-the-cns.pdf (Last access: November 2017).

All non-recyclable waste is delivered to the Mavrorachi sanitary landfill site, which disposes of the waste produced across Thessaloniki Prefecture as well as additional non-recyclable waste from Halkidiki municipalities. The landfill site is operated by FODSA. The leachate collected from inside the landfill is treated in a desalination plant next to the landfill site. The desalination plant uses reverse osmosis technology and polishes the leachate to reduce the levels of biochemical oxygen demand (BOD), chemical oxygen demand (COD) and ammoniacal nitrogen in the leachate before being discharged off site through a consented discharge. Methane is flared off site using a series of flare torches for the different landfill cells (Recycling & Waste World 19-02-2015⁴⁰).

The executive committee of the Thessaloniki waste management authority, by decision of 7 August 2013, decided to lease four tankers to transfer surplus leachates from the Thessaloniki landfill site to the Thessaloniki treatment facility, partly due to climatic conditions. This decision was taken in order to ensure that the aforementioned surplus was managed appropriately and due to the fact that the existing number of tankers (two) was insufficient.

The Thessaloniki waste management authority's technical programme for 2014 included a list of work projects that needed to be carried out in order to guarantee the continued proper functioning of the landfill site (e.g. landfill maintenance work, enlarging the leachate treatment facility, construction of a temporary leachate storage reservoir in order to prevent leachates from overflowing, and construction of a sortation centre for recyclable waste, etc.). Some of the aforementioned projects/works are provided for under the regional waste management plan, while others cannot be carried out unless the regional plan is modified and only once the required studies have been carried out.

By Decision of the Governor of Central Macedonia of 2 March 2015 imposing a fine on the operator of the landfill, show that some problems concerning the functioning of the landfill were detected during inspections carried out by competent regional authorities on 19 December 2014, 28 January 2015 and 26 February 2015. The breaches for which the fine was imposed concerned more specifically the functioning of the landfill without a proper authorization and agreed Environmental Terms since 2013, the over-exploitation of the first 2 cells of the landfill, and the pollution of nearby water bodies (PETITION no 1137-2013).

Latest status available

The Commission has contacted the Greek authorities in 2015, in order to ask what measures have been taken to address the various breaches. The reply of the authorities' show that measures are being taken each time a deficiency, in the functioning of the landfill, is established. On that basis the EU Pilot file has been closed.

Evaluation

In its answer to the petition the Commission stated that the information sent by the petitioner is not sufficient to demonstrate that any violation of EU environmental laws has taken place. The steps referred to in the documents submitted to the Commission were taken to ensure the proper functioning of the landfill site and to reduce the nuisances and dangers that it could create, including nuisances resulting from the emission of odours. In its answer from July 2017 the Commission said that it stopped to investigate this issue and closed the related

⁴⁰Press Release from 19 February 2017: Recycling & Waste World - Waste collection in Thessaloniki <http://www.recyclingwasteworld.co.uk/in-depth-article/waste-collection-in-thessaloniki/73996/> (Last access: November 2017); Press Release from 21 February 2013: Commission takes Greece back to Court over illegal landfills and asks for fines. http://europa.eu/rapid/press-release_IP-13-143_en.htm (Last access: November 2017.)

EU Pilot file. During the last two years the Commission has not received any complaints regarding the functioning of the landfill.

The Commission recalls that Directive 99/31/EC on the landfill of waste and Directive 2008/98/EC on waste are the main pieces of legislation in this area. They lay down the general principles concerning proper waste management in all EU Member States as well as binding obligations on them as to how landfills should be constructed and should operate. Member States have not only the obligation to transpose the EU Directives in the area of environment into national law, but also the obligation to apply their provisions effectively and completely, in this case to the concrete situations relating to individual landfills. Thereafter, the competent national authorities – administrative and judicial – have the responsibility to adequately enforce the national provisions transposing the above Directives, i.e. to correct the situation and apply sanctions in case of violations of their provisions. As there is no infringement case and ruling specifically related to the Mavrorachi sanitary landfill site the Commission does not have the competence to conduct inspections in Member States in order to investigate compliance of a given landfill with the above EU Directives. On the other hand, the Commission notes that both directives have been properly transposed into the Greek national legal order. If issues of improper functioning indeed arise in the landfill site, the Greek competent authorities and the landfill operator should take action to ensure a compliant functioning of the facility (PETITION no 1137-2013).

Concerning the raised claims on a possible impact concerning an incineration plant at the area of Mavrorachi an assessment of health impacts from the incineration of municipal solid waste for different locations of Thessaloniki have been carried out (TSEGAS G. et al. 2015⁴¹). The results did not prefer the location Mavrorachi for best suitable site for an incineration plant and it is stated that even when taking into account maximum emission rates, the impact of such a facility to the public health is almost negligible, especially when compared to the impacts attributed to other sources of pollution, such as industrial activities, urban transportation and space heating.

Case 8: Petition 0586/2014 on alleged infringement by the Galician Waste Management Plan of EU law on waste management (Spain)

Summary of petition

The subject of this petition concerns the Waste Management Plan 2010-2020 for the Spanish region of Galicia. The petitioner claimed that the plan did not comply with the EU regulation on waste in several provisions. In particular, infringements regarded the application of the waste hierarchy principles (article 4) and the promotion of prevention and preparation for reuse and recycling (articles 9 and 11) with only 10.5% of waste reused or recycled. In addition, the petitioner claimed that the 'polluter pays' principle (article 14) was just marginally applied, and that the incinerators used by the Sociedade Galega do Medio Ambiente (SOGAMA) did not meet the energy efficiency requirements to be considered as reuse rather than disposal installations(Annex II of the Directive) due to its low energy efficiency. For this reason, the petitioner also claimed that biodegradable waste incinerated in the plant should have not been included in the calculation of waste-to-energy recovery targets established in article 5(1) of the Landfill of Waste Directive, meaning that real figures would have not corresponded to official figures. Finally, the petitioner alleged a breach of

⁴¹ Tsegas G. et al. (2015): Assessment of the health impacts from the incineration of municipal solid waste in Thessaloniki. Proceedings of the 14th International Conference on Environmental Science and Technology Rhodes, Greece, 3-5 September 2015. http://cest2015.gnest.org/papers/cest2015_00168_oral_paper.pdf (Accessed in November 2017).

article 6 of the Packaging and Packaging Waste Directive, since the Waste Management Plan was not complying with minimum packaging recycling targets.

In its petition, the petitioner called for sanctions to be applied to the Xunta de Galicia for the various alleged breaches, and for an end to the inefficient waste management model applied by SOGAMA incinerator.

Facts

The Galicia's 2010-2020 Waste Management Plan was approved by the council of the Government on January 2011⁴². An assessment study on environmental assessment of the Plan was also prepared⁴³, which entailed also a public consultation.

In the meantime, the Commission carried out the compliance-assessment check of Galicia's 2010-2020 Waste Management Plan. In its assessment, the Commission analysed several aspects highlighted in the petition, where claims were made regarding Galicia's Waste Management Plan failure to comply with EU waste directives such as targets on landfilling diversion, waste packaging targets and the implementation of waste prevention measures.

From the Commission's reply, it clearly emerged that some of these issues are competence of the national governments (e.g. in this case the Spanish government), that the Commission does not have the authority to intervene at regional level for what concerns waste management and the organization of the waste management system, hence the matter is left at the discretion of the competent regional authorities. Therefore, since these targets are set at national level, regions alone cannot be held accountable under EU law for not meeting the EU targets.

In addition:

- Spain has adopted its national programme in accordance with Article 29 of the WFD
- The Spanish national WMP contains a list of new waste recovery installations aimed at increasing the recovery (including recycling) rates in the region
- Concerning incineration, EU regions may opt for incineration with or without energy recovery provided that such choice does not preclude the achievement of recycling targets

Taking into account the elements provided by the petitioner, the Commission could not detect a violation of EU waste legislation.

Latest status available

A plan for the management of urban solid waste for Galicia covering the time 2010 – 2020 has been developed and enforced by the local government⁴⁴. In addition, the Galicia's Waste Management Plan was already updated twice since the petition was presented, namely the first time in 2014⁴⁵, and once recently in 2016⁴⁶.

The revised Waste Management Plans offer an actualization on the new available options for waste management, including new composting and recycling plants, etc.

⁴²http://sirga.xunta.gal/plans-e-programas-sirga?content=/Portal-Web/Contidos/Plan/plan_0001;http://sirga.cmati.xunta.es/c/document_library/get_file?folderId=190428&name=DLFE-22505.pdf

⁴³ http://sirga.xunta.gal/c/document_library/get_file?folderId=190428&name=DLFE-22501.pdf

⁴⁴ <https://www.retema.es/noticia/el-plan-de-gestin-de-residuos-urbanos-2010-2020-de-galicia-centrar-la-jornada-de-hoy-en-un-curso-de-la-uimp>

⁴⁵ http://sirga.xunta.gal/c/document_library/get_file?folderId=190428&name=DLFE-32998.pdf

⁴⁶ http://sirga.xunta.gal/c/document_library/get_file?folderId=190428&name=DLFE-39993.pdf

Evaluation

On the light of the evaluation of the European Commission and on the most recent available documents and updates of the Galician Waste Management Plan, no clear violation of the EU legislation could be detected.

Case 9: Petition 0528/2015 on failure to comply with Community law in the implementation of a plan for preventing and managing non-hazardous waste in the municipality of Echillais in the French Department of Charente-Maritime (France)

Summary of petition

The petition concerns a project to set up a multi-purpose centre for residual household waste (CDVM) in the municipality of Echillais in the French Department of Charente-Maritime. The petitioner challenges the conditions under which the Prefect granted the CVDM an operating licence on 15 October 2014, as well as the conditions under which the plan for preventing and managing non-hazardous waste (PPGDND), adopted by the Prefect on 27 September 2013 and providing for the construction of the CVDM, was drafted. In particular, the petitioner considers that the draft, approved by prefectural order, requiring existing incineration plants to be closed down and replaced with a new multi-purpose centre will seriously damage the environment and citizens' rights.

The petitioner's arguments are based mainly on non-compliance with the information provision and public participation requirements laid down in the Aarhus Convention and Directive 2003/35/EC ⁴⁷, stipulating that the public must be allowed to participate in the drafting of certain plans and programmes relating to the environment. In addition, the petitioners argue that the incineration centre fails to comply with Directive 2008/98/EC (Waste Framework Directive), with the Air Quality Directive (2008/50/EC), and considers that the plan for preventing and managing non-hazardous waste fails.

In 2015, the decisions granting an operating licence to the CVDM and adopting the PPGDND, was subject of two actions for annulment brought by the petitioner to the administrative court in Poitiers. The petitioner has also submitted a complaint to the European Commission, which declared the petition admissible on 19 January 2016.

The Commission does not take the place of national courts, which are responsible for applying EU law as they are for any rule of national law, since they have a universal jurisdiction in this area. In this case the Commission can only await the judgment of the national court and cannot consider the case lodged by the petitioner in parallel. As the same matter has been referred to the national courts, the Commission has not intervened further.

Facts

The petition concerns the operationalization of the multi-purpose centre for residual household waste (CDVM) in the municipality of Echillais in the French Department of Charente-Maritime. The permission for construction was approved in October 2013; the authorization for the exploitation of the incineration centre was approved in October 2014. Also, the environmental impact assessment and the request for operationalization of the incineration centre were approved in October 2014. The construction of the incineration

⁴⁷ [Directive 2003/35/EC of the European Parliament and of the Council of 26 May 2003 providing for public participation in respect of the drawing up of certain plans and programmes relating to the environment and amending with regard to public participation and access to justice Council Directives 85/337/EEC and 96/61/EC. OJEU, L.156, 25.6.2003](#)

centre started In May 2015. Following the decision of the administrative court of Poitiers on 23 March 2017, the annulment of the prefectural authorization for exploiting the incineration centre was withdrawn. A new request for permitting the operationalization of the plant was requested again on 12 May 2017.

In parallel, a public inquiry for the exploitation of the incineration centre was started between 28 September and 30 October 2017 based on the request presented by the Syndicat Intercommunal du Littoral (SIL)⁴⁸.

Latest status available

During the recent public inquiry mentioned above, 843 citizens voted against and 19 for the operationalization of the incineration centre ⁴⁹. The Association Pays Rochefortais Alert continues to denounce to the Courts the danger of this installation, which does not respect at all the seismic standards.

On November 14, the Public Reporter proposed in front of the Court of Appeal of Bordeaux to cancel the first authorization for exploitation of the plant (granted by the Prefect in 2014), due to violation of the Energy Transition Law ⁵⁰.

The final decision of the Court of Appeal of Bordeaux took place on 12 December 2017, when it was finally established that the multi-purpose centre for residual household waste can be exploited ⁵¹, although the Association Pays Rochefortais Alert is already taking further actions to let the authorization be revalued ⁵²

Evaluation

The petition was initially referring to infringements to Directive 2003/35/EC, Directive 2008/98/EC (Waste Framework Directive), and Directive 2008/50/EC (Air Quality Directive). Latest evidence suggests that the judicial dispute regarding the operationalization of the incineration plant has been an open issue until December 2017, when the authorization for the exploitation of the plan was finally signed by the competent authority.

Case 10: Petition 2622/2014 on the non-hazardous waste storage facilities in the Montpellier urban area/l'Arbousier site in Castries (France)

Summary of petition

The petition contests the extension of a landfill for household waste in the pit of a still operational quarry sited in the Montpellier urban in Castries, requests the diversion of waste from the landfill and the monitoring of environmental conditions including pollution and state of biodegradation in the interested site, and requires the remediation of the site and of the conditions to protect local biodiversity.

In particular, the petitioner refers to the following environmental issues as caused by the presence of the landfill: damage to the environment and human with a breach of Article 4 of Directive 2006/12/EC on waste, risks for contamination of groundwater, and risk for the preservation of the habitat of several protected species (especially Bonelli's eagle). In addition, the petitioner claims that the landfill is located in a geologically and hydro-geological unsuitable area (fractured karstic aquifer). The petitioner states also that the impact

⁴⁸ [Préfet de la région Nouvelle-Aquitaine- Direction regionale de l'environnement, de l'aménagement et du logement Nouvelle-Aquitaine. Exploitation d'un centre de valorisation des déchets à Echillais \(Charente- Maritime\). Avis de l'Autorité environnementale- 11 Aout 2017](#)

⁴⁹ <http://www.pays-rochefortais-alert.org/suite.php?numero=63>

⁵⁰ <http://www.pays-rochefortais-alert.org/suite.php?numero=64>

⁵¹ <http://nicolebertin.blogspot.co.at/2018/01/echillais-la-prefecture-autorise.html>

⁵² <http://www.pays-rochefortais-alert.org/suite.php?numero=67>

assessment study of the effect of the extension of the landfill is incomplete and methodologically not sound, and that the local administration had not yet established an alternative storage location after 2019 as advocated by the public inquiry.

Facts

The extension of the landfill in Castries has been in the focus of a dispute since its opening.

The actions undertaken by the local NGO Association 'Collectif Intercommunal Décharge de Castries' are well documented on the website of the association⁵³ and includes a list of official letter sent to the Environmental Ministry, the local authorities, etc. and further initiatives undertook to impede the enlargement of the landfill.

One of the main arguments of the Association to oppose to the enlargement of the landfill concerns the lack of separation of biodegradable waste from inert waste, causing infiltration in the water bodies in the surrounding, and representing a hazard for the biodiversity and human health, and the inadequacy of the environmental impact assessment on the landfill⁵⁴. The association requests the closure of the landfill by 2019, the surveillance and remediation of the landfill site, the improvement of waste management measures from the municipality towards recycling, waste reuse and prevention, and the application of the French regulation 2016-288 from 10 March 2016, which bans the mixing of bio-waste with inert waste and its deposition in the landfill.

Latest status available

Several demonstrations were organized in 2017 by the Association 'Collectif Intercommunal Décharge de Castries'⁵⁵, involving citizens to protest against the landfill. Several documented letter were sent to the pertinent authorities, e.g. the president of the Montpellier City, the Prefect, etc., but without obtaining a reply⁵⁶

Evaluation

Collected information suggests that Article 22 of the WFD on biodegradable waste has been infringed. Since diversion of biodegradable waste from landfilling is one of the most relevant targets of the EU waste Directive, and in the light of the new targets on biodegradable waste to landfill set in the new Circular Economy Package, further actions from the EC to verify the compliance of the landfill with the EU regulation are strongly suggested.

2.3. Type of waste management facility

As in the 2011 study, the evaluation of the petitions in the 2017 study evidences that the most problematic type of waste management facility concerns landfilling, followed (in the 2017 assessment) by other waste treatment facilities. Incineration plants were in the focus of just one petition, whereas no petitions addressed issues related to waste from production processes and industrial production.

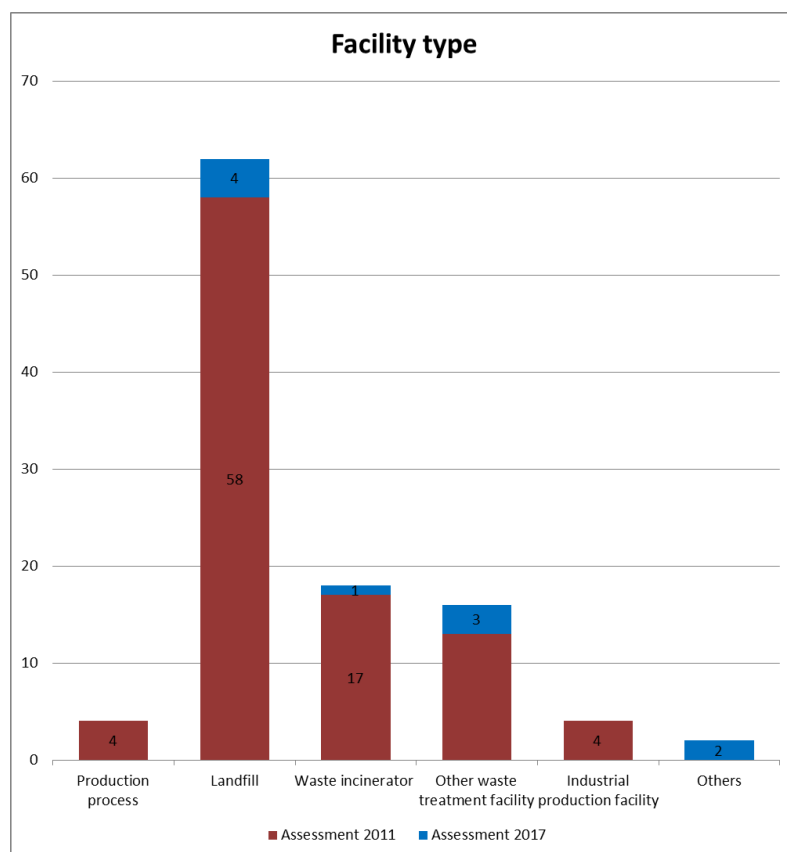
In addition, in the 2017 assessment a new category was created to include petitions dealing with radioactive waste (named "others"), and in particular with the handling and disposal of radioactive waste in controversial and dangerous manner.

⁵³ <http://dechargedecastries.fr/>

⁵⁴ <http://www.midilibre.fr/2017/06/20/montpellier-des-opposants-devant-l-unite-de-methanisation-ametyst,1524829.php>

⁵⁵ <http://dechargedecastries.fr/index.php/espace-information/actions-en-cours>

⁵⁶ <http://dechargedecastries.fr/index.php/espace-information/relations-avec-les-elus>

Figure 2: Analysed petitions categorized according to the type of waste management facility (multiple assignments possible)

2.4. Applicable EU legislation

The 2017 study confirms that the most important pieces of the EU legislation addressed or referred to by the petitions are directly related to waste and concern the Waste Framework Directive (2006/12/EC) and the Landfill Directive (1999/31/EC). In addition, one petition addresses also the Waste Packaging Directive (1994/62/EC).

Compared to the 2011 study, no petition addresses the Directive 2010/75/EU on industrial emissions (integrated pollution prevention and control) (covering former Directive 2000/76/EC on the incineration of waste and former Directive 2008/1/EC concerning integrated pollution prevention and control) since the problem of incineration highlighted in the 2017 study concern mostly illegal waste burning, out of control of the authorities.

The assessed petitions then refer in addition and in equal measure to a number of issues which are not directly related to waste but rather to its poor management. This concerns primarily environmental effects and health hazards, especially concerning biodiversity, and water and air quality, triggered by poor waste management and handling. These are:

- Directive 2001/42/EC on the assessment of the effects of certain plans and programmes (SEA Directive)
- Directive 1992/43/EEC on the conservation of natural habitats and of wild fauna and flora, Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds
- Directive 2006/118/EC on the protection of groundwater against pollution and deterioration (Groundwater Directive)

- Directive 2000/60/EC establishing a framework for Community action in the field of water policy (Water Framework Directive)
- Directive 2008/50/EC on ambient air quality and cleaner air for Europe

Furthermore, in some cases petitions raise issues on fields unrelated to the environment but rather relate to the basic functioning of the EU and the rights that it should grant to its citizens, namely: the Directive 2003/35/EC providing for public participation in respect of the drawing up of certain plans and programmes, the Aarhus Convention and the EU Charter of Fundamental Rights.

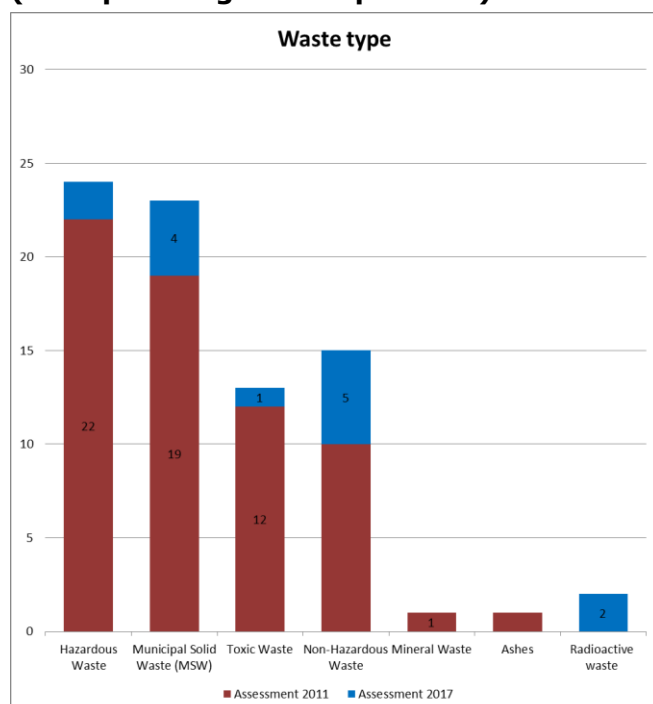
Finally, two of the petitions are related to handling of hazardous waste in illicit activities. Since these activities are illegal and not controlled by the local authorities, the problem is not a waste management one, and therefore it falls out of the scope of this study; nevertheless, illegal disposal of radioactive or toxic waste raises issues on the security of citizens and the environment. These address Directive 2011/70/EURATOM responsible and safe management of spent fuel and radioactive waste, Directive 2011/70/EURATOM responsible and safe management of spent fuel and radioactive waste, and Directive 2013/59/EURATOM basic safety standards for protection. These Directives are not even regulated by the EU itself, but rather from a supra-national perspective, namely by the EURATOM.

2.5. Waste types concerned

All evaluated petitions give some indication of the typology of waste addressed.

As in the 2011 study, problems related to MSW and non-hazardous waste are as prominent as toxic and hazardous waste. In comparison to the 2011 study, mineral waste and asbestos were not mentioned in the petition, whereas the topic of radioactive waste was.

Figure 3: Analysed petitions categorized according to the waste types concerned (multiple assignments possible)

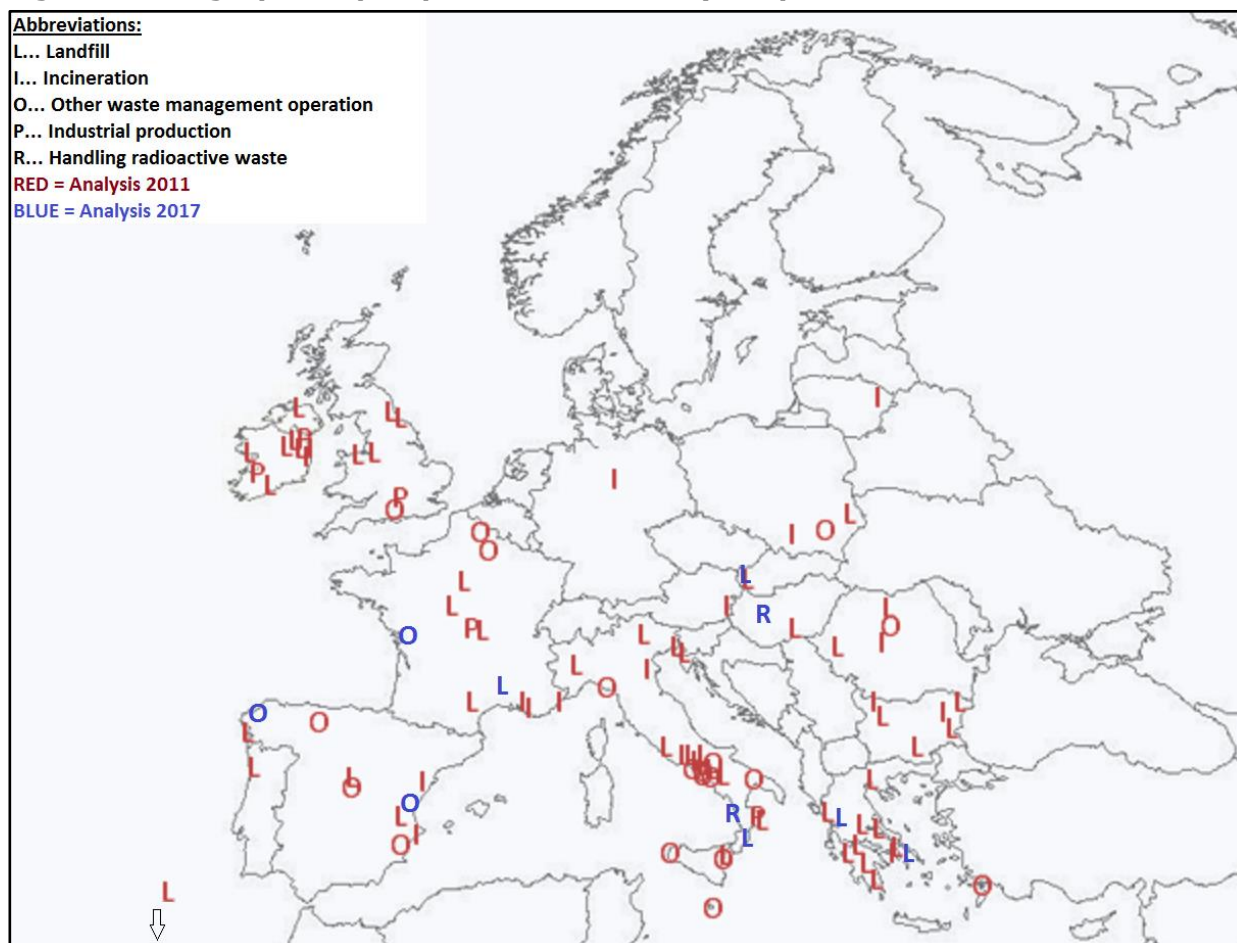


2.6. Geographical perspective

All evaluated petitions in the 2017 study refer to problems occurring at the local or regional level.

As in the 2011 study, most petitions refer to waste management installations in Southern Europe (Italy, Spain, Greece), and South-eastern Europe (Hungary, Slovenia). In the 2017 assessment, 2 petitions from Central - Northern Europe were analysed, namely from France.

Figure 4: Geographical perspective of the analysed petitions



3. LEGAL ASSESSMENT

In the following, main areas of possible insufficient implementation of European legislation are identified with regard to the analysed petitions (101 in 2011, and 10 in 2017). The main EU legislations addressed with potentially deficiencies in implementation or the application of transposed national legislation cover regulations in the waste management sector (see Table 2).

Table 2: EU waste legislation covered to major extend

Legislation	Number of petitions referring to in 2011 (101 analysed)	Number of petitions referring to in 2017 (10 analysed)
Directive 2008/98/EC on waste (Waste Framework Directive, WFD)	44	8
Directive 1998/31/EC on the landfill of waste	43	6

In addition, in the 2017 study two petitions addressed legislation related to the EURATOM Treaty 1957.

The general legal assessment of this study is based on and refers to the legal assessment of the study from 2011.

It is primarily for the Member States to ensure the correct implementation of EU legislation. The authors of this study are not in the position to confirm or suspend a breach of EU legislation in the analysed petitions, especially considering that comprehensive information is not available in most cases. The following analysis should rather provide an update overview on the EU legislations and specific requirements addressed within the petitions and, based on these outcomes, to formulate recommendations.

3.1. Waste Framework Directive

The European Directive 2008/98/EC on waste (Waste Framework Directive, WFD) stipulates in Article 4 that following **waste hierarchy** shall apply as a priority in waste prevention and management legislation and policy: (a) prevention; (b) preparing for re-use; (c) recycling; (d) other recovery, e.g. energy recovery; and (e) disposal. Deficiencies in implementation or the application of transposed national legislation of the hierarchy have been claimed in five cases from 2011 and in two analysed petitions of 2017 from *Greece and Spain*. In the latest European Commission's report on the implementation of waste legislation (EC 2015a) it is stated that both Countries have transposed the hierarchy in their national legislation (for Greece: Law 4042/2012 (OJG 24 A); and for Spain Law 22/2011 of 28 July).

Article 13 of the WFD requires that the Member States shall take the necessary measures to ensure that **waste management is carried out without endangering human health, without harming the environment** and, in particular: (a) without risk to water, air, soil, plants or animals; (b) without causing a nuisance through noise or odours; and (c) without adversely affecting the countryside or places of special interest. Deficiencies in implementation of this Article or the application of transposed national legislation has been claimed in 25 cases from 2011 and in four analysed petitions of 2017 covering *Greece, France*

and Slovak. In the latest European Commission's report on the implementation of waste legislation (EC 2015a) for Greece and Slovak information on the implementation of this Article is given by the Member States, for France no information is available. As this Article covers an important but very generic issue, checking the level of endangerment of the case *in situ*, as well as checking the compliance of the case with other Articles of the WFD and other pieces of the waste legislation, are crucial steps to assess possible deficiencies. This assessment can only be carried out by the Member States authorities in charge of the permitting, inspection and enforcement issues of the related cases.

Requirements for the **prevention of waste in general, specific qualitative or quantitative benchmarks for waste prevention measures and the requirements to prepare a waste prevention programme** are laid down in Article 9 and Article 29 of the WFD. Deficiencies in implementation or the application of transposed national legislation of this Article were not addressed in the cases analysed in 2011, and were addressed once in the 2017 study, namely from *Greece*. In 2014, Greece published a National Waste Prevention Strategic Plan⁵⁷ covering the period 2014 -2020. It covers the sectors on sale, retail, transport, households, private service activities, health care sector and public services. Main focus was laid on the waste streams food/organic, household/municipal waste, paper, packaging, waste electrical and electronic equipment (WEEE)/batteries. It defines inter alia measures for the prevention of waste at national level.

Article 11 of the WFD stipulates that Member States shall take measures, as appropriate, to promote the re-use of products, the preparing for re-use activities and high-quality recycling. Furthermore, specific **targets for preparing for re-use and the recycling of waste** materials are defined in Article 11. Deficiencies in the implementation of this Article or the application of transposed national legislation were not addressed in the cases analysed in 2011 but were issued in one of the analysed petitions of 2017 from *Greece*. According to the latest European Commission's report on the implementation of waste legislation (EC 2015a), Greece did not provide any data on the achievement of the recycling targets for household waste for any of the three years covered by this reporting period. No other up-to-date information concerning the achievement of the recycling targets for household waste is available for Greece at the EUROSTAT Website.

For waste treatment activities the operator needs to **obtain a permit from the competent authority** as required in Article 23 of the WFD, specifying inter alia the types and quantities of waste that may be treated, the types of treatment, and safety and precautionary measures to be taken. Deficiencies in the implementation of this Article or the application of transposed national legislation were issued in 13 cases from 2011 and in one analysed petitions of 2017, namely from *Spain*. In the latest European Commission's report on the implementation of waste legislation (EC 2015a) it is stated that in Spain waste treatment operations may only be carried out by authorised establishments or undertakings, in accordance with the provisions of Article 27 of Law 22/2011 of 28 July on the permitting of waste treatment operations. All Autonomous Communities carry out inspections prior to granting permits, and later on annual inspection plans.

Article 28 of the WFD stipulates that Member States shall ensure that their competent authorities **establish one or more waste management plans**. The waste management plans shall set out an analysis of the current waste management situation in the geographical entity concerned, as well as the measures to be taken to improve environmentally sound preparing for re-use, recycling, recovery and disposal of waste. Deficiencies in the implementation of this Article or the application of transposed national legislation were issued

⁵⁷ <http://www.ypeka.gr/LinkClick.aspx?fileticket=2Y2%2B%2BPSM4P0%3D&tabid=238&language=el-GR>

in 2 cases from the 2011 study and in one of the analysed petitions in the 2017 study, namely from *Italy*. In the latest European Commission's report on the implementation of waste legislation (EC 2015a) it is stated that the Italian Legislative Decree No 205/2010 correctly transposed into Italian law the provisions of Directive 2008/98/EC. Specifically, Article 199 of Legislative Decree No 152/2006 establishes the required content of waste management plans in accordance with Article 28 of the Directive. Paragraph 11 of the same article imposes an obligation on the Regions to inform the Ministry promptly of the adoption or revision of waste management plans and prevention programmes. Paragraph 12 introduces the obligation to make these public, if necessary by publication on the websites of the competent local authorities. With regard to the analysed petition in 2017 from Italy, the Waste Management Plan for the Region of Calabria was prepared and published in early 2016 (Piano Regionale Gestione Rifiuti).

Concerning the **responsibility for waste management**, Article 15 of the WFD stipulates that the Member States shall take the necessary measures to ensure that any original waste producer or other waste holder either: 1) carries out the treatment of waste himself, or 2) delegates the waste treatment to a dealer, establishment or undertaking which carries out the operations in accordance with Articles 4 and 13. Deficiencies in implementation of this Article or the application of transposed national legislation were issued in 8 cases from 2011 and in one of the analysed petitions of 2017, namely from *Greece*. In the latest European Commission's report on the implementation of waste legislation (EC 2015a) it is stated that in Greece, according to the national legislation, the producer / holder of the waste is responsible for waste management. Moreover, the municipalities and the waste management bodies are responsible for municipal waste management. Undertakings or establishments that are involved in waste management shall follow the environmental permits issued either for collection and transport, or for final recovery or disposal. In case of infringements civil, administrative and / or criminal penalties are imposed.

Article 36 on **enforcement and penalties** of the WFD stipulates that Member States shall take the necessary measures to prohibit the abandonment, dumping or uncontrolled management of waste. Provisions on the penalties applicable to infringements of the provisions of this Directive shall be laid down. The penalties shall be effective, proportionate and dissuasive. Deficiencies in implementation of this Article or the application of transposed national legislation were not addressed in the cases analysed in 2011 but were issued in two of the analysed petitions of 2017 covering *France and Greece*. In the latest European Commission's report on the implementation of waste legislation (EC 2015a) it is stated that in Greece administrative and civil penalties are regulated by Law 1650/1986 (160 A), as amended by Law 3010/2003 (91 A), Law 4014/2011 (209 A) and Law 4042/2012 (24 A). No information on the implementation in France is given.

In addition, following Articles of the WFD have been identified to be in focus, but covering a limited number of cases of the analysed petitions in terms of deficiencies in implementation or the application of transposed national legislation:

- Article 3 – Definitions (2011: 1 case; 2017: 0 cases);
- Article 14 – Costs and polluter-pays principle (2011: 0 cases; 2017: 1 case);
- Article 16 - Principles of self-sufficiency and proximity (2011: 7 cases; 2017: 0 cases);
- Article 22 – Separate Waste Collection Schemes (2011: 0 cases; 2017: 1 case);
- Article 31 – Public participation (2011: 0 cases; 2017: 1 case).

3.2. Landfill Directive

The European Directive 1999/31/EC on the landfill of waste stipulates in Article 7, Article 8 and Article 9 requirements for the application for a permit, the conditions of the permit and the content of the permit. In addition, the **general requirements on the landfills concerning location, the water control and leachate management as well as the protection of soil and water** are laid down in Annex I. Deficiencies in implementation of these requirements or the application of transposed national legislation were issued in 23 cases from 2011 and in two of the analysed petitions of 2017 from *Greece*.

In the latest European Commission's report on the implementation of waste legislation (EC 2015b) it is stated that in Italy, the Landfill Directive was transposed into the national legislation through the Legislative Decree No 36 01/13/2003 (OJ, No 59 suppl. ord. n. 40, 12/03/2003). In Greece, the Landfill Directive was transposed into the national legislation through the Joint Ministerial Decision (JMD) 29407/3508/2002 (OJG 1572 B/16.2.2002) "Measures and terms for the Landfill of wastes".

In Article 5 of the Landfill Directive it is laid down that Member States shall set up a national strategy for the implementation of the **reduction of biodegradable waste going to landfills**. This strategy should include measures to achieve the defined targets of the Directive by applying in particular recycling, composting, biogas production or materials/energy recovery. Deficiencies in implementation of these requirements or the application of transposed national legislation were not addressed in the cases analysed in 2011, but has been issued in two of the analysed petitions of 2017 covering *France and Spain*.

In addition, following Articles of the Landfill Directive have been identified to be in focus of the analysed petitions in terms of deficiencies in implementation or the application of transposed national legislation in cases analysed in 2011 only:

- Article 6, Article 11 & Annex II & Council Decision 2003/33/EC – Waste acceptance (2011: 9 cases; 2017: 0 cases);
- Article 14 – Existing landfills to comply with the provisions of the Directive (2011: 8 cases; 2017: 0 cases).

3.3. Legislation on the management of radioactive waste and spent fuel

New and not covered in the analysis of petitions in 2011 is the issue on radioactive waste which is, according to Article 1 of the European Waste Framework Directive, excluded from the scope of the WFD. Relevant legislation for the management of radioactive waste is based on the EURATOM Treaty of 1957. The EURATOM Treaty (consolidated version of March 2010) creates a primary legal basis regarding nuclear waste explicitly referring in:

- Article 37 – 'plan for the disposal of radioactive waste';
- Article 62 – 'special fissile materials produced in the territories of Member States';
- Annex I – Fields of Research concerning Nuclear Energy referred to in Article 4 of this Treaty, IV. Processing of radioactive material, 5. Concentration and storage of useless radioactive waste;
- Annex II – Industrial Activities referred to in Article 41 of this Treaty, 12. Facilities for the industrial processing of radioactive waste, set up in conjunction with one or more of the facilities specified in this list;
- Annex IV – List of Goods and Products subject to the Provisions of Chapter 9 on the Nuclear Common Market, List A - waste-processing equipment.

Based on 'The EURATOM Treaty' the following secondary EURATOM legislation with major relevance for nuclear waste and spent nuclear fuel management is in place and has or had to be transposed into national law of EURATOM Member States:

- 2011/70/EURATOM on responsible and safe management of spent fuel and radioactive waste (2 petitions in 2017; no petition in 2011);
- 2014/87/EURATOM on nuclear safety of nuclear installations (1 petitions in 2017; no petition in 2011);
- 2006/117/EURATOM on supervision and control of shipments of radioactive waste and spent fuel (1 petitions in 2017; no petition in 2011);
- 2013/59/EURATOM on basic safety standards for protection (2 petitions in 2017; no petition in 2011).

The two petitions from the analysis in 2017 which refer to improper management of radioactive waste are:

- Illegal disposal of radioactive waste operated by criminal local organizations, which is allegedly affecting the regional Calabria (Petition 1418/2016, Italy);
- Possible risk posed by temporary storage facility for radioactive waste from Paks nuclear power plant (Petition 0518/2014, Hungary).

In Hungary one nuclear power plant with four reactors was in operation in 2017. Italy has no operating nuclear reactors since the early 90es, but 4 units under decommissioning, one unit never put into operation. It has to be noted that nuclear or radioactive waste is not only produced in Nuclear Power Plants (NPP) but also in other kind of industrial, medical or research facilities as well as the mining sector. The topic of proper radioactive waste management as covered by the pertinent EURATOM Directives is therefore also relevant for EURATOM MS, which are not using NPPs.

Hungary and Italy are both EURATOM Member States, the EURATOM Treaty establishes the primary community legislation within the relevant area and creates basis for secondary legislation such as EURATOM Directives (which has to be transposed into national legislation) and EURATOM Ordinances with immediate validity.

With regard to the analysed cases it is important to consider the respective definitions for disposal and storage of radioactive waste and spent fuel:

- Disposal means the emplacement of spent fuel or radioactive waste in a facility without the intention of retrieval (2011/70/EURATOM Article 3 (3));
- Storage means the holding of spent fuel or of radioactive waste in a facility with the intention of retrieval (2011/70/EURATOM Article 3 (14)).

The pertinent EURATOM Directives provide no technical details on how radioactive waste management and shipment has to be performed, as it lays in the responsibility of the EURATOM MS. Nevertheless international Conventions (such as the IAEA 'Convention on Nuclear Safety' (CNS) or the 'Joint Convention' (Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management – JC) are referred as well as state-of-the-art science and technology in management of radioactive waste and spent fuel.

Illegal disposal of radioactive waste operated by criminal local organizations, which is allegedly affecting the regional Calabria is relevant under the listed EURATOM directives and even directly under 'The EURATOM Treaty' as it may conflict with proper management of radioactive or nuclear waste, creating a danger to the environment and the general public as well as future generations and workers in case, by ionizing radiation. Compliant transposition

of the Directives lays under the responsibility of the EURATOM MS, Italy in this case. The European Commission can only take actions if significant reasons demonstrate that Italy does not comply with a full and timely transposition and deficiencies of the Italian regulatory and supervision system and the enforcement of law are identified and documented.

According to the report on progress of the implementation of Directive 2011/70/EURATOM, the concepts for disposal of intermediate level waste, high level waste and spent fuel as per Article 12(1) of the Directive (e.g. site selection, development of design) are not described comprehensively in most of the Member States, often due to the need for policy decisions to be made or sites to be selected. Finland, France and Sweden have so far selected sites, demonstrating the challenges of moving from the planning stage to practical implementation. Globally, Finland is the first country where the construction of a deep geological facility for high level radioactive waste (HLW) including spent nuclear fuel has begun and is expected to be in operation by 2022, while France and Sweden expect to start the operations by 2030. For Hungary the start of operation of such a facility will be supposedly in 2065 (EC 2017).

In the mean time spent nuclear fuel as the main source of HLW is stored in interim storage facilities (dry and wet storage, frequently near or onsite to NPPs).

Directive 2011/70/EURATOM defines no technical specifications about (intermediate) storage or (final) disposal/repository of radioactive waste, which remains under the responsibility the EURATOM MS as part of the national political and regulatory process. Nevertheless important elements are established on Community level, such as stipulated in Directive 2011/70/EURATOM:

Chapter 1 – Scope, definitions and general principles

- Article 4 – General principles (including a national policy on radioactive waste management) stipulating that ‘...the ultimate responsibility for the safe and responsible disposal of [those] materials, including any waste as a by-product, shall remain with the Member State or third country from which the radioactive material was shipped.’;

Chapter 2 – Obligations

- Article 5 – National framework; Article 6 – Competent regulatory authority; Article 7 – Licence holders; Article 9 – Financial resources ; Article 11 – National programmes ; Article 12 – Content of national programmes; Article 14 – Reporting.

Directive 2014/87/EURATOM sets the frame for nuclear safety related issues on site of Nuclear Power Plants, including frame conditions of storage of spent fuel under national responsibility. There are no specific obligations for underground (intermediate term) storage of radioactive and/or nuclear waste or underground disposal.

3.4. Other Directives

In addition to the WFD, the Landfill Directive and the legislation on the management of radioactive waste, the analysed petitions in the 2017 study refer to possible deficiencies in implementation or the application of transposed national legislation of the following EU legislations:

- EU Charter of Fundamental Rights (1 petition in 2017; no petition in 2011);
- Directive 2003/35/EC providing for public participation with respect to the drawing up of certain plans and programmes and Directive 2001/42/EC on the assessment of the effects of certain plans and programmes (SEA Directive) (1 petition in 2017; no petition in 2011);
- Directive 1992/43/EEC on the conservation of natural habitats and of wild fauna and flora (2 petitions in 2017; 10 petitions in 2011);

- Directive 2009/147/EC on the conservation of wild birds (2 petitions in 2017; 2 petitions in 2011);
- Directive 2006/118/EC on the protection of groundwater against pollution and deterioration (Groundwater Directive) (2 petitions in 2017; 3 petitions in 2011);
- Directive 2000/60/EC establishing a framework for Community action in the field of water policy (Water Framework Directive) (2 petitions in 2017; 4 petitions in 2011);
- Directive 2008/50/EC on ambient air quality and cleaner air for Europe (1 petition in 2017; 3 petitions in 2011);
- Directive 1994/62/EC on packaging and packaging waste (1 petition in 2017; no petition in 2011).

Following legislation was issued in the analyses of 2011, but are not covered by the petitions analysed in 2017:

- Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters (Aarhus Convention);
- Directive 2010/75/EU on industrial emissions (integrated pollution prevention and control) (covering former Directive 2000/76/EC on the incineration of waste and former Directive 2008/1/EC concerning integrated pollution prevention and control);
- Directive 86/278/EEC on the protection of the environment, and in particular of the soil, when sewage sludge is used in agriculture;
- Directive 98/83/EC on the quality of water intended for human consumption.

4. MAIN PROBLEMS IDENTIFIED AND BEST PRACTICES

In addition to the three categories for thematic areas of problems (see also focus of complaint in Chapter 0) outlined in the 2011 study, one category on 'improper handling of radioactive waste' has been further introduced for describing the main deficiencies and problems of the analysed petitions.

In the following paragraphs the main problems identified in the study of 2011 are complemented by the findings of the analysis carried out in 2017.

4.1. Thematic area 1: Permitting procedure – Insufficient environmental impact assessment and public consultation

The main deficiencies identified in the 2011 study are:

1. A non-compliant landfill received a permit.
2. Stakeholder involvement is denied based on the argument that a fast permitting process is necessary to establish a compliant waste management system as fast as possible.
3. The environmental impact assessment required for the plant permit was based on predictions which proved to be inaccurate.
4. In several instances the information provided by authorities to interested and affected parties and their involvement seem to be imperfect.
5. In the supplementary material attached to one of the petitions, there are indications for conflicts of interests within the competent authority.
6. The neighbouring population still felt that, in spite of the environmental impact assessment, they and the environment were at risk.

Following new or supporting deficiencies compared to the results of the 2011 study have been identified:

- Inadequate environmental impact assessment has been carried out at a landfill site (in line with bullet 6 of results of 2011) (Petition 2622/2014).
- Operation of a waste recycling plant is not in accordance with the respective permit. It is requested that actions should be taken to withdraw the permit for operation (Petition 0722/2014).

The main underlying problems identified concerning thematic area 1 include and remain still the same as outlined in the study 2011:

- There has been high pressure to issue permits and construct landfills as fast as possible, since no waste management system in full compliance with the new Waste Framework Directive was yet operative.
- New compliant landfills are needed as primary treatment options, since alternative pathways (incineration, recycling, biological treatment composting) require longer construction operationalization times, and waste prevention measures had not been introduced fast enough.
- Partly linked to the need to speed up procedures, landfill operators and to some extent also competent authorities seem to be reluctant to fully inform and involve relevant stakeholders.
- The environmental impact assessment and the permitting procedure failed to convince the stakeholders that they and the environment are well protected.

Need for improving environmental impact assessment and public consultation

Environmental impact assessment is a procedure that ensures that the environmental implications of decisions are taken into account before the decisions are made. The benefits of environmental impact assessments are widely recognised across all Member States.

As already introduced in the previous chapters, an environmental assessment can be undertaken for individual projects on the basis of Directive 2011/92/EU 'Environmental Impact Assessment' – EIA Directive, or for public plans or programmes on the basis of Directive 2001/42/EC, the Strategic Environmental Assessment – SEA Directive.

The Directives on Environmental Assessment aim to provide a high level of protection of the environment and to contribute to the integration of environmental considerations into the preparation of projects, plans and programmes and to reduce their environmental impact. They shall ensure public participation in decision-making and thereby strengthen the quality of decisions. The projects and programmes co-financed by the EU (Cohesion, Agricultural and Fisheries Policies) have to comply with the EIA and SEA Directives.

The Commission established an expert group of EIA/SEA national experts, with the aim to bring together environmental experts from national administrations through dedicated meetings twice a year. The role of the Group is to provide advice and expertise to the European Commission and its departments in relation to the implementation of the EIA and SEA Directives, the preparation of legislative proposals and policy initiatives, as well as coordination and cooperation with Member States and stakeholders in that regard⁵⁸.

In addition, in December 2017 a seminar was organized by the EC on the topic "environmental impact assessment in the EU", with the aim to analyse practical experience with the Environmental Impact Assessment (EIA) Directive in the EU. The focus was on the scope and procedure of EIA, the requirements to streamline environmental reporting procedures, the quality control and monitoring of EIA, as well as its interaction with other forms of assessment in EU environmental legislation⁵⁹. The outcomes shall support among others, the enhancement of public participation in decision-making process, especially in the light of new environmental challenges.

Best practice example

Concerning environmental impact assessment and public participation, a best case practice is the Keighley Clean Energy Facility, located in Keighley UK. The case was reported on the Waste Management World, which is the official magazine of the International Solid Waste Management Association (ISWA)⁶⁰.

The case describes a full environmental impact assessment carried out to help to inform the development of a pioneering Waste to Energy (WtE) scheme to generate electricity from commercial waste and old tyres, as well as converting waste plastic into diesel. The facility was approved the permission for operating and is, according to the latest available information, ready to be operationalized. As is often the case with waste to energy plants, potential air quality and visual impact issues were high on the EIA agenda. This was especially so in view of the nearby Rombald's Moor, a sensitive ecological grassland and special protection area (SPA) under EU protection in the nearby of the facility.

In the light of detailed modelling of air quality and emissions, a number of design modifications were made and mitigation measures introduced to minimise environmental

⁵⁸ http://ec.europa.eu/environment/eia/index_en.htm

⁵⁹ [Minutes of the seminar «Environmental impact assessment in the EU», Brussels, 7-8 December 2017. . . https://www.era.int/upload/dokumente/19883.pdf](https://www.era.int/upload/dokumente/19883.pdf)

⁶⁰ [Journal Article : « success with Environmental Impact Assessment », published on « Waste Management World » Link : https://waste-management-world.com/a/success-with-environmental-impact-assessments](https://waste-management-world.com/a/success-with-environmental-impact-assessments)

impact. Similarly, a detailed noise assessment led to mitigation measures including cladding on the buildings, acoustic fencing along the access road, air curtains at entrance doors, fast opening and closing roller shutter doors and negative air pressure to control dust, odour and litter as well as noise.

A major concern that emerged during the public consultation process was that of fire risk – heightened by an actual fire at Sherburn in Elmet that was in the news at the time. This concern was successfully addressed by giving reassurance to stakeholders that only two to three days' stock of tyre crumb would be held at any time – a much lower level than elsewhere and therefore a greatly reduced fire risk. Here again, the findings of the EIA informed an iterative design process.

The clear conclusion is that an effective EIA is far more than a mere legal planning obligation. Where developers and their designers are willing to listen to specialists, take their studies into account and make modifications, it can play a critical role in providing clear information and bringing an early understanding about the possible effects on the environment of any planned project.

4.2. Thematic area 2: Possible negative environmental impacts through improper operation of waste management facilities

As confirmed by the implementation reports and several infringement cases, proper operation of waste treatment facilities (without endangering the environment and human health) is not necessarily implemented everywhere in the European Union.

These problems occur often due to:

- Incomplete transposition of EU waste policies into national law
- Incomplete application of national waste legislation
- Illegal operation of a waste treatment facility

The main deficiencies identified in the study 2011 are:

1. Protection of human health and the environment while operating a waste treatment facility is not guaranteed.
2. Inadequate control and monitoring procedures in the operational phase of landfills.
3. Insufficient technical adaption of existing landfill sites.
4. Lack or absence of comprehensive fulfilment of requirements for the granting of permits for existing installations.

Further deficiencies could be identified within the 2017 study:

- Health and environmental hazard due to the construction of a multi-purpose centre for the management of residual household waste (in line with bullet 1 of results of 2011) (Petition 0528/2015).
- Damage to the environment and human health (water, habitat and wildlife) due to the extension of a landfill for household and similar waste in the pit of a still operational quarry (in line with bullet 1 of results of 2011) (Petition 2622/2014).
- Potential hazard for health of those living in the neighbouring area of a recycling plant caused by open fires (open burning of waste) at the site (in line with bullet 1 of results of 2011) (Petition 0722/2015).
- Negative environmental and health impacts due to leachate leaking from the landfill to the drinking water reservoir, caused by a landfill which is already closed and has not been adapted to the requirements of the Landfill Directive (in line with bullet 1 and 3 of results of 2011) (Petition 1498/2016).
- Serious health problems among local residents caused by the operation of a landfill (in line with bullet 1 and 2 of results of 2011) (Petition 1710/2013).

- Hazard to public health and a threat to the delicate ecosystem caused by the operation of a landfill (in line with bullet 1 and 2 of results of 2011) (Petition 1137/2013).

Need to monitor and tackle non-compliance of waste management facilities

The analysis of the petitions highlighted that in a number of cases, improper operation of waste management facilities might negatively affect the environment and health of the people living in the surroundings of the installation. In total, six petitions from the 2017 study highlighted possible negative impacts, namely the petitions from France, the two petitions from Greece, and the petitions from Spain and Slovakia respectively. In particular, four of the analysed petitions referred to improperly managed landfills, whereas in the other two cases the focus of the complaint is on other waste treatment facilities such as multi-purpose centres for waste management. Obviously, this highlights a certain need to monitor and tackle non-compliant waste management facilities.

One main element of improving the enforcement of waste management is inspections of waste transport and waste treatment. In 2001, recognising that there was a wide disparity between inspection systems in the Member States, the European Parliament and the Council adopted the Recommendation 2001/331/EC providing for minimum criteria for environmental inspections in the Member States (RMCEI). The RMCEI contains non-binding criteria for the planning, carrying out, following up and reporting on environmental inspections. Its objective is to strengthen compliance with EU environment law and to contribute to its more consistent implementation and enforcement in all Member States. On March 2017, the EC met in Brussels to discuss the topic within the workshop: "Tackling waste and wildlife crime and non-compliance: what is necessary and how can a Commission Action Plan on Environmental Compliance Assurance help?" and underlying once again the necessity for strategic co-ordination, effective detection, adequate waste clean-up and sanctioning, implementation of support and coordination networks as well as reassurance of the public and media. In addition, a roadmap on a Commission initiative on Environmental Compliance Assurance was published on February 2017.

Further support for this task is coming from existing EU networks on the topic. The IMPEL (the European Union Network for the Implementation and Enforcement of Environmental Law)⁶¹, is an international association of environmental authorities in Europe. The network foresees different working groups, among which the Waste and TFS Expert Team. The scope of the Waste and TFS Expert Team is to monitor the practical implementation and enforcement of international and European Waste Shipment and Waste Management rules at the Member State level, and to promote compliance with the Waste Management Directives. Activities of the Waste and TFS Expert Team include enforcement, implementation of projects, exchange of knowledge, best practices and experience with the enforcement of the regulations, and directives aiming at to stimulate a uniform enforcement regime.

Other networks dealing with this topic are:

- The ENPE – European Network of Prosecutors for the Environment, which is promoting a consistent approach to prosecuting environmental crimes across Europe. The network tackles wildlife and waste crimes, the latter focusing on causes of non-compliance with the Waste Shipment Regulation;
- The EUFJE – the EU Forum of Judges for the Environment⁶² which promotes the enforcement of national, European and international environmental law in a perspective of sustainable development,

⁶¹ <http://www.impel.eu/>

⁶² <http://www.cwipproject.eu/eu-forum-judges-environment-website>

- The EnviCrimeNet – an informal network connecting police officers and other crime fighters in the field of environmental crimes⁶³.

Need for improvement of environmental inspection

Environmental inspection plays also an important role, for instance to detect hazards deriving from improper functioning of waste management facilities. The activities described above and concerning monitoring and tackling non-compliance of waste management facilities and waste crimes must often be supported by environmental inspection. Activities related to environmental inspection are also carried out within the ENPE, the EUFJE and the EnviCrimeNet described above.

The IMPEL for instance, provides guidance through handbooks such as the IMPEL Reference Book for Environmental Inspection (1999), a practical guide for inspectors, covering tasks as inspection planning and on-site visits⁶⁴. The handbook is available on IMPEL website for consultation.

Best practice example

The IMPEL has several initiatives in place concerning environmental inspection. Relevant for the purposes of this study are:

- The Landfill Inspections Project
- The Guidance book for landfill inspections (revised version 2016) ;

The Landfill Inspection Project, is an ongoing project started in 2011. Recent reports on implementation of EU waste legislation have shown that implementation and enforcement of EU waste law remain poor particularly regarding the waste framework directive, the landfill directive. In addition, requirement to pretreat waste before landfilling are sometimes disregarded in MS. Hence, the project aims to :

- Identify good inspection practices, developing guidance;
- Facilitate cooperation (and helping each other) between IMPEL Member Countries to work towards a consistent regulatory and enforcement regime;
- Provide feedback to policy makers on the (effectiveness of) the various approaches and practices in the field of permitting and inspection of landfill sites in IMPEL Member countries.

The target group consists of:

- Inspection authorities
- Permitting authorities
- Operators
- Technical support organisations

Hence, the project is intended to increase inspection skills for landfill sites and pre-treatment plants in order to achieve better implementation of the Landfill Directive. Desired outcomes of the work are the following:

- Fostering cooperation and coordination between different inspection bodies, using the checklist and Guidance (produced in previous years) to drive joint inspection.
- Identification of good practices, criteria and technologies of pre-treatment of the waste before landfilling.
- Feedback to policy makers on the (effectiveness of) the various approaches and practices in the field of permitting and inspection of landfill sites in IMPEL member countries.

⁶³ <http://www.envicrimenet.eu>

⁶⁴ <https://www.impel.eu/projects/impel-reference-book-for-environmental-inspections>

- Feedback on the implementation gaps of the pre-treatment provision before landfilling.
- Cooperation (and helping each other) between IMPEL member countries to work towards a consistent regulatory and enforcement regime.

A Guidance book for Landfill inspections and a gap analysis of the implementation of the Landfill Directive in the Member States have been already issued as outcome of the 2016 project. The guidance book is available at:

<https://www.impel.eu/tools/inspection-guidance-book-for-landfill-inspection/>

4.3. Thematic area 3: Deficiencies in waste management systems

The general rules of EU waste legislation concerning the setting up of an appropriate waste management system are provided in the Waste Framework Directive:

- To establish and apply the waste hierarchy as a priority order in waste prevention and management legislation and policy, covering: (a) prevention; (b) preparing for re-use; (c) recycling; (d) other recovery, e.g. energy recovery; and (e) disposal (Article 4).
- Take appropriate measures, in cooperation with other Member States where this is necessary or advisable, to establish an integrated and adequate network of waste disposal installations and of installations for the recovery of mixed municipal waste collected from private households (Article 16).
- Take the necessary measures to ensure that waste management is carried out without endangering human health, without harming the environment and, in particular: (a) without risk to water, air, soil, plants or animals; (b) without causing a nuisance through noise or odours; and (c) without adversely affecting the countryside or places of special interest (Article 13).
- Take the necessary measures to prohibit dumping or uncontrolled management of waste (Article 36).

Based on results of the study 2011 (Petition no 1144/2009 from Greece; Petition no 0031/2006, no 0991/2007 and no 1082/2008 from Italy), and on the assessment carried out in 2017 (Petition no 0615/2013 from Italy; Petition no 0586/2014 from Spain and Petition no 1137/2013 from Greece) following main findings for specific areas have been identified:

Legal transposition: In the Countries Italy, Greece and Spain the general rules, stipulated in the Articles 4, 13, 16 and 36 of the Waste Framework Directive, have been transposed correctly into national legislation. It can be said, however, that the implementation and application of these rules has not been appropriate.

Solid Waste Management Planning: In Italy, Greece and Spain the responsibility of waste installation planning is assigned to the regional level. The waste management plans of the evaluated regions have been set up. The information available on the regional waste management plans shows that the planning of a network of appropriate treatment installations took already place, but that the implementation of these plans and the construction of the installations did not take place in an adequate time period.

Waste hierarchy: The waste management system (especially with regard to the management of municipal waste) in Italy, Spain and Greece is still relying on the landfilling of waste. Nevertheless, all three Countries did fully transpose the EU waste hierarchy into national legislation. Separate collection of waste is often limited to bigger cities and not applied efficiently. Separately collected waste is not completely recovered for instance through recycling or incineration with energy recovery.

Network of disposal installations: The core problem of all evaluated petitions in Italy, Spain and Greece is the lack of appropriate treatment capacity for the recovery and disposal of waste. If this capacity is not provided, waste is redirected into uncontrolled and illegal routes, which may pose major hazards to human health and the environment.

Actions against illegal shipment: Illegal shipment of waste, especially from EU and towards non-EU and less developed countries, is an issue which concerns several waste streams such as ELV and WEEE. The increased risk of hazard for environment and human health is related to the type of waste and some other characteristics such as toxicity or radioactivity of the of illegally shipped waste. Unfortunately, an official estimation of the amount of radioactive waste illegally shipped throughout and outside the EU is unknown. The fact that illegally shipped waste is controlled by criminal organization, often organized through international channels, calls up for joint efforts and enforcement of projects, e.g. those already established under the umbrella of the IMPEL TFS network.

The following problems concerning malfunction in the waste management system are confirmed from the analysis conducted in 2011 and 2017:

1. Due to lack of financial resources or due to long lasting administrative procedures, no sufficient recovery and disposal capacities have been installed.
2. Due to earlier mismanagement by regional or local authorities, citizens show strong opposition against new waste facilities in their proximity (Not In My BackYard-problem).
3. Household waste was contaminated with industrial and hazardous waste due to illegal activities, which led to problems with its further treatment.
4. Private companies in charge of waste management were not able to fulfil some or all the terms of the contract on time. Legal trials are still on-going to clarify legal responsibilities.
5. Illegal shipment and illegal dumping of waste takes place due to malfunction in regional and local waste management procedures, e.g. due to insufficient controls and audits of waste treatment and transport activities. This is often caused by insufficient enforcement actions against criminal organisations and activities.
6. The Italian case (Petition 1418/2016) is so unique to suggest that organized crime is acting at international level, which makes joint efforts between EU and non-EU countries absolutely necessary. Although intensifying controls of transported and shipped waste might be part of the solution, the problem is not solely a "waste management problem", hence wider actions to combat this issue are necessary.

Need for improvement of waste management plans

Three of the analysed petitions in the 2017 study refer to deficiencies in the waste management system in Spain, Italy and Greece respectively. In particular, all three petitions refer to deficiencies and failures with the implementation of the regional waste management plans.

As already highlighted in the previous chapters, the Member States' authorities are obliged to establish one or more waste management plans (WMP) in accordance with Articles 1, 4, 13 and 16 of the Waste Framework Directive (WFD).

A recent study from the European Commission (EC 2016) provided an overview on the status of transposition and implementation of the waste management plans across 18 EU Member States including Spain, Greece and Italy. The report highlighted that some countries as Italy, Germany, France and United Kingdom foresee the preparation of regional waste management plans rather than a national plan, whereas other countries prepared a national waste management plan as in Greece, Czech Republic, Slovenia and Slovakia. A third group of

countries including Poland, Spain, Estonia and Lithuania prepared both a national plan and different regional plans. The assessment of 45 WMPs from 18 different Member States highlighted that there are still major discrepancies in the proper implementation as regards the drafting of Waste Management Plans. Many WMPs fulfil just minimum requirements, and fail to properly address mandatory elements of the Waste Framework Directive, especially Articles 28 (1) to (3) and (5) of the WFD, highlighting that there is considerable room to improve such national and regional waste management plans.

Best practise example : regional waste management plan in Ireland regions

For the purposes of waste management planning Ireland developed and implemented waste management plans for its three regions⁶⁵: Southern⁶⁶, Eastern-Midlands⁶⁷ and Connacht-Ulster⁶⁸.

The three waste management plans build on a common framework for the prevention and management of wastes in a safe and sustainable manner.

The waste plans aim at providing policy direction, setting goals and preparing a roadmap of actions to achieve the goals. The waste management plans are prepared by the local authorities of each region cover a period from 2015 to 2021 and shall be revised every six years⁶⁹.

The strategic approach of the plans place a stronger emphasis on preventing wastes and material reuse activities, enhancing the collection of quality materials from discarded waste to build on the positive progress made in recycling. The plan strives to improve the recovery and generation of energy by maximising the resource value of the materials and energy embodied in residual wastes. Finally, the plan seeks to further reduce the role of landfilling in favour of higher value recovery options.

The targets of the plans cover the areas of prevention, recycling and landfilling, and their delivery will require the local authorities and industry to work together, and include reaching a recycling rate of over 60% by 2030.

Finally, the policies and actions have been informed and shaped by the citizens and businesses of the region as well as by the local authorities, stakeholders from the waste industry, the NGO sector, State Agencies and Government departments. The environmental assessment has been carried out, which included public consultations before and after the publication of the draft waste plan have made an important contribution to the final document⁷⁰.

The waste plan contains a comprehensive list of policies to achieve its goals, and include among others⁷¹:

- Commit to a minimum expenditure on waste prevention activities each year;
- Encourage more reuse and repair activities in the region,
- Deliver communication, awareness and on the ground activities which lead to a lasting change in the behaviours of citizens and businesses towards their wastes; f

⁶⁵ <http://www.epa.ie/waste/policy/regional/>

⁶⁶ <http://southernwasteregion.ie/>

⁶⁷ <http://emwr.ie/>

⁶⁸ <http://www.curwmo.ie/>

⁶⁹ See for instance “ Eastern-Midlands Regional Waste Management Plan 2015 – 2021”. Link: <http://emwr.ie/download-the-eastern-midlands-regional-waste-management-plan>

⁷⁰ Connacht Ulster Region Waste Management Plan 2015 – 2021 SEA Statement. Link: <http://www.curwmo.ie/wp-content/uploads/2015/10/Strategic-Environmental-Assessment.pdf>

⁷¹ <http://emwr.ie/>

- Increase the level of source-segregated kerbside collections in the region, with a strong focus on ensuring that a three bin system becomes commonplace at household and commercial levels; *f*
- Implement and regulate the new national pay-by-weight charging system which is due to come into force

Thanks to the implementation of the waste management plan, the region of Eastern – Midlands already achieved 76% recycling rate, 87% recovery rate for national packaging, and 7000 waste inspections undertaken by local authorities. Further actions will include:

- Enforce the regulations related to household and commercial waste to tackle the problem of unmanaged waste and other issues;
- Plan and develop higher quality waste treatment infrastructure including new reprocessing, biological treatment, thermal recovery and pre-treatment facilities;
- Grow the biological treatment sector, in particular composting and anaerobic digestion, by supporting the development of new facilities;
- Support the development of thermal recovery in the region which meets the needs of the region and the State in reducing the export of residual wastes for treatment abroad;
- Ensure existing and future waste facilities do not impact on environmentally sensitive sites through proper assessments and siting;
- Grow the waste management sector into a prosperous and sustainable industry which creates and maintains healthy employment.

Best practise example: Towards Zero Waste Wales

The Welsh Assembly Government initiated a « towards zero waste » initiative in 2002. This is a waste management plan, providing a long term framework for resource efficiency and waste management until 2050⁷².

The Welsh Assembly Government works closely with all stakeholders to take forward the policies and proposals within the sector plans, which are the implementation plans for actions within four identified key areas: waste prevention, preparing for reuse, Collection of source separated waste for recycling, composting and anaerobic digestion, and sustainable treatment and disposal.

Thanks to the plan⁷³, which includes the target for Welsh to be zero waste by 2050, have driven the country up the league table of best recyclers in the world, to come in just under Germany. With recycling rates of 63.8% for municipal solid waste, which includes household plastic and other packaging, Wales is set to become the world leader for recycling by next year ⁷⁴

Waste prevention: in order to meet the waste prevention target to reduce waste arising of household waste by 1.2 per cent (of the 2007 baseline) a year to 2050, the following actions will be undertaken⁷⁵:

- Service provision changes, for example frequency of residual waste collection
- Waste awareness, communications and education campaigns
- Encourage product reuse
- Packaging essential requirements

⁷² http://gov.wales/topics/environmentcountryside/epg/waste_recycling/zerowaste/?lang=en

⁷³ Welsh Assembly Government. 2010. « Towards Zero Waste. One Wales : OnePlanet ». Link : <http://gov.wales/docs/desh/publications/100621wastetowardszeroen.pdf>

⁷⁴ Eunomia (2017): Recycling – who really leads the world? Identifying the world's best municipal waste recyclers

⁷⁵ Welsh Government. 2016. « Towards Zero Waste Sector Plan and Waste Prevention Programme Actions- summary Report 2010-2016”.

- Support for businesses and public sector
- Legislation to introduce a levy on single use carrier bags
- Actions to prevent packaging waste
- Moving from goods to services
- Extended producer responsibility
- Action by retailers through the Courtauld 2 Commitment.

Preparing for reuse: to help deliver the preparing for reuse target the following actions will be undertaken:

- Local Authorities to offer a bulky reuse and recycling collection service
- Waste awareness, communications and educational campaigns
- Support the infrastructure development for preparing for reuse
- Further development of the role of the social economy
- Further research for baseline data

Collection of source separated waste for recycling, composting and anaerobic digestion: the actions to meet the targets set in Towards Zero Waste are as follows:

- Increasing the recycling rates to meet targets
- Consistency in recyclable materials collected
- Collecting and delivering quality materials to end markets
- Greater transparency in the quantity and destination of materials recycled
- Improve service standards at household waste recycling centres and bring sites
- Provision of a recycling service for business
- Increasing the recycling service value for money and performance
- Supporting the development of recycle, compost and digestate markets
- Working with retailers to increase the recyclability of products and packaging
- Examination of extended producer responsibility

Sustainable treatment and disposal: To provide sustainable treatment and disposal options for municipal waste, the following actions will be undertaken:

- Energy from waste caps
- Landfill allowance scheme targets to 2020
- Residual household waste – indicative levels
- Food waste treatment and generation of high quality compost/ digestate
- Residual waste treatment
- Examination of landfill bans/restrictions of certain wastes.

4.4. Thematic area 4: Improper management of radioactive waste

This thematic area has been introduced on the analysis of two specific petitions in 2017 and claims two fields regarding the management of radioactive waste with following imposed deficiencies:

- Illegal disposal of radioactive toxic waste (Petition no 1418/2016, Italy).
- Improper storage of radioactive waste at a nuclear power plant site (Petition no 0518/2014, Hungary).

Management of radioactive waste or nuclear waste represents an own and separate technical and legal issue, as it is based on the Euratom Treaty and respective Euratom Directives and Regulations. The Euratom Treaty stipulates the only consultative function of the European Parliament in this regard.

Euratom MS are reporting on relevant issues to the European Commission on a regular basis. Furthermore, all Euratom MS are Contracting Parties to the Joint Convention on the Safety

of Spent Fuel Management and on the Safety of Radioactive Waste Management ('the Joint Convention') and the Convention on Nuclear Safety with IAEA as its depositary.

Euratom legislation and international Conventions have mechanisms in place to proof effectiveness of the legal framework as well as the compliance on national level also based on different peer review instruments, such as the Integrated Regulatory Review Service - IRRS or Integrated Review Service for Radioactive Waste and Spent Fuel Management, Decommissioning and Remediation Programmes - ARTEMIS missions, the review meetings of the Joint Convention and the Convention on Nuclear Safety, the work of the IAEA Commission on Safety Standards (CSS) and relevant Committees such as WASSC (WASTE SAFETY Standards Committee), NUSSC (Nuclear Safety Standards Committee) or TRANSSC (Transport Safety Standards Committee).

At Euratom level the European Nuclear Safety Regulators Group (ENSREG) and at European level the Western European Nuclear Regulators Association (WENRA) play an important role on providing feedback on international level also regarding topics on radioactive and nuclear waste safety. The OECD Nuclear Energy Association (NEA) established different standing Expert Committees such as the NEA Radioactive Waste Management Committee (RWMC), the Committee on the Safety of Nuclear Installations (CSNI) and the Committee on Nuclear Regulatory Activities (CNRA) with Working Groups and Task Groups dealing with safety of radioactive and nuclear waste management.

Currently the European Commission is following the transposition of the - some of them updated and revised - Directives before considering a process proposing possible new legislation in this field. Also it has to be noted that several Euratom MS did not transpose the Directives properly or fast enough into national legislation so far.

Main challenge is the definition of a selection process for sites to safely dispose nuclear waste. Furthermore, its implementation under national competence considering regional or local opposition seem to be an important issue. In addition, processes such as SEA and EIA taking into account requirements of Aarhus and Espoo Convention face challenges in the practice.

Information on best practise examples: storage/handling of radioactive waste

Two cases analysed in 2017 are dealing with quite different issues in the area of radioactive waste management:

- 1) Possible release of radioactive material/contamination into the environment without permission by violating pertinent legislation on radiation protection for environment and human health (Sea coast, South of Italy)
- 2) Quality of technological concept and status of spent nuclear fuel interim-storage on-site of a nuclear facility (PAKS NPP, Hungary)

The cases are not comparable as raised by completely different reasons and addressed to different parties concerned.

The release of radioactive and toxic material or waste above well-defined limits and without permission into the environment would create a violation against national and Euratom legislation. The risk for contamination of the environment depends on the amount of released radioisotopes, its concentration, point of release, chemical characteristics and composition. This can generate significant health impacts according to different paths by direct irradiation, inhalation and ingestion, which may create an exposure of affected population groups, local or regional flora and fauna.

In case the release was an intended action, it could be dealt as criminal act. Good practice would imply consequent and effective actions of the Italian national and regional radiation protection authority and involvement of executive forces and Technical Support Organisations

(TSO) to clarify the general situation, to ensure radiation safety on physical level and in case to set preventive and protective actions, impact documentation including mapping, dose calculation for most exposed groups of persons, development and implementation of a decontamination plan and final approval of success of actions, corrective actions if necessary. The authorities are also in the position to provide relevant information which can be contributed to the legal case.

The situation for the spent fuel management in Hungary implies a different situation. In this regard it is possible to evaluate the legal basis and relevant regulation, the implementation by the Hungarian operator, (the Public Limited Company for Radioactive Waste Management PURAM) of the spent nuclear fuel wet storage facility, operation history, findings and actions of the Regulatory Authority HAEA (Hungarian Atomic Energy Authority) and results from international review missions.

There is no evidence, that the operator or the regulator missed their responsibilities in management and interim storage of spent nuclear fuel from the operation of the PAKs Nuclear Power Plant units 1 – 4 or did not fulfil obligations from national or Euratom legislation beyond deviations, which would have to be reported in mandatory format and defined time. During the 5th Review Meeting under the “Joint Convention” in total 13 challenges were identified for Hungary in total, with focus on technical, administrative and political issues on radioactive waste and spent fuel management. One challenge was explicitly addressing also the programme to increase the modular storage capacity of the Spent Fuel Interim Storage Facility (SFISF):

“2. Increasing the interim storage capacity of spent fuel elements based on the service life extension programme of the PAKs Nuclear Power Plant.

The Spent Fuel Interim Storage Facility (hereinafter referred to as SFISF) can be expanded modularly, and the planned expansions also take into account the storage needs of the 20 year service life extension of the PAKs Nuclear Power Plant (see Section G.1). Based on current plans, the SFISF extension milestones are as follows:

2019-2023 construction of modules 25-28.

2026-2030 construction of modules 29-32.

2032-2036 construction of modules 33-36.”⁷⁶

The practice of wet interim storage for spent nuclear fuel is widely used. Another option would imply dry storage in shielded containers (Castor boxes) after removal from reactor spent fuel pool. Dry storage is more common, nevertheless also wet storage is seen as state-of-the art interim spent fuel storage concept.

For Hungary, the capacity increase creates a medium term challenge to provide appropriate resources and to follow the licensing procedures as Hungary has issued permits for long term operation of its four existing units of PAKs NPP and two new NPP units, which will be soon constructed. Both the long term operation of the existing units and the two new units, if put into operation require reliable interim storage capacity of spent fuel and other types of radioactive waste for the operation life time and before the national final repository will be put into operation.

Further challenges identified during the 5th Review Meeting under the “Joint Convention” are connected to the establishment of a process to identify a site of a final disposal,

⁷⁶ National Report (Hungary): Sixth Report prepared within the framework of the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management, 2017, still internal.

"finalization of the national programme in accordance with Council Directive 2011/70/EURATOM on establishing a Community framework for the responsible and safe management of spent fuel and radioactive waste"

and

*"In order to increase long-term safety, the recovery of long lived sources from the disposal pools of the Radioactive Waste Treatment and Disposal Facility (hereinafter referred to as RWTDF). A multi-stage programme was launched in 2002 aimed at modernizing and enhancing the long term safety of the RWTDF (see Section H.2 and K.2). The demonstration phase of the enhancement programme was completed in 2008."*⁷⁷

Due to its National Report (2017) prepared for the 6th Review meeting under the "Joint Convention" practice of on-site wet (and dry) storage was also reported e.g. by Belgium.

"At 31 December 2016, 4080 tHM of spent fuel, including 66 tHM of MOX fuel, have been definitively unloaded from the Doel and Tihange reactors since they started operating:

- 27% of this fuel is stored in the reactor's cooling ponds;*
- 57% is stored in the storage facilities built at Doel and Tihange (see appendix 2):*

wet storage in Tihange; dry storage in metal casks for storage and transport in Doel.

These storage facilities, which were approximately 60% and 75% full respectively mid of 2017, will be saturated by 2022. So as not to jeopardise nuclear electricity production because of the saturation of existing storage facilities, new storage facilities are currently under study for commissioning prior to this date.

- 16% has been reprocessed at la Hague"*⁷⁸

The Slovak Republic reports in its National Report (2017) for the 6th Review Meeting under the "Joint Convention" about its interim wet storage facility at Bohunice site:

"ISFS at Jaslovské Bohunice (in operation since 1987) is used for storage of fuel assemblies in a wet pool. After its reconstruction (change in the geometry of the layout of stored assemblies) the ISFS has a higher final storage capacity (of 14,112 spent fuel assemblies). Reconstruction also provided for higher seismic resistance and extension of lifetime of the NI ISFS to 50 years.

*For further operation of nuclear power plants in SR, it is envisaged to expand the capacity of the current ISFS – by construction of a dry storage facility for SNF for additional 18,600 spent fuel assemblies. The new storage facility was subject to environmental impact assessment according to Act 24/2006 Coll. on environmental impact assessment. The process of selecting the contractor for the design documentation and construction of new storage capacity for SNF at Jaslovské Bohunice site started in 01/2017 in accordance with the requirements for storage capacity."*⁷⁹

Best practice can be identified more generally for different aspects of the management and interim disposal mainly on the level of technical implementation, management structure, supervision programs, human resources development and knowledge management.

⁷⁷ See FN 10.

⁷⁸ National Report (Belgium): Sixth Report prepared within the framework of the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management, 2017, still internal.

⁷⁹ National Report (Slovak Republic): Sixth Report prepared within the framework of the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management, 2017, still internal.

Clear preference to wet or dry storage of spent nuclear fuel can be not deduced as both concepts are based on carefully developed technologies with comprehensive safety analysis licensing and commissioning performed.

5. RECOMMENDATIONS

Several recommendations were established in the 2011 study. They address the three thematic areas identified in 2011 and are reviewed in the following with a view to the assessment carried out in 2017, together with details on recent findings as appropriate.

5.1. Recommendations on permitting procedures for landfills

- Speed up the introduction of advanced waste management systems including waste prevention, recycling and energy recovery, e.g. by providing public funds.
 - *Still an issue as indicated by the data reported recently by the MS on amounts of recycled/recovered material (see also EUROSTAT data). The Circular Economy Package stipulates new (higher) quotas for recycling of specific waste streams such as municipal waste and construction and demolition waste. Here enforcement actions in the MS, which are lagging behind, are very important to enable a high European standard covering all MS. The EU cohesion initiative takes up this issue.*
- Improve communication between authorities, operators and interested and affected parties; this can be done through the development of guidelines based on best-practice examples and their application. This will also increase trust in - and thereby the acceptability of - new installations.
 - *As shown in several analysed petitions of 2013-2016 the enhancement of communication between all involved parties is still a crucial issue. Involvement and the active invitation of interested and affected parties is an important factor in minimising complaints, which sometimes only occur because of an inadequate information exchange.*
- Introduction of a quality controls and verification systems for environmental impact assessments.
 - *Up to now, there has been no European standardized quality control and verification system for environmental impact assessment procedures (e.g. quality check of the EIA reports, accreditation of staff carrying out the EIA). The consistent implementation of such a system would improve the quality of the assessments.*
- Introduce specific EU-wide standards for the frequency, length and content of the reconsideration process for permits.
 - *As stipulated in Article 23 of the WFD the permits for waste treatment facilities may be granted for a specified period of time and they are renewable. So this issue is taken up at MS level by the national competent authority.*
- Provide sufficient administrative capacities for the national, regional and local authorities responsible for the permitting procedure to enable the timely adaptation of permits.
 - *Capacity building and the joint enforcement of activities in the field of permitting and inspection should take place at both European and MS level, supported by initiatives of the European Commission and national, regional and local actions.*
- Further development of standards for environmental protection - e.g. standards for minimum distances between landfills and residential areas or for simulation methods applied in environmental impact assessments.

- *European standardization should be enhanced to enable guidance based on the scientific background. EN standards give important guidance, though often not in legally binding manner.*

5.2.Recommendations on the improper operation of waste management facilities

- Provide administrative capacities for the national, regional and local authorities responsible for the permitting procedure to enable the timely adaptation of permits.
 - *Capacity building and the joint enforcement of activities in the field of permitting and inspection should take place at both European and MS level, supported by initiatives of the European Commission and national, regional and local actions.*
- Carry out on-line (continuous) measurement of key emissions and process parameters to prevent incorrect operation of a facility and limit environmental impact.
 - *The European Commission (JRC – The European IPPC Bureau) has been working on two updates of BREF standards, one for Waste Treatment and one for Waste Incineration, which should both be finalized soon. These standards cover monitoring issues for key environmental parameters for emissions of industrial installations. With the publication of the relevant BAT Conclusion via a Decision of the European Commission the new requirements need to be transposed into permits at national level within four years. This will reduce environmental impacts in the waste management sector.*
- Make on-line measurement results publicly available in order to build confidence.
 - *As shown in several analysed petitions of 2013-2016, the enhancement of communication between all involved parties is still an issue. The involvement and active invitation of interested and affected parties is an important factor in minimising complaints, which sometimes only occur because of an inadequate information exchange.*
- Define waste acceptance criteria (as defined in Council Decision 2003/33/EC for landfilling, as well as according to input criteria for incineration and co-incineration) to keep unwanted substances away from certain treatment processes. Apply relevant sampling and testing standards accordingly.
 - *The European Directive on Industrial Emissions (2010/75/EU) does not regulate input and output for industrial installations in detail. At national level several limitations on waste input have been introduced through the definition of acceptance criteria, as well as for waste incineration activities. E.g. in the Austrian Ordinance on waste incineration limit values are set for specific parameters such as arsenic, lead, cadmium, chromium or mercury for waste input in co-incineration facilities.*
- Carry out on-site inspections of waste treatment facilities to monitor compliance with the provisions defined in the permit and relevant legislation. Build corresponding administrative capacities on the national, regional and local level.
 - *Capacity building and the joint enforcement of activities in the field of permitting and inspection should take place at both European and MS level, supported by initiatives of the European Commission and national, regional and local actions.*

5.3. Recommendations on deficiencies in waste management systems

- Speed up the introduction of advanced waste management systems including waste prevention, recycling and energy recovery, e.g. by providing public funds; Provide sufficient financial means for building waste treatment capacity, e.g. by setting aside funds, introducing fees, etc.; In order to ensure that waste is not illegally disposed of, set up an effective monitoring system. In this way, the competent authorities can monitor waste until it reaches its destination. The first priority of the monitoring system should be put on hazardous waste; Implement appropriate sanctions that will act as a deterrent to non-compliance. Illegal waste disposal should be subject to heavy fines. Those responsible for illegal disposal should be sued for environmental damages.
 - *Still an issue as indicated by the data reported by the MS on amounts of recycled/recovered material (see also EUROSTAT data). The Circular Economy Package stipulates new (higher) quotas for recycling of specific waste streams such as municipal waste and construction and demolition waste. Here enforcement actions in the MS, which are lagging behind, are very important to enable a high European standard in all MS. The EU cohesion initiative takes up this issue.*
- Streamline administrative procedures for the permission and construction of waste treatment installations, without narrowing down environmental assessments or the participation of stakeholders; The proper operation of the monitoring system should be supervised through inspections of waste transports and waste treatment installations.
 - *Capacity building and the joint enforcement of activities in the field of permitting and inspection should take place at both, European and MS level, supported by initiatives of the European Commission and national, regional and local actions.*
- Take measures to reduce opposition from neighbours to planned waste treatment installations. The general public and especially the citizens living in the vicinity of installations need to have confidence in the permitting authorities, especially that the rules governing environmental assessments of installations are applied correctly and that the doubts and objections raised by the citizens are taken into consideration (see also above: 'permitting procedures for landfills').
 - *As shown in several analysed petitions of 2013-2016, the enhancement of communication between all involved parties is still an issue. The involvement and active invitation of interested and affected parties is an important factor in minimising complaints, which sometimes only occur because of an inadequate information exchange.*
- Support the enforcement actions between national/regional/local authorities and between MS to tackle illegal shipment of waste and illegal dumping of waste. This will foster the uptake of state-of-the art waste management in all MS.
 - *As shown in two analysed petitions of 2013-2016 from Italy, joint enforcement actions against criminal organisations and activities on the management of waste (including transport and dumping of radioactive waste) needs to be enhanced. Activities under the umbrella of the IMPEL TFS network to implement and enforce international and European Waste Shipment and Waste Management rules show that there are successful instruments available to establish joint activities.*

5.4.Recommendations on improper management of radioactive waste

- Euratom MS should initiate full scope ARTEMIS missions (Integrated Review Service for Radioactive Waste and Spent Fuel Management, Decommissioning and Remediation Programmes) to keep and ensure continuously improving the safety of radioactive waste and spent fuel management. This can comprise peer review processes with international expert feedback. ARTEMIS mission scope includes:
 - o control of radionuclide discharges to the environment
 - o decommissioning of nuclear facilities
 - o remediation of sites contaminated by radioactive materials
- *Safety of radioactive waste management was enhanced over the last decades, nevertheless major topics are still in progress and are not finally concluded, among them:*
 - o *Decision making on final repository concepts and political responsibility*
 - o *Proven technological concepts for long term disposal of high level radioactive waste and spent nuclear fuel*
 - o *Financial responsibilities of repository planning, construction, operation and long-term observation*
 - o *Identification of common challenges regarding national programmes on final disposal of high level waste*
 - o *Comparable criteria for the transition from interim storage to final disposal*

Selected petition from 2014 (Hungary) showed, that public attention is put on spent nuclear fuel interim storage, as it is already publically discussed within several other Euratom MS and third countries (e.g. Germany, Sweden, Italy etc.).

- All Euratom MS are Contracting Parties of the IAEA "Joint Convention" and should actively participate within the regular review process. The next Review Meeting is scheduled for 2018. Recommendations and challenges from the Review Meetings as part of the outcomes of the peer review process should be followed and implementation of corrective actions or measures to meet international standards of good practice should be performed. National Action Plans should refer not only to one peer review instrument or mission but imply as living document suggestions, challenges and obligations based on different background and connected by common topics. The task list should be continuously updated and implementation schedule including performance criteria should be provided to take qualified decisions regarding completion of actions.
- *Results and ongoing actions on technical and regulatory level should be communicated and make public available in transparent manner to neighbouring countries and the general public.*
- Bilateral and regional cooperation should be considered as an important format to identify common challenges, discuss open issues and to identify level and format of cooperation to deal with radioactive waste management as the Euratom legislation can provide only the general frame without addressing the specific needs of regional groups, or possible partners e.g. for regional approaches for final repository. Interface to non-Euratom activities such as from IAEA or NEA and third countries should be taken into account.

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This study, commissioned by the European Parliament's Policy Department for Citizens' Rights and Constitutional Affairs at the request of the PETI Committee examines the application and proper transposition of European environmental law on waste by Member States, that is one of the recurrent topics addressed by the Committee on Petitions, which collects complaints from citizens in this matter and call for respect of the rule of law

Waste management concerns all activities and actions that are required to manage waste, from its generation to its final disposal. This includes the collection, transport, treatment and disposal of waste, together with monitoring and regulation.

This study is an updated version of the previous research from 2011. Based on the results from 2011, new petitions from 2013 to 2016 were analysed with the aim to update the main findings and recommendations on the crucial areas of complaints. The results of the recently carried out assessment show that most of the analysed petitions still relate to deficits in the waste management system, the operating of existing installations (mainly landfills) and the permitting procedure for new facilities. In addition, two petitions address the improper management of radioactive waste which constitutes a new area of complaint (EURATOM Treaty) compared to the analysis in 2011. For all the main areas covered, best practice examples and recommendations for better approaches in future were updated and reviewed.

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