MAKE IT WORK

IMPEL

European Union Network for the Implementation and Enforcement of Environmental Law

IMPEL Landfill and Circular Economy Project/ MIW Enabling Eco-innovations for a Circular Economy Project:

Report of the meeting in Nicosia(Cyprus)
11-13th of September 2018

Department of Environment
20-22 28th Oktovriouave., 2414, Nicosia
Nicosia/Lefkosia, Cyprus

Date of report: 28/09/2018
2018/05

Introduction to IMPEL

The European Union Network for the Implementation and Enforcement of Environmental Law (IMPEL) is an international non-profit association of the environmental authorities of the EU Member States, acceding and candidate countries of the European Union and EEA countries. The association is registered in Belgium and its legal seat is in Brussels, Belgium.
IMPEL was set up in 1992 as an informal Network of European regulators and authorities concerned with the implementation and enforcement of environmental law. The Network's objective is to create the necessary impetus in the European Community to make progress on ensuring a more effective application of environmental legislation. The core of the IMPEL activities concerns awareness raising, capacity building and exchange of information and experiences on implementation, enforcement and international enforcement collaboration as well as promoting and supporting the practicability and enforceability of European environmental legislation.
During the previous years IMPEL has developed into a considerable, widely known organisation, being mentioned in a number of EU legislative and policy documents, e.g. the 7th Environment Action Programme and the Recommendation on Minimum Criteria for Environmental Inspections.
The expertise and experience of the participants within IMPEL make the network uniquely qualified to work on both technical and regulatory aspects of EU environmental legislation.
Information on the IMPEL Network is also available through its website at:www.impel.eu

Introduction to MIW

The **Make it Work Project** is an initiative by The Netherlands (Ministry of Infrastructure and the Environment), the UK (Department for Environment, Food & Rural Affairs), Sweden (Ministry of Environment and Energy) and Czech Republic (Ministry of the Environment). Germany (Federal Ministry of Environment, Nature Conservation, Building and Nuclear Safety) participated in Make it Work as lead country for the subject matters environmental compliance assurance and environmental reporting (2014-2016). The aim of the project is to identify concrete opportunities to improve the quality of EU environmental law and thus help to achieve the benefits associated with the law while delivering a more level playing field across the EU. In particular, it aims at establishing a more coherent and consistent framework for the EU environmental acquis through developing drafting principles on the use of cross-cutting instruments and procedures in EU environmental directives and regulations. MiW aims at delivering environmental outcomes more efficiently and effectively, without lowering existing protection standards. Principles drawn up will ensure the protection of the environment.

Information on the MIW project is also available through its website at: http://minisites.ieep.eu/work-areas/environmental-governance/better-regulation/make-it-work/home/

Title of the report: Report on the Workshop on waste/end-of-waste - Nicosia (Cyprus)	**Number report:** 2018/~~2~~ 2018/05
Project Manager/Authors: - Italy: Romano Ruggeri (Project Leader IMPEL Project) - Netherlands: Jan Teekens ((Project Leader MIW Project) - Estonia : Kristel Lopsik (Author of the Report)	**Report adopted at IMPEL General Assembly Meeting**: **Total number of pages:** Report: 27 Annex I: 15 Annex II: 126
Executive Summary The report shows the results of the meeting that was held in Nicosia in September 2018. It contains overview of presentations, discussions and conclusions on the drafted guidance chapters and a summary regarding local landfill inspection.	
Disclaimer This report is the result of a project within the IMPEL network. The content does not necessarily represent the view of the national administrations or the Commission.	

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1. Preparation of the meeting

The following preliminary actions were taken to prepare the meeting:

- Draw up of the agenda of the meeting.
- Organising an inspection of a local landfill, definition of the main topics to be inspected in the landfill visit.
- Preparation of the presentation (ppt) concerning the IMPEL network, and the previous steps of the project and drafted guidance chapters.
- Preparations of presentations (ppt) of representatives of the MIW project and participating country ppt-s sharing experiences and overviews of practice so far.
- Stimulating the discussion and preparation of the group on Basecamp; sharing of the checklist and drafted guidance chapters.

2. Definition of the topics of the meeting

The main focus of the workshop was discussing the drafted chapters of the Final Guidance. In Basecamp the chapters were made available for all the project members to comment. During the workshop a detailed overview on the outcomes of the chapters so far was presented and comments and suggestions for further amendments were made. IMPEL members and MIW project members shared the same role as presenting and commenting the drafted chapters. Additionally results of the survey on training needs were presented and discussed. For one day a joint inspection of a local landfill was carried out using the checklist issued in 2016 and discussing the results.

3. Project group

As a large number of requests of participation in the project were collected after the circulation of the project ToR, the participants had to be divided between several meetings (in Treviso and Nicosia which will be followed by Edinburgh). As principal has been followed that when suitable for the IMPEL member state then at least once there should be a possibility to attend the meetings or workshops, therefore the core group remains the same and some new members are invited to meetings. In Nicosia three of theparticipants were new to the project, others had been in Treviso or involved at earlier stages. Due to a shared goal and task MIW project members including consultants were participating. From the hosting authority two representatives were attending the meeting. During joint inspection a larger team of 7 officials from Cyprus´ Department of Environment were participating, additionally 3 IMPEL team members took part. Videoconference was also offered as a

possibility to take part of the workshop but due to problems in establishing a sufficient internet connection to enable videoconference it was not possible.

During the meeting, the comments on the drafted chapters were presented by subgroups. The topics which were covered by the subgroups were:

- Draft chapter 2 (Legislation), including annex A: relevant provisions in the main EU environmental legislation and annex B: cases to illustrate chapter 2;
- Draft chapter 3 (Governance);
- Draft chapter 5 (Business);
- Draft annex I (assessment EoW status);
- Draft annex II (inspections on EoW);
- Draft annex III (database EoW), including excel sheet.

The project group was as follows:

IMPEL team Members

- Italy: Romano Ruggeri (Project Leader)
- Italy: Luca Paradisi
- Spain : Myriam Fernandez Herrero
- Poland: Anna Poplawska
- Malta: Ritianne StelliniGalea (Inspector)
- Belgium: Liesbet Rommens (Inspector)
- Estonia: Kristel Lopsik
- Greece: Sofia Christoforou
- Netherlands: Arjen Snijder
- Cyprus: Neoklis Antoniou

Inspection team Cyprus

- Costas Voskos
- PavlosPavlou
- Stella Perikenti
- LamprinaChristofi
- Antonia Achilleos
- DemetrisDemetriou
- Neoklis Antoniou

Make It Work Team members

- Netherlands: Jan Teekens
- Netherlands: Gabrielle Kühn
- Netherlands: Ilia Neudecker (consultant)
- Sweden: Sabina Nilsson
- UK: David Pugh
- Iceland: SigurðurIngason

The meeting was also glad to host Mrs Chrystalla Stylianou, head of the hosting Department).

Fig.1: Group photo of IMPEL team members and MIW project members.

4. Agenda of the meeting

Monday 10/09/2018 arrival of IMPEL inspectors **Tuesday** 11/09/2018 arrival of IMPEL and MIW project members Staying in Europa Plaza Hotel - Address: 13 Alkaiou Street, Nicosia, 2404, Cyprus		
Tuesday 11 September 2018: 09.30-17.30 Meeting at the lobby of the Hotel:09.30 (Inspection team: Romano, Liesbet, Ritianne) Landfill plant address: Koshi, Larnaca Λάρνακα.		
1. Transportation to the Landfill plant		09.30 – 10.30
2.	**Joint inspection: Cyprus + IMPEL Inspectors**	10.30 – 16.30
2.1	Description of the landfill plant by Cyprus inspector or operator	10.30 –11.00
2.2	Technical and administrative inspection. Use of checklist for technical inspection in situ on (e.g.) the following items: • waste acceptance and pre-treatment of waste before landfilling; • biogas management; • meteoric water and ground water management – leachate; • closing/opening cells	11.00 – 13.00
Lunch		13.00 – 13.30
2.3	Inspection team meeting: results of the inspection. Main achievements (technical and procedural aspects).	13.30 – 16.00
2.4	Inspection team meeting: results of the inspection. Main achievements (technical and procedural aspects).	16.00-16.30
Transport back to the Hotel		16.30 – 17.30
Dinner		20.00

Wednesday 12 September 2018: 9.00-17.00 Meeting at the lobby of the Hotel: 8.15 (IMPEL + MIW Team members) Meeting venue address: 20-22 28th Oktovriouave., 2414, Nicosia			
1. Welcome by host			09.15 - 09.25
2. Welcome by Chairs, introduction to agenda and round of introductions by participants. *Appoint: referent for the Final Report, referent for article (IMPEL newsletter)*			09.25 – 09.40
3.	**State of play MiW-IMPEL guidance– CHAIR Jan Teekens**		09.40 – 10.15
3.1	Presentation on the State of play of the work: • recap/overview on aims, structure and proposed content of guidance • results of workshops and work sessions	Ilia Neudecker	09.40 – 10.00
4.2	Plenary discussion		10.00 – 10.15
4.	**End of waste country practices – CHAIR Romano Ruggeri**		10.15 – 12.30

4.1	Presentation on End of Waste in Estonia	Kristel Lopsik	10.15 – 10.35
4.2	Presentation on End of Waste in Flanders, Belgium	LiesbetRommens	10.35 – 11.00
Coffee			11.00 – 11.30
4.3	Presentation of the analysis done by IMPEL (survey and interviews) on MS practices deciding on/verifying EoW status and how these practices can be taken into account in the guidance (Chapter 2 and Annexes)	Luca Paradisi	11:30 – 12:00
4.2	Plenary discussion		12.00 – 12.30
Lunch			12.30 – 13.30
5.	**In depth discussion on drafts for the guidance – CHAIR Jan Teekens** Reviewing the different drafts on content, structure and presentation in particular with the aim of checking if they fulfil the needs of the regulator when dealing with eco-innovations/ EoW.		**13.30 – 15.30**
5.1	Introduction to draft Chapter 2	Ilia Neudecker	13.30 – 13.40
5.2	Plenary discussion	Referents: Sabina Nilsson, Arjen Snijder, Sofia Christoforou	13:40 – 14:40
5.3	Introduction to draft Annexes I, II and III	Romano Ruggeri	14.40 – 14.50
5.4	Plenary discussion	Referents: Kristel Lopsik, Neoklis Antoniou, Myriam Fernandez	14.50 – 15.30
Coffee			15.30 – 15.45
6.	**In depth discussion on drafts for the guidance – continued – CHAIR Romano Ruggeri**		15:45 – 17:45
6.1	Introduction on Chapter 3 (governance)	Jan Teekens	15.45 – 15.55
6.2	Plenary discussion	Referents: David Pugh, Gabriëlle Kühn	15:55 – 16:45
6.3	Chapter 5 (business)	Ilia Neudecker	16:45 – 16:55
6.4	Plenary discussion	Referent: David Pugh, Gabriëlle Kühn	16.55 - 17.45
7.	**Closure**		17.45 – 18.00

Thursday 13 September 2018 (9.00-15.00) Meeting at the lobby of the Hotel: 8.15 (IMPEL + MIW Team members) Meeting venue address: 20-22 28th Oktovriouave., 2414, Nicosia		
1.	**In depth discussion on drafts – continued – CHAIR Jan Teekens** Further discussion on the drafts, building on the outcomes of day one and assessing next steps	09.00 – 11.00
1.1	Plenary discussion	09.00 – 11.00

Coffee			11.00 – 11.15
2	**Reporting of the inspection – CHAIR Romano Ruggeri**		11.15 - 11.45
2.1	Reporting from the inspection of day 1		11.15 - 11.45
3	**Training programme – CHAIR Romano Ruggeri**		11.45 – 12.45
3.1	Training: what's going on in IMPEL – the strategic role of "Landfill & CE" Project		11.45 - 12.00
3.2	Discussion: Outcomes from the survey on the needs of capacity building and training	Anna Poplaswska	12.00 – 12.15
3.3	Plenary discussion		12.15 – 12.45
Lunch			12.45 – 13.45
5	**Training programme – *continued* – CHAIR Romano Ruggeri**		13.45 – 14.15
5.1	Plenary discussion and conclusions		13.45 – 14.15
6	**Wrap up workshop, next steps and closure**		14:15 – 14:30

5. Department of Environment–Nicosia

5.1. Organization

The mission of the Department of Environment is to protect the environment through effective management, and strengthening public awareness for the benefit of public health, quality of life and against loss of biodiversity both for today's society and future generations. Environmental protection is achieved through the rational management of resources and waste, the impact assessment, pollution control and actions totackle on climate change and halt the risk of loss of species and habitats, while helping to promote green growth within the contents of circular economy.

Key Objectives of the three years 2016 – 2018:

- Reducing the environmental impact of development projects and projects.
- Implementation of management plans and actions for protected areas NATURA 2000 network aiming at the effective protection of the Network.
- Promote the licensing of all facilities that have waste water in order to protect both soil and water resources of Cyprus.
- Create an integrated network of waste management installations promoting separation systems at source, as an important target for recycling and recovery.
- Mitigation and adaptation to climate change.
- Strengthening institutional capacity and improving the efficiency of the Department, also, is always within the priority areas.

5.2. Structure and tasks

- Department of Environment performs activities in the fields of:
- Environmental Impact Assessment (EIA)
- Protection and Management of Nature and Biodiversity
- Waste Management
- Water Pollution Control
- Climate Action
- Permanent Representation of Cyprus to the European Union (NAAT)
- General issues and Programming
- Accounting unit and Archives

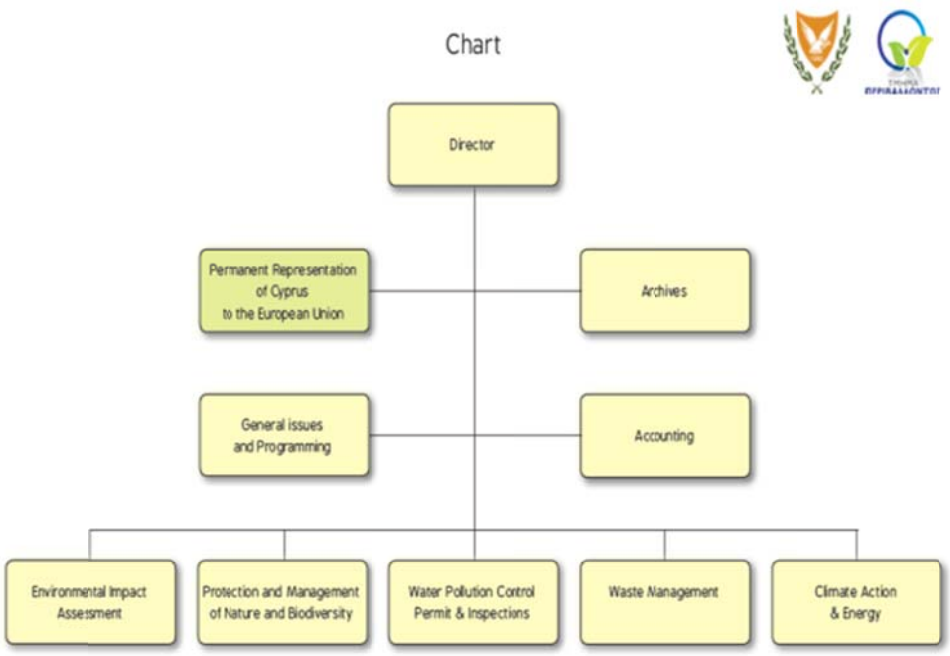


Fig. 2: Organization chart of Department of the Environment of Cyprus

5.3. Strategic plan of Department of the Environment

Climate change mitigation and adaptation

- Reduction in greenhouse gas emissions and adaptation to climate change
- Implementation of international and EU commitments on climate change, protection of the ozone layer and regulation and monitoring of fluorinated greenhouse gases
- Coordination of climate change policy issues
- Project Implementation – Funding of projects /actions on climate change
- Dissemination of information on climate change

Environmental protection

- Protection of the environment from the activities of industrial and livestock installations, waste management operators and waste producers
- Managing species and habitats with the objective of halting the degradation of the conservation status
- Assessment of the impacts on the environment from plans /programmes /projects and other actions
- Dissemination of information

- Project implementation

Resource efficiency

- Efficient management of waste, use of waste as a resource and actions towards the transition to a green economy
- Promoting the implementation and wider uptake of environmental market tools and labeling (EMAS, ECOLABEL, Green Public Procurement)
- Project implementation

Enhancing the institutional capacity and imrpoving the effectiveness of the Department

- Improving the institutional framework
- Improving productivity and the quality of the services provided
- Programmes to enhance the implementation of objectives

6. The visited installation

Solid Domestic Waste in Larnaca-Famagusta Districts has been operating since 2010. In the past 2 weeks, Nicosia district has been added (it is envisaged that incoming waste will increase from 110,000 Tonnes/year to 190, 000 Tonnes/year.) The installation consists of:

1. Reception Hall of mixed household waste:
    - Waste is received 24/7 at the Reception Hall.
    - This area consists of TWO bunkers and 8 shutters.
    - Trucks are washed as soon as they exit this area (by using the treated water).
    - The unpermitted waste, bulky waste and metal are removed by the grabber and stored in a contained area.
    - Shredder equipment for bulky waste, mattresses, trees, and tyres. Shredded material is landfilled.

2. Mechanical Separation Facility:
    - Outbound materials / products include plastic bags, PET packages, PE/PP packages, mixed paper-cardboard, ferrous metals, non-ferrous metals, glass, RDF (Refuse Derived Fuel), organic, residual waste (landfilled), hazardous waste (removed), waste exceeding plant process capacity: landfilled without treatment.

3. Composting area (green waste, urban waste):
    - Organic waste from MSW and green waste is collected and transferred to intensive aerobic composting process for stabilisation.

- Operator adjusts parameters such as temperature, oxygen concentration and air flow to ensure a successful and on-time completion of the process.
- Air is sucked from the biocells and sent to thermal oxidation.
- Mature compost is used for covering material (mixed with soil) for residual waste in landfill and for restoration of old landfills.

4. Wastewater Treatment Station:
    - Two-step wastewater-leachate treatment facility: aerobic stabilisation and reverse osmosis.
    - Capable of processing 200m3/day.
    - Used to cool heat exchangers used in composting process and for irrigation purposes within the installation (100% reused in the process).
    - 65% clean water – 35% “residual” water (sprayed in the landfill surface).
    - Sludge is sent to composting.

5. Landfill:
    - Landfill area is used for the residues of the mechanical treatment.
    - Equipped with leachate collection pipe network
    - Covered by a biogas collection system (horizontal and vertical).The system is attached to a flare unit for the combustion of the produced biogas. However, this unit has never been used to date in view of low concentration of methane being produced.
    - Soil and compost used for daily coverage

Fig.3: Photo of the inspected solid domestic waste treatment facility in Larnaca-Famagusta Districts

7. Results of Day 1: joint inspection of waste treatment facility

The joint inspection was carried out by the local authority (7 inspectors) and IMPEL team members (3 inspectors). At the beginning Cyprus inspector and the operator introduced themselves and described the waste treatment facility. Inspection was carried out by using checklists to inspect the following: waste acceptance and pre-treatment of waste before landfilling, biogas management, meteoric water and ground water management – leachate, closing/opening cells. In the end inspection team had a meeting where theysummarized the results of the inspection and pointed out main achievements. On Day 3 one of the participating IMPEL team member Liesbet Rommens presented the results for the other project members who did not take part in the joint inspection. Good practices were presented:

1) Inspectors:
    - Checklists for records and site inspection are used.
    - Thorough preparation before the inspection is carried out– review of permit (highlighting the important conditions) and reviewing the 3 previous inspection reports to cross-check for any non-compliances.
    - Inspection reports are uploaded on their website.
2) Operator:
    - The treated water and compost material is reused within the facility.

Some suggestions and ideas were presented to bear in mind in further inspections:

1) Inspectors:
    - Air pollution should be monitored by inspectors, especially since it is included in the IPPC permit (biogas is not a business of the environmental inspector so far, as air pollution is a task of a different Ministry).
    - Increase of technical support is advisable.
    - Risk Assessment Matrix (IRAM) should be applied: inspection frequency is decided by inspectors.
    - Need for prioritizing non-routine inspection (e.g. complaints).
    - Suggestions to improve the permit should be made.
2) Operator:
    - Improvement in rainwater containment– at the moment it was directly discharged to the surrounding environment and the landfill and no reuse in the process.
    - Reception Hall shutters should be closed as soon as the truck exits the area due to odour issues.
    - Reduce the amount of waste stored to prevent risk of fires.

Fig.4: Mechanical separation facility at the inspected site.

Fig.5: Biogas unit at the inspected site.

These introductory presentations were followed by the results of the Subgroups:

Subgroup 1: Checklist for inspectors about Municipal Solid Waste treatment before landfilling

Subgroup 2: Checklist for inspectors about industrial Waste treatment before landfilling

Subgroup 3: BAT's and Procedures for pretreatment of waste before landfilling.

8. Results of Day 2: discussion on the draft chapters

8.1. Sate of play MiW-IMPEL guidance

After opening remarks and the introduction of participants a short overview of the Cyprus Department of Environment was made by the representative.

Ilia Neudecker gave an overview of the state of play of the guidance and activities so far. MIW+IMPEL goals are to facilitate transition to circular economy and to support better regulation. Regarding the guidance, the policy chapter is still under development, content from business perspective has been added after stakeholder event. At the moment input into current draft chapter is needed. One chapter will be dealing with plastic to serve as a test case to apply the content of the chapters. A complete draft version of the guidance should be ready for discussions by the end of this year (workshop Edinburgh). This is the outline of the guidance:

- Chapter 1 Introduction: context, aim, purpose, audiences
- Chapter 2 Relevant legislation
- Chapter 3 Governance (supporting regulators)
- Chapter 4 Policy (suggestions for policy-makers)
- Chapter 5 Business perspective (also NGOs to be included)
- Chapter 6 Plastics (cross-cutting through Chs 2-5)
- Annex I EoW-decisions
- Annex II EoW-inspections
- Annex III Proposal for a database on EoW-decisions

Jan Teekens adds that the target group of the guidance are the regulators and explains that regulators might be either permitters or policy regulators. The draft of chapter 1 of the guidance (introduction) draft was not circulated, as it explains how everything comes together. The guidance is intended to give a full view of involved parties that is why business chapter has been integrated. Annexes will be practical tools on how to verify End- of- Waste (EoW) status for example. Sharing knowledge is sharing decisions on EoW.

Romano Ruggeri explains that the guidance should be general and practical and to be able to change it accordingly keeping the future perspectives in mind. There is a need to have plastic as a subject in the guidance to solve problems with recycling due to bans on export to China. Everyone should give feedback, no matter at what level.

From other participants it was pointed out that the knowledge is out there but in different countries, it is scattered and this project is there to help to solve the problem, to discover the different ways

from others, so that decision are easier to make. In industry they are used to dealing with waste and EoW issues are not so widespread at the moment, in more favour are the by-products, but with circular economy as the leading direction the role of EoW will be increasing, that is why knowledge and practices are welcomed to be shared.

8.2. End of waste country practices

Presenter: *Kristel Lopsik (Estonia)*

Key points of presentation: Estonia differs two types of EoW status. EoW on narrow scale means that EoW status is achieved by compliance with EoW criteria which is set on EU level or in a regulation of the Minister. EoW on a broader scale means deciding on a case-by-case basis which involves any material to be recycled into products where it can clearly differ from waste either visually or by the use of the product, no other treatment operation is necessary. There are regulations of the Minister in place for fuel additive, digestate, sewage sludge and compost. Two case studies were presented on oil recovery operators and and a court case of deciding EoW status for compost.

Presenter: *Liesbet Rommens (Belgium)*

Key points of presentation: an overview of Flemish inspection system was given. Regarding waste inspections the annual plan consists of enforcement campaigns, routine inspections, sampling, chain inspection (on waste traffic), REACH, SEVESO, reactive inspections. Detailed information on sampling was given. Depending on the type of waste, a certain procedure is followed described in a quality manual of sampling which is composed by VITO (Flemish institute for technological research and development) on behalf of the EIS. Sampling can be done by inspectors who are trained for that. EoW inspections include checks if the application area is correct, if the composition meets the specific compositions criteria as listed in Flemish legislation. There are raw material declarations in place. For enforcement campaign asbestos waste is this year priority to raise awareness, to remove in a safe manner.

Fig.6: Sampling of asbestos from recycled construction waste.

Presenter: *Luca Paradisi (EU practices)*

Key points of presentation:results of the survey and interviews on EoW practices in different project members were presented including a map of EoW systems. For methodology survey, interviews, online discussions, websites, official documents were studied. EoW status is mostly given by permitting (P on the map), but also verification system after self-assessment (Vs on the map). In Netherlands the system is a mix of national decrees on end of waste one national decree with specific end-of-waste criteria (rubble granulate) and one for by-products (crude glycerin) and companies can apply for a non-binding governmental declaratory opinion on the end-of-waste and/or by-product status of a substance or object.

Some countries have not responded yet or ND (Norway, Denmark, Lithuania, Slovakia, Malta), some countries do not have any national regulation. Very good overview of the different practices of EoW criteria. According to the recast of Waste Framework Directive the self-assessment fits for verification. For every possibility you have to have a procedure. Each system has its gaps, no “best system”. It is the question of balance. There are several instruments to be described in the Annexes. Iceland has a web application system in place to apply for EoW status and the possibility to include documents/proof. This seems very interesting to explore further.

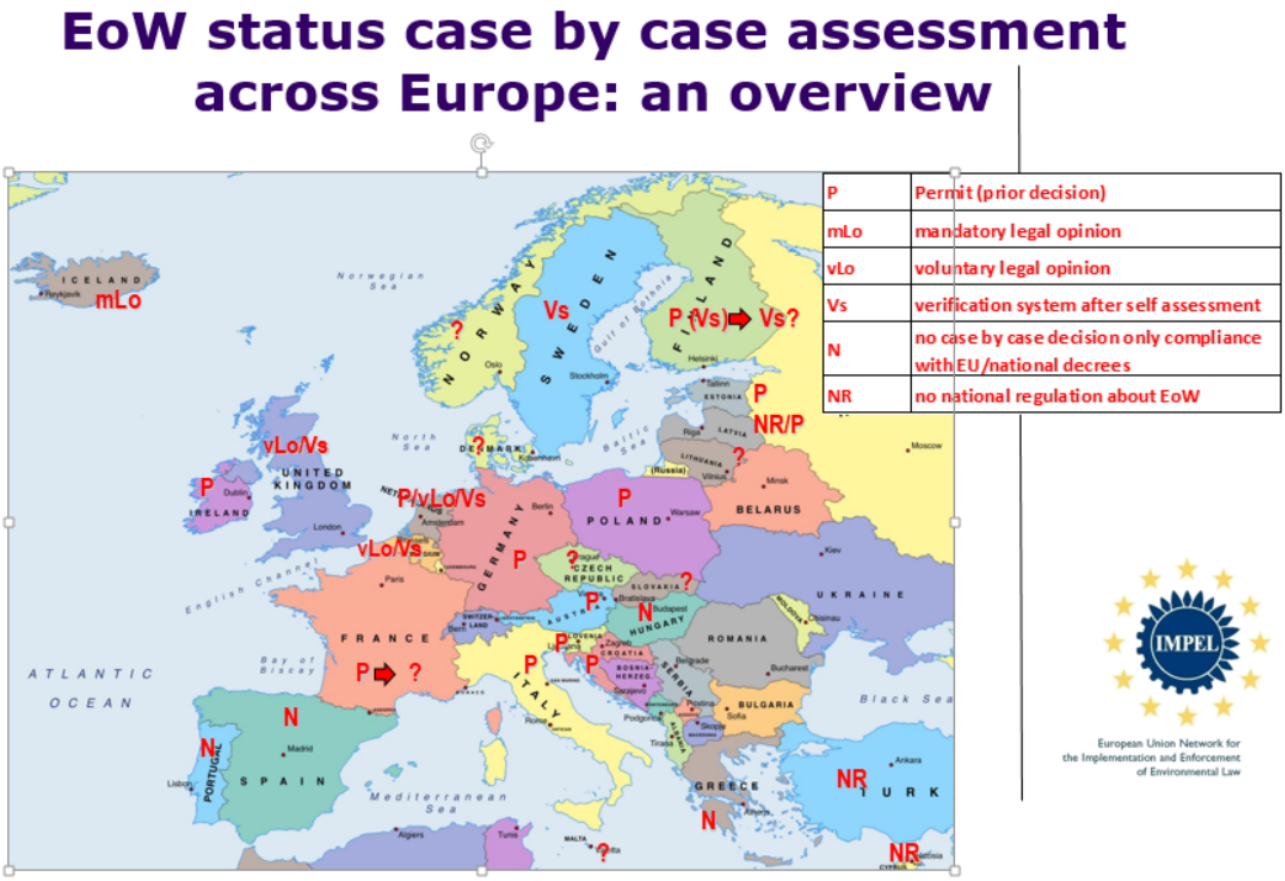


Fig.7: End of Waste practices in member states.

Most relevant results/needs to take in account in the MiW/IMPEL guidance:

1. Define procedures/practical tools to fulfil the 4 criteria (e.g. IsitWaste tool/French procedure): more detailed description
    a. List of document for the application
    b. Content of the permit/Legal opinion
    c. Conformity declaration for the EoW
    d. Verification check list
2. Give practical guidance for REACH registration of EoW (SE – KEMI)
3. Agreement among different countries (EoW should be accepted in the destination country). **EoW Database**

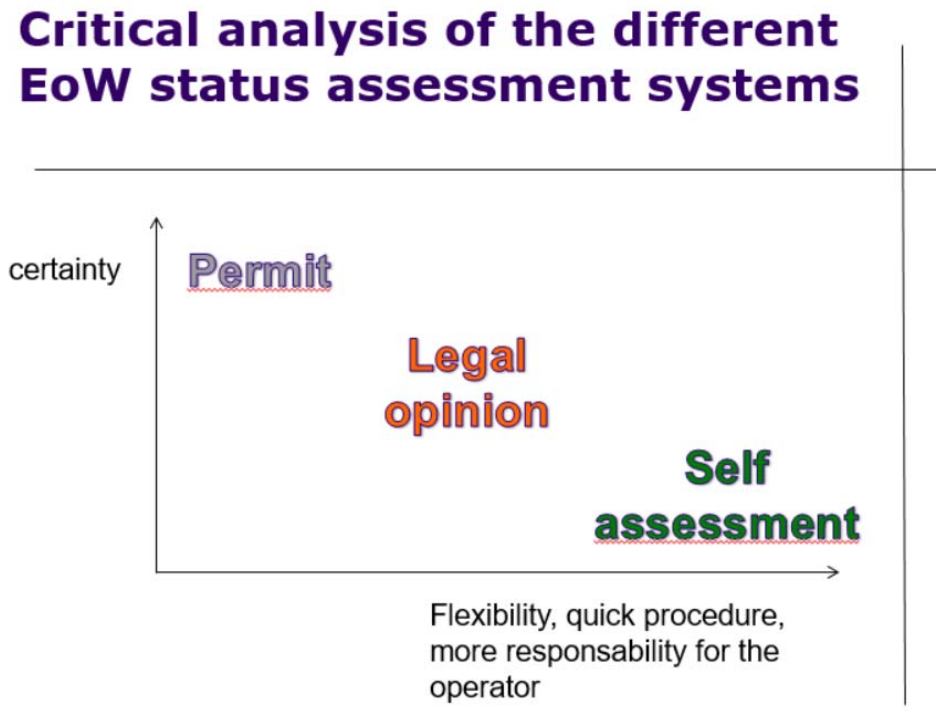


Fig.8: Matrix on different EoW status assessment systems.

8.3. Discussion on drafts for the guidance

Subject: Chapter 2 (Legislation)

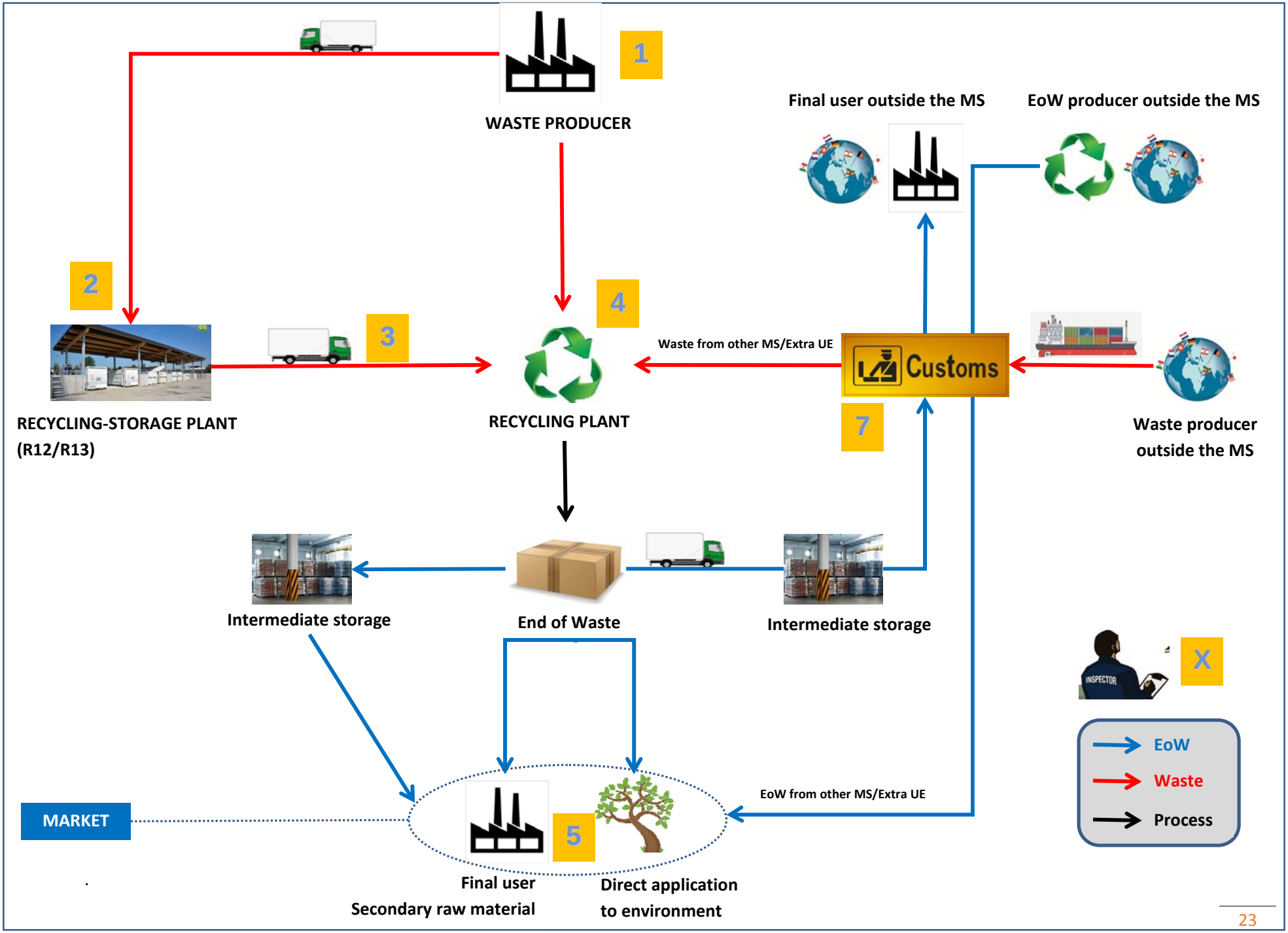
Referents: Sabina Nilsson, Arjen Snijder, Sofia Christoforou

Key points from the plenary discussion: Covers impact on policy-maker and regulator. The question is how to transform into practical advices? The aim is to give tips and looking in the practice of recycling (e.g. new initiates as biorefinery to create PET). Introduction and legislation should be in different subchapters (e.g. 2.2, 2.3). More attention should be made on grouping the information (e.g. examples). It is proposed to use quotations to illustrate the text. Examples should go in depth (e.g. tyre recyclate/granulate example with REACH compliance). Everyone is invited to come forward with examples and how to present them. Some examples should be presented based on European Court decision. SVHC and POPs regulation should be pointed out. Eco-innovations and clusters should be described. One example from ceramics industry in Valencia (dome permit) to use sludge in the process between the cluster. Types of clusters: regional and waste stream based (value chain specific). Introductory chapter should try to look at regulatory cycles presented (policy-implementation-feedback) and integrate it into chapter. The cycle is missing business side. Bullet points should be pointed out to address more important issues. Defining terms: policy-maker, regulator etc. Examples of criteria set for by-product are welcomed. Aswell as answering questions in Ch. 2. The following examples should be added: TFS, REACH procedures, dome permit examples, biorefinery.

Subject: Annexes I, II and III

Referents: KristelLopsik, Neoklis Antoniou, Myriam Fernandez

Key points from the plenary discussion: Discussion of WSR and movement of EoW products. The problem is that when a product has been granted EoW status in one MS then it does not have to be a product in another MS and according to WSR it is considered waste when one of the competent authorities claims that. Some examples were discussed. Romano explained IRAM inspection system and asuggestion was to add different waste-related risk criteria to IRAM model. Description of self-assessment verification system (used in Netherlands, burden of proof is on the producer). Romano presented the following scheme of an integrated inspection system:


1
WASTE PRODUCER
Final user outside the MS
EoW producer outside the MS
2
3
4
RECYCLING-STORAGE PLANT
(R12/R13)
RECYCLING PLANT
Waste from other MS/Extra UE
Customs
7
Waste producer
outside the MS
Intermediate storage
End of Waste
Intermediate storage
X
EoW
Waste
Process
MARKET
5
EoW from other MS/Extra UE
Final user
Secondary raw material
Direct application
to environment

A question of customs control needs to be clarified within the movements of EU. Different controls should be applicable at different sites Different approaches to moments when waste has ceased to be waste (time frame, producing or selling). Checks can be done at end users. Sharing of information between different authorities involved. Prioritization of inspection points.

Structure of the database was discussed (what info is collected and in what format), where it is located and where comes the feed. This is an analysis/test. The aim is to test usefulness of the tool to create a level playing field. The countries should have same provisions, including standards, analysis methodology etc. First phase is planned to be an Excel file. Feedback is needed to go on.

Subject: Chapter III (Governance)

Referents: David Pugh, Gabriëlle Kühn

Key points from the plenary discussion: Regulators are on different levels. Expertise knowledge on EoW is needed, since staff is lacking technical knowledge. Maybe a committee by IMPEL or some other institution is needed. Recasted WFD directive might make things more clear what is needed for implementation. Shared expertise is a shared burden. IMPEL Plan for next year is to develop a knowledge and training centre. Help for Member States on dealing with different topics. Precautionary principle when knowledge is lacking. Flexible permit. A suggestion is made to rename the term governess (e.g. regulation).

Subject: Chapter V (Business)

Referents: David Pugh, Gabriëlle Kühn

Key points from the plenary discussion: this chapter gives an insight from a business perspective. From the communication with stakeholders from the businesses problems regarding regulation were presented, such as timeliness, communication, lot of paperwork and the risk of costliness of certain procedures in comparison to the amount of effort. From a business perspective another question is how to use the information in the guidance, what to do with the information even if You do not agree with it. Suggestion is to start from the problems and then find solutions from the following chapters. Discussion about European Court decisions whether to include in the guideline. Presenting of successes should be included as an example. Question of where to include this examples.

9. Results of Day 3: presentation of joint inspection and training programme

As the wrap up of previous day a deadline was given to send any comments in 2 weeks' time. It was agreed to send them by e-mail, not Basecamp to due limited access of the project members participating in the project. Chapter 3 is on the shoulder of Andrew. Chapter 2 and 5 will be on Elia. Annexes are up to the IMPEL group to write and amend. By 5th of Oct the comments should be made the latest. Plastics case study will be discussed in early November during the working session on plastics. The working session on Policy-makers is planned to take place mid-Oct. Documents should be circulated through Basecamp to make them available to other members. Chapter of business might be commented by business representative.

The results from the joint inspection has been described in chapter 7 in this report as Day 1 activities.

Anna Poplawska presented the results of the survey on the training needs. Romano introduces European Commission communication about action plan in circular economy of training needs and actions to be taken . Ambition is to draft a training programme which will be developed in 3 years. Which are the training needs on waste management supporting competent authority and which are the tools we can use. New tools, such as e-learning, videoconferences should be used to spread information. The barrier for carrying out training is time and money. Need for participants: collect ideas about topics and tools until the end of Nov. We need trainers (who might need training aswell) and a detailed training programme. MIW supports the product of training programme. Results on the training programme survey were presented. Only 9 countries have responded, more feedback is needed. From the answers the resulting main needs are: pre-treatment, EoW, by-product, waste classification, joint inspection in landfill (can be horizontal to other categories). The result depend whether the topics were presented in the questionnaire or not. Training of other parties (prosecutors, police) should be also taken into account. The subject of the training might determine the tools to use. Taking care of methodology. Anna is in charge of the survey. Experts will be looked for to be trainers.

10. Conclusions and further steps

Presentations and discussions gave a good overview of the progress of the guidelines and gave good input to improve and amend the guidance further. Besides being a good information source for authorities, it is good that businesses have been involved with their perspectives and opinions on circular economy and end of waste status. Regarding the work done so far, a thorough analysis was presented to illustrate and give information about different practices regarding Member States and the regulation of EoW status. This was very much needed and the idea is to gather these decisions and information about EoW status decisions into a database for which an Excel demo-version will be made. A possible construction of the database was presented.The guidance will be divided into chapters and annexes where the chapters explain the legislation and background and the annexes contain detailed information for regulators and inspectors to deal with EoW status. Furthermore, the results on the survey of training needs was presented and this will be used to develop training programme and different methodologies for trainings in next steps of the project. Mostly Member States would like to have training in EoW status, pre-treatment of waste, classification of waste, but differences between several waste issues were marginal. Preferred training methods were joint inspections, workshops, seminars.E-training was a bit less preferred. This was a good starting point to develop training programme even further but more input would be needed from Member States to get a better and more validated outcome.

Regarding further steps then discussion about a new TOR project was carried out and it was stated that input for project application is needed. Budget and goals need to be defined. Next year the focus will be on by-products, second stream is training programme. The task is to continue to update landfill and pre-treatment inspection guideline. Meetings taking place next year might be in subgroups with a referent. To achieve a good result voluntary members are looked for as referents (leaders of sub-groups). Next meeting is in November, by which time the draft must be ready.

Commitments after the meeting

- Within 15 days : Draft of the Final report of the meeting (by Project leaders and volunteer)
- Within 15 days: Draft of the Inspection Report (by Project leaders and Inspection leader)
- Within 15 days: Article for IMPEL newsletter (by a Volunteer)
- October: Feedback on Final Report chapters + Annexes Project members (all – Basecamp)
- October: Final Report MIW + IMPEL (by Core teams MIW and IMPEL)
- October: Final Draft of Training Programme (by Training Subgroup)
- October: Preparation of the third meeting (by Project leaders)

Annexes

Annex I. Report of the Inspection

Annex II. Presentations

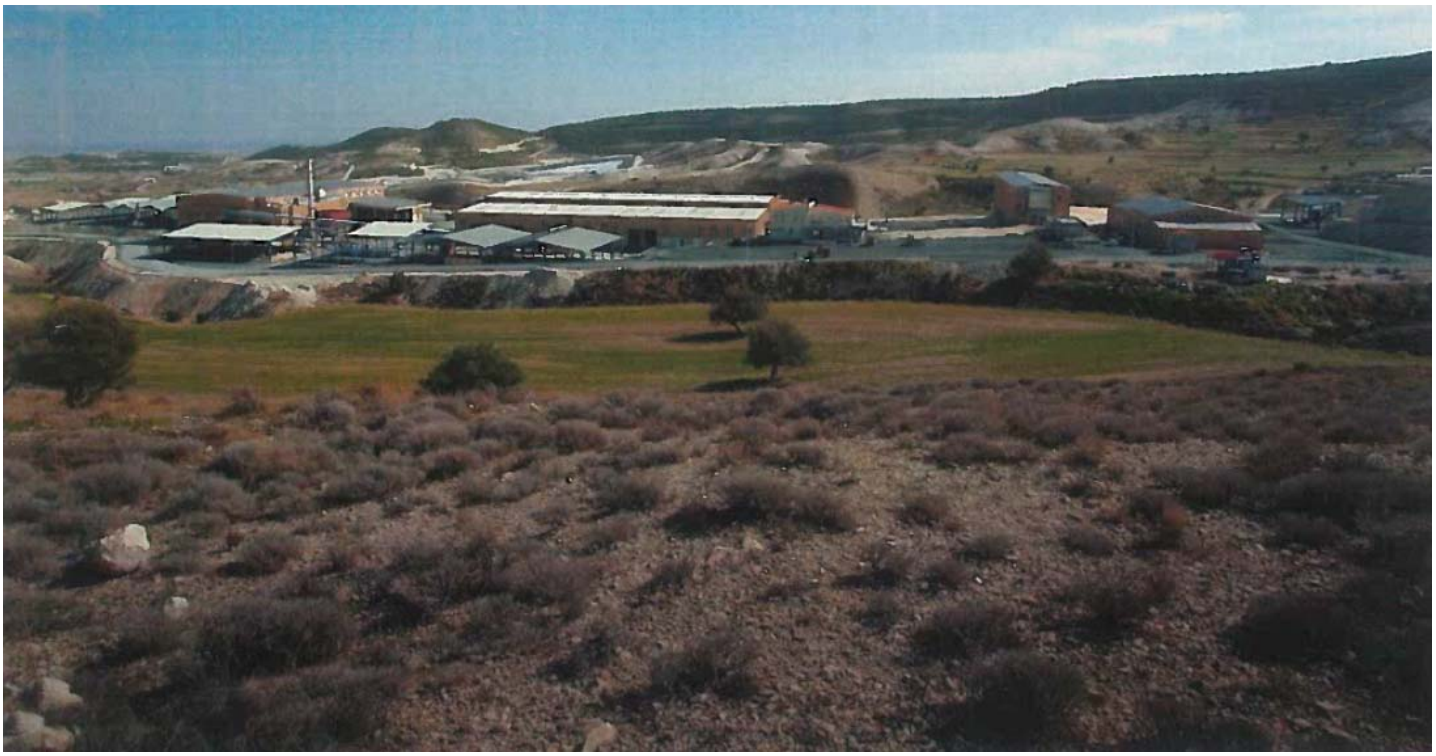
1 MS practices to assess EoW (Luca Paradisi)
2 Inspections on waste and End of Waste in the Flemish region (Liesbet Rommens)
3 MiW – IMPEL Guidance – Chapter 2 (Ilia Neudecker)
4 MiW – IMPEL Guidance – Regulatory cycle (Gabrielle Khun)
5 MiW – IMPEL Guidance – State of Play (Ilia Neudecker)
6 End of Waste in Estonia (Kristel Lopsik)
7 Reporting from site visit (Inspection team)
8 Training Programme 2018-2020: results of the survey (Anna Poplawska)

European Union Network for the Implementation and Enforcement of Environmental Law

Landfill and Circular Economy 2018

ANNEX 1: Report of the JOINT INSPECTION in Nicosia (Cyprus) 11th September 2018

Installation: Integrated Solid Waste Management Plant (OEDA) in Koshi



Date of report: September 2018

TABLE OF CONTENTS

1. DESCRIPTION OF THE INSTALLATION

1.1. Introduction

A visit to the landfill which operations include treatment of solid domestic waste from Larnaca and Famagusta Districts was carried out on 11th September 2018. The plant is an IED installation and has been in operation since 2010. Recently, the landfill is also accepting waste from Nicosia district and it is envisaged that incoming waste will increase from 110 tonnes/year to 190,000 tonnes/year.

The company running this installation is HELECTOR SA, a member of ELLAKTOR SA, which is a producer of electricity from renewable sources and a company that designs, builds and operates projects for environmental protection.

IMPEL's aim was to observe the relationship between the inspectors and operator during a real site inspection, however, it was rather a simulation of the site inspection.

The site visit started off with a meeting between IMPEL inspectors, Cyprus inspectors and the operators. The operators carried out a presentation on the installation and on its operations. Cyprus inspectors stated that this landfill is an installation which does not have substantial non compliances. In fact, it is inspected approximately once a year.

The relationship between the inspectorate and the operator seemed friendly during the site visit. Operators also welcomed IMPEL inspectorate and provided a thorough explanation of the operations throughout the site visit.

1.1.1 Description of the installation

The following areas were visited by the inspectors and the operators:

1. Reception Hall of mixed household waste

2. Mechanical Separation Facility

3. Composting area (green waste, urban waste)

4. Wastewater Treatment Station

5. Landfill

1. Reception Hall of mixed household waste

The Reception Hall receives waste 24/7 and it operates on a three shift bases from 06:00am until 11:30pm while maintenance and cleaning is carried out from 11:30am to 04:00am. All garbage trucks are directed to the weighing station, where they are automatically recorded, weighed and subsequently directed to the Reception Hall. The Reception facility is capable of accommodating the unloading of 8 trucks simultaneously. This area consists of 8 shutters, the majority of which were closed during the time of visit. This aids in preventing odour from emanating from the Reception Hall. Trucks are washed as soon as they exit this area by using the treated water (further detail will be provided under the **'Wastewater Treatment Station'.)**

The recording of the data in relationto the waste input (type, amount, origin, date and time of entrance, truck's number transporters data etc.) is fully automated and all data is stored in alocal database. The complete enclosed area of the Reception Hall is constantly kept under pressure (through de-dusting filters) so that no odours are emitted during the unloading process. Subsequently, the waste is fed by means of manually operated crane, to dosing systems-moving floors. The complete process is developed in two parallel lines, each line with a nominal throughout capacity of 20 tons/hour. Following the feeding-dosing process, the bag opening procedure is carried out which is done by bag openers devices. These are especially designe to open plastic garbage bags so that waste is spread on the downstream conveyor belts and process lineis smoothed.

The unpermitted waste including also bulky waste and metal waste,is removed by the grabber equipment and stored in a contained area.

Figure 1: Reception Hall of mixed household waste

Outside, opposite the Reception Hall a shredder equipment for bulky waste, mattresses, trees, and tyres was observed. Operators stated that all shredded material is landfilled.

Figure 2: Shredder equipment

2. Mechanical Separation Facility

Within the Mechanical Separation Facility, the following materials/products are produced:

- Plastic bags
- PET Packages
- PE/PP Packages
- Mixed paper-cardboard
- Ferrous metals
- Non-ferrous metals
- Glass
- RDF (Refuse Derived Fuel)
- Organic

Any residual waste is landfilled and hazardous waste is removed and disposed of at other permitted sites. If the waste exceeds plant process capacity, such waste is landfilled without treatment.

The above-mentioned materials/productsare normally exported outside of Cyprus. Operators explained that recently, they have been having an issue with exporting plastic and paper waste due to the bans in China on waste)

After the bag openers procedure the waste stream is transported through conveyor belts inside the Mechanical Separation Hall, where all sorting-recovering processes take place. The Mechanical Separation Facility can treat either mixed household waste or pre-sorted waste from collection programs to the source. The different waste streams after the separation processes and the mechanical treatment of the input waste are:

a. The fines stream, which occurs after secondary screening, then driven to intensive composting
b. The stream of the light fraction (2D fraction) which is produced after screening and ballistic separation of the waste, mainly consists of paper, cardboard, textiles, plastic film (plastic bags). This stream goes through a cascade of optical classifiers for the recovery of paper, cardboard and plastic film. The non-recovered residues of this stream are the raw materials for the produced RDF.
c. The stream of the heavy and rolling fraction (3D fraction) which is produced after screening and ballistic separation of the waste and includes all the PET, HDPE and PP packages to be recovered by means of optical classifiers.
d. The stream of ferrous metals collected by magnetization
e. The stream of non ferrous metals separated by eddy current separators

Figure 3: Mechanical Separation Facility

After the completion of all separation, classification and recovery processes, all recovered materials streams are transported to the quality control station. Each specific stream is further manually cleaned and controlled. Each specific recovered material is intermediately stored prior being baled, weighed and loaded for transportation.

Both reception and mechanical facilities are equipped with dedusting and deodorization (biofilters) systems. The excessive process air of the composting unit is treated to a recuperative thermal oxidization(RTO) system prior being emitted to the atmosphere. The quality of the RTO emissions is constantly recorded.

3. Composting area (green waste, urban waste)

The organic waste from MSW and green waste is collected and transferred to an intensive aerobic composting process for stabilisation. Air is sucked from the biocells sent to thermal oxidation (ELV at the chimney). Operator adjusts parameters such as temperature, oxygen concentration and air flow to ensure a successful and on-time completion of the process. These parameters are monitored and recorded.
After fifteen days of composting in a closed area, the composted material is stored in piles. Piles of compost are stored for five to six weeks and mechanically mixed by compost turner vehicleuntil

maturation is completed. The mature compost is used for covering material (mixed with soil) for residual waste in landfill and for the restoration of old landfills.

Figure 4a: Composting cells

Figure 4b: Composting area

Figure 4c: Compost storage

4. Wastewater Treatment Station

The wastewater-leachate treatment facility consists of Aerobic stabilisation and Reverse Osmosis. It is capable of processing 200m3/day. The product is used to cool heat exchangers used in composting process and for irrigation purposes within the installation. It is 100% reused in the process(65% clean water and 35% “residual” water (sprayed in the landfill surface)). The sludge is also sent for composting.

Figure 5: Waste Water Treatment Station

5. Landfill

The Landfill area is used for the residues of the mechanical treatment. It is equipped with leachate collection pipe network and covered by a biogas collection system (horizontal and vertical).The system is attached to a flare unit for the combustion of the produced biogas. However, this unit has never been used to date in view of low concentration of methane being produced. Soil and compost are used for daily coverage of the landfill.

Figure 6: Landfill

Figure 7: Biogas Unit

1.1.2 Records and Documents

Following the site visit, Cyprus inspectors were asked to explain what type of records and documents they request during the site inspection. Inspectors usually start off their site visit by requesting records and documents as specified in the permit. Inspectors mainly focus on the incoming waste due to substantial amount of illegal dumping within the district.

Cyprus inspectors also explained that at present the installation has two permits i.e. Waste Permit and IPPC Permit. They are working on integrating such permits.

After an administrative inspection of records and documents, an inspection on site is performed with special attention for issues or comments from the previous inspections.

2 INSPECTION TEAM

The inspection group was composed of IMPEL and Cyprus inspectors:

- Inspector Italy: Romano Ruggeri (Project Leader)
- Inspector Malta: Kalvis Avotinš
- Inspector Belgium, Flanders: Liesbet Rommens
- Inspector Cyprus: Neoklis Antoniou + two inspectors

Figure 8: Inspection Group Photo

3 CONCLUSIONS

3.1 Strength and weaknesses on the operations of the installation

3.1.1 List of strengths

- The treated water and compost material is reused within the facility:
- Water and leachate are treated in the waste water treatment station. The treated water is reused within the facility. Also Composted materials are reused as covering material or used for the restauration of old landfills.
- Almost 50% of the input domestic mixed waste is diverted from landfilling to save landfill space and to reduce significantly CH4 emissions

- Approximately 15% of recyclables is recovered that would otherwise be dumped in the landfill
- The CH4 emissions of the final residue are significantly lower
- The organic fractions of the waste (approximately 45% of the input) is stabilised through the aerobic composting process. The intensive composting process occurs in a fully automatic closed area, so there are no odour emissions from this area.Air emissions from this area are treated in a recuperative thermal oxidization system.
- The plant's operation contributes significantly to the country's fulfilment of the relevant EU legislations.
- Due to strict coverage (with soil of composted organic waste) of the dumped waste in the landfill, there was no odournearby the landfill from the waste itself.

3.1.2 List of weaknesses

- Lack of rainwater containment. It is directly discharged to the surrounding environment and the landfill. Rainwater is not reused.
- Reception Hall shutters should be closed as soon as the truck exits the area due to odour issues.
- Reduce the amount of waste stored outside (within the permitted boundaries) is vital to prevent risk of fires
- Biogas from the landfill is collected, but this system was not connected to the biogas combustion system because of a low methane content. In this way emissions of methane are not avoided, although the combustion installation is built and ready to use. We smelled the biogas from the landfill.

3.2 Strength and weaknesses on the inspection procedure

3.2.1 List of strengths

- Checklists are used for records and site inspections
- Different checklist for different permits
- A thorough preparation before the inspection is carried outi.e. review of permit (highlight the important conditions) and review the 3 previous inspection reports to cross check for any non-compliances.

- Inspection reports are uploaded on the website

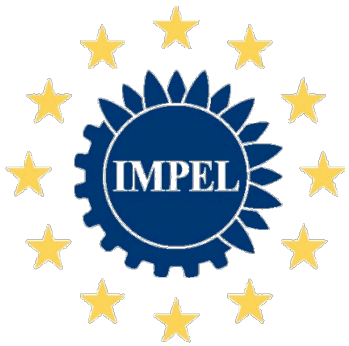
3.2.2 List of weaknesses

- Air pollution should be monitored by inspectors especially since it is included in the IPPC permit (biogas is not under the responsibility of the environmental inspector so far, as air pollution is a task which should be carried out under a different Ministry)
- Maybe joint inspectionsand closer communication between inspectors from both Ministriescan cover this problem
- Lack of technical support and training for sampling is required
- Risk Assessment Matrix should be applied: inspection frequency is decided by inspectors
- Need to prioritize non routine inspection (complaints)
- Inspectors should be given the opportunity to provide suggestions prior to the issuance of a permit .

MS practises to assess EoW status

Luca Paradisi

EPA of Veneto Region - Italy



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MiW/IMPEL Cyprus meeting Waste/End of waste
Nikosia - 10-13 September 2018

Content of this presentation

- Working methodology and used tools
- General overview of the situation
- Detailed description of the pratices
- Critical analysis of the different EoW status assessment systems
- Most relevant results to take in account in the MiW/IMPEL guidance

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Working methodology and used tools

- IMPEL survey on End of Waste
- Interviews/short survey EoW status assessment
- Results of Treviso meeting (ppt...)
- Official Web sites
- On line discussions about the topic
- Public documents (JRC, ADEME, OVAM, NL-MvIeW, FI-Syke, SE-KEMI)

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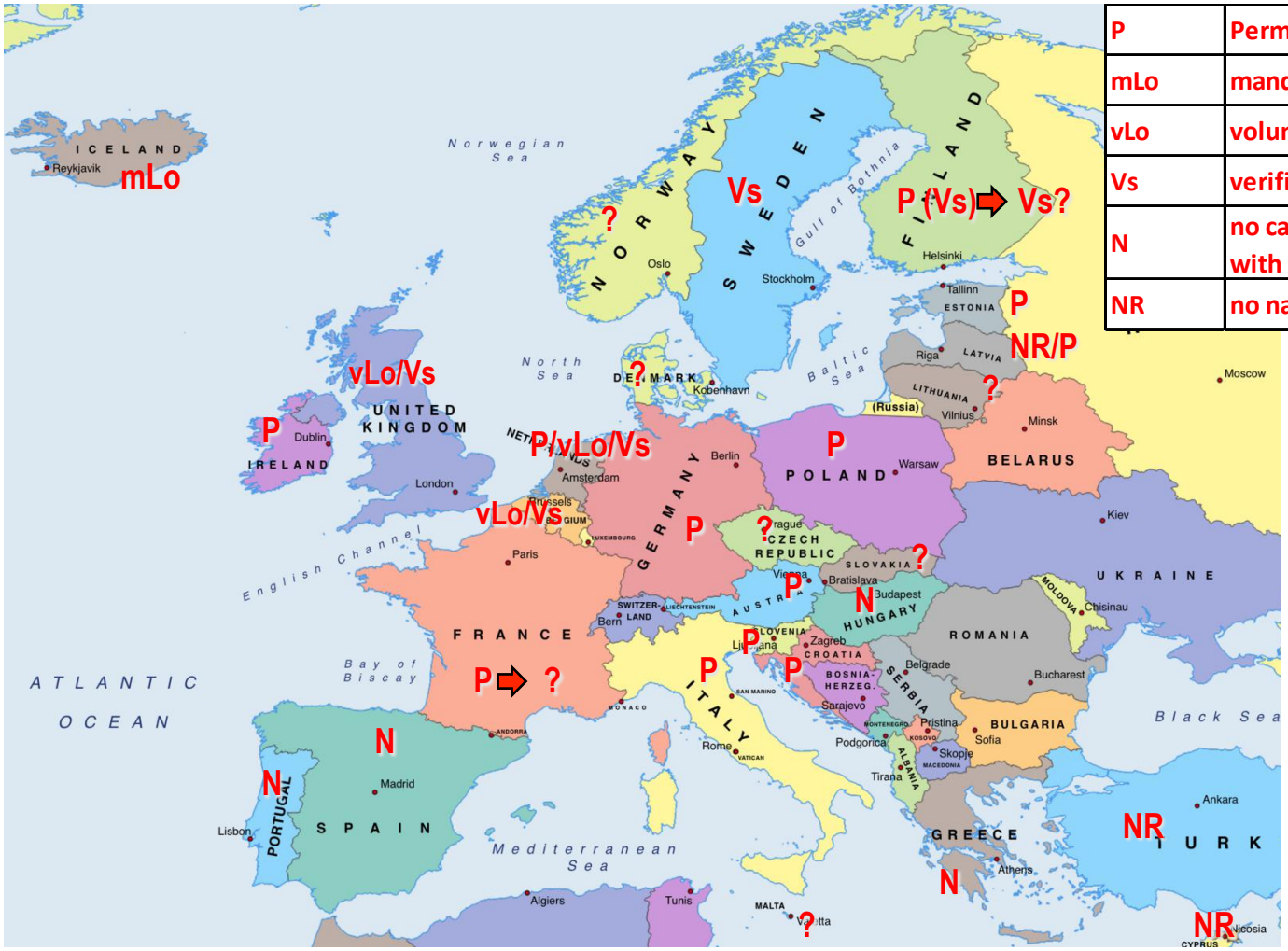
EoW status case by case assessment across Europe: an overview



P	Permit (prior decision)
mLo	mandatory legal opinion
vLo	voluntary legal opinion
Vs	verification system after self assessment
N	no case by case decision only compliance with EU/national decrees
NR	no national regulation about EoW

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EoW status case by case assessment across Europe: detailed analysis

NR = no national regulation about EoW

	Competent authority	Waste streams ruled by national regulation	Case by case decisions	Critical issues
TR	Ministry for Env. and Urbanization	circular on compost/ digestate	/	Evaluation of env./health impacts of EoW
CY	Ministery of Agr., Rural Dev. And Env.	/	/	Evaluation of env./health impacts of EoW
LT	State Env. Service	/	some expericences in permitting procedures using experiences of other MS	The procedure (data, information, proves) to get an EoW

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EoW status case by case assessment across Europe: detailed analysis

N = no case by case decision only compliance with EU/national decrees

	Competent authority	National/Local authority	Waste streams ruled by national regulations	Case by case decisions	Critical issues
P	Portughuese Environmental Agency	National	tyre-derived rubber, compost	/	ensuring equity, enshuring the 4 criteria are met
E	Energy Transition Ministry	National	recovered fuel from Marpol C waste, waste oil	/	too long procedure (mainly 2 years), low knowledege of procedures and
GR	Env. Ministry + Ministry for Finance and segretery of Industry	National	Sludge compost, low quality compost from unsorted MSW treatment for landfill use	/	great interest from the industry but unclear practical application and low trust in EoW path

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EoW status case by case assessment across Europe: detailed analysis

P = Permit (prior decision)

	Competent authority	National/Local authority	Waste streams ruled by national regulations	Case by case decisions	Critical issues
A	Federal Ministry for Sustainability and Tourism	National	RDF, C&D waste, compost, waste from food industry	/	input waste quality, the marketing of EoW
D	Ministry for Environment	National/Local (Laender)	Local circulars (old tyres recovery, bread to prepare feedingstuff)	Local authorities (Laender)	Conflict between authorities statements and the court decision
EW	Environmental Board (+Waste Commission)	National	Fuel additives derived from shale oil treatment, compost, digestate from biofuel production, sludge from wastewater treatment	(Exception) EoW regulated by permits	lack on standardised approach to the EoW criteria
F	Environmental Ministry (+Consultative Commission)	National	Shredded packaging wood, digestate (used oil, waste textiles, steel slag under study)	/	the system is chaniging (?),the case by case decision seems to be not implemented
FIN	Environmental permitting authority	Local (Region or municipalities)	Decree on crushed concrete under preparation	Defined in permits granted by regional/municipal authorities	unclear definition of criteria, differences among permits granted by different authorities, need of a guidance for the permit writers

IMPEL

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EoW status case by case assessment across Europe: detailed analysis

P = Permit (prior decision)

	Competent authority	National/Local authority	Waste streams ruled by national regulations	Case by case decisions	Critical issues
HR	Environmental Ministry (for IPPC and hazardous waste)/Local authorities	National/Local	Digestate, compost, waste oil, biofuel, RDF, C&D waste, recovered tyres	The general ordinance on EoW is currently changing	Lack of legilsation and procedures, long time requirinq permitting procedure (2 years)
I	Env. Ministry+Local authorities	National/Local	RDF, asphalt, 195 EoW derived from non hazardous waste (paper, plastic, inerts, metals…) and 29 from hazardous waste	Defined in permits granted by regional/provincial authorities	To have a uniform criteria especially for case by case permits, the definition of environmental and technical standards
PL	Environmental Protection Agency	Local (Regional)	No national decrees	Defined in permits granted by regional authorities	lack of uniform criteria, how to assess if the waste has ceased to be such, REACH compliance
SLO	Environmental Protection Protection	National/Local	compost, digestate	Defined in permits granted by regional authorities	unclear definition of criteria, lack of "Env. Respnsability" of the operator, how to monitor the quality of the end product

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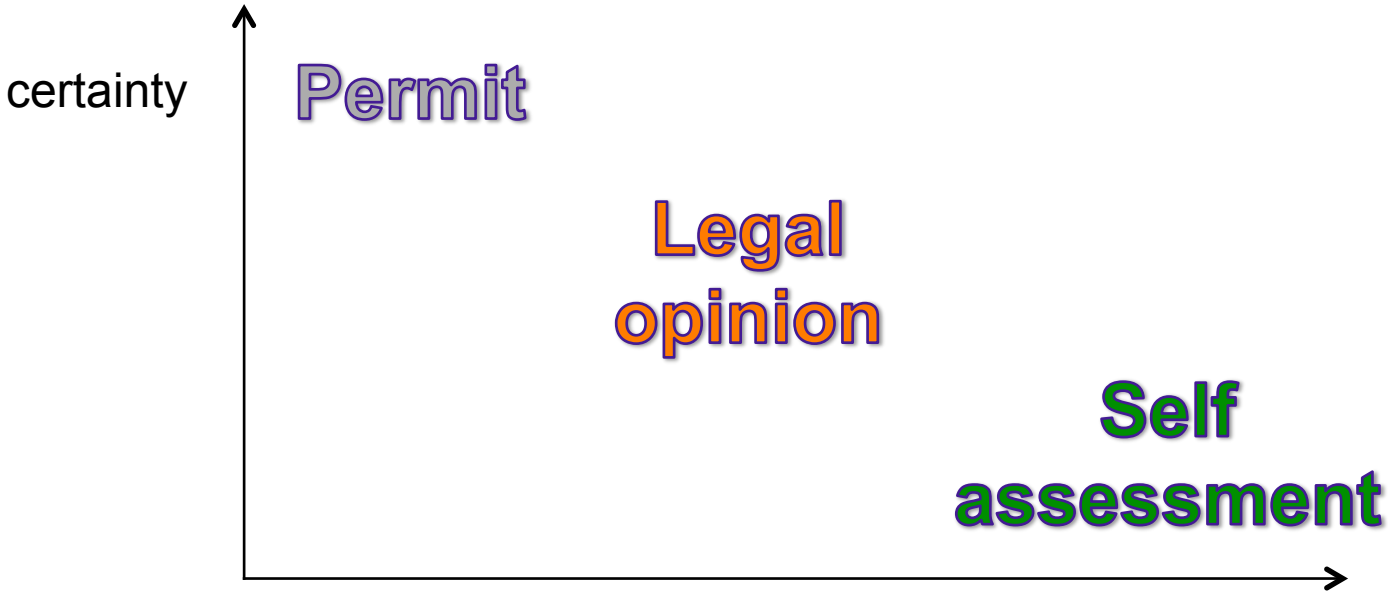
EoW status case by case assessment across Europe: detailed analysis

More free systems (Legal opinions/self assessment)

	Competent authority	System group	National/Local authority	Waste streams ruled by national regulations	Case by case decisions	Critical issues
B	OVAM	Permits/legal opinion	National	fertilisers, soil, building material, artifical sealing coats	Yes, using legal voluntary legal opinion by OVAM service)	The evaluation of the short term and long teerm impact of the material
IS	Environmental agency	Mandatory legal opinion	National	waste oil, slaughterhouses products and compost	/	input waste quality, the marketing of EoW
NL	Ministry of Infrastrucutre and water management+local authorities	Mixed system (permits/Vs/self assessment/Legal opinion)	National/local	Recycling aggregates	/	Doubt about the impact on the environment,
SE	Local Authorities (Regional or municipal board)	**Only self assessment +VS** (national principle for Environment compliance assessment)	Local (Regional or municipal)	/	the operator make a self assessment	Responsability of the operator and the knowledge of the product legislation
UK	Environmental Protection Agency	QP for standardised EoW, legal opinion or self assessment	National(local (for Wales, N.Ireland)	Quality protocols (aggregates, digestate, compost, gypsum, biodiesel, poultry litter ash, fuel oil, tyre derived rubber)	Yes, using legal voluntary legal opinion by DoW panel or self assessment (2016/2018)	The need of certainty by the operators (they prefer to have a legal opinion), the Dow works only in England

Critical analysis of the different EoW status assessment systems



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Critical analysis of the different EoW status assessment systems

What is the best performing system?

No one!
Each system has the own gaps to be solved

The main common need of operators and authorities is:
To have certainties about EoW

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Most relevant results/needs to take in account in the MiW/IMPEL guidance

1. Define procedures/practical tools to fulfil the 4 criteria (IsitWaste tool/ French procedure): more detailed description
    a. List of document for the application
    b. Content of the permit/Legal opinion
    c. Conformity declaration for the EoW
    d. Verification check list

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Most relevant results/needs to take in account in the MiW/IMPEL guidance

2. Give practical guidance for REACH registration of EoW (SE – KEMI)
3. Agreement among different countries (EoW should be accept in the destination country) … **EoW Database**

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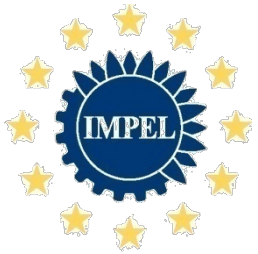
Thank you
for the attention!



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Inspections on waste and End of Waste in the Flemish region

Liesbet Rommens
Environmental inspector
At the Enforcement Devision

DEPARTEMENT
OMGEVING

Vlaanderen
is omgeving

Content

- 1. Belgium – 3 regions
- 2. Environmental Inspection Section
- 3. Organisation and planning of inspections
- 4. Sampling waste and End of waste
- 5. Example of an inspection campaign

Vlaanderen
is omgeving

1. The Flemish Region within Belgium

- Belgium: a federal state with 3 Regions

Vlaanderen
is omgeving

Three regions of Belgium

FLEMISH REGION	BRUSSELSCAPITAL REGION	WALLOON REGION
Northern part	Central part	Southern part

Environment is a regional responsibility.

Each region has its own legislation and enforcement.

This presentation concerns the situation in the Flanders Region.

Vlaanderen
is omgeving

2. Environmental Inspection Section

- **Environmental Inspection Section is integrated in the 'Enforcement Division' of the new 'Department Environment':**

- **Fusion of**
  - → Environmental Inspection
  - → Urbanisation inspection
  - → AMMC (Department of Environmental enforcement, Environmental damage en Crisis management)

- **Environmental Inspection Section (EIS): enforcement tasks:**
  - → Inspects and takes measures at 'class 1'- establishments - this includes all establishments under the IED – and Seveso III - Directives + many others
  - → **Don't**: give permits or write legislation

Vlaanderen
is omgeving

3. Organisation of inspections

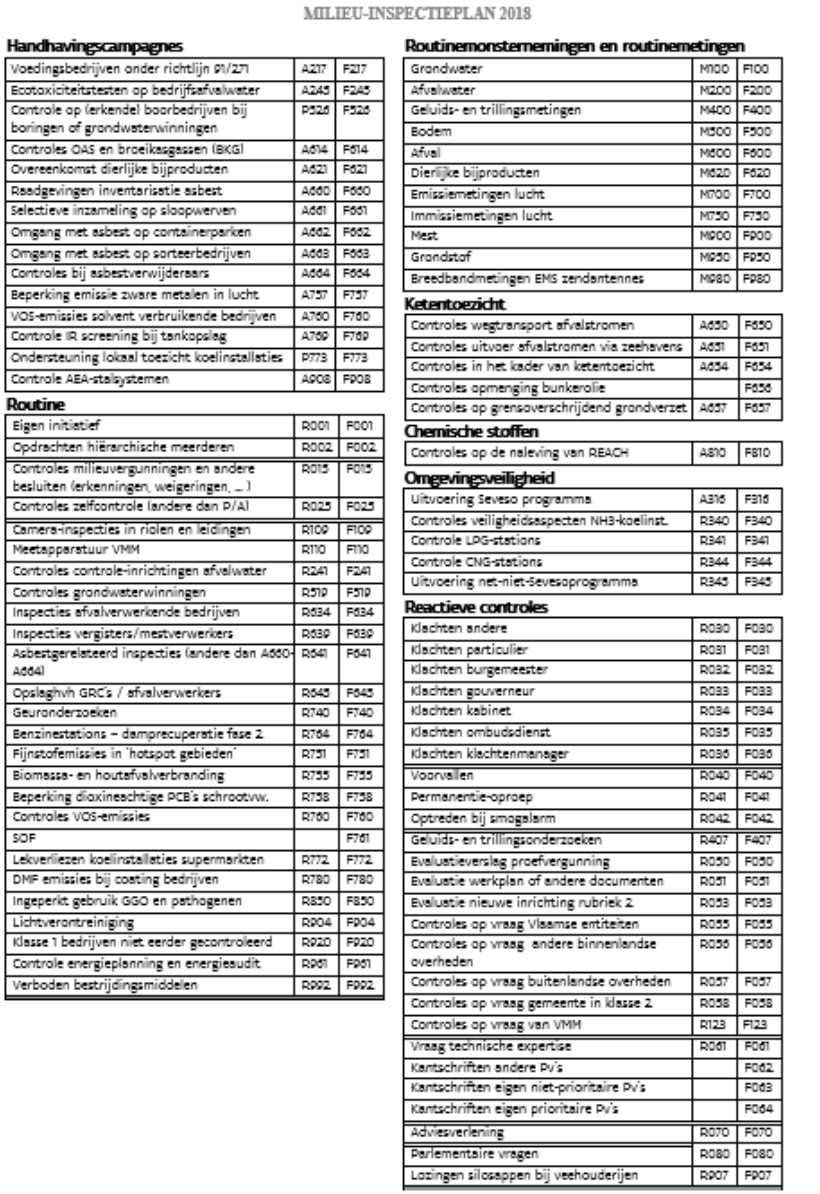
- **Inspection Program**
  - → Class 1 and IPPC-installations
  - → Input from own experience
  - → Input from other authorities like for expample Public Waste Agency of Flanders

- **Inspection System for IPPC- installations**
  - → Planningsystem for IPPC-installations

Priority and risk based

Vlaanderen
is omgeving

3. Organisation of Inspections



MILIEU-INSPECTIEPLAN 2018

Handhavingscampagnes

Voedingsbedrijven onder richtlijn 91/271	A217	F217
Ecotoxiciteitstesten op bedrijfsafvalwater	A245	F245
Controle op (erkende) boorbedrijven bij boringen of grondwaterwinningen	P526	F526
Controles OAS en broeikasgassen (BKG)	A614	F614
Overeenkomst dierlijke bijproducten	A621	F621
Raadgevingen inventarisatie asbest	A660	F660
Selectieve inzameling op sloopwerven	A661	F661
Omgang met asbest op containerparken	A662	F662
Omgang met asbest op sorteerbedrijven	A663	F663
Controles bij asbestverwijderaars	A664	F664
Beperking emissie zware metalen in lucht	A757	F757
VOS-emissies solvent verbruikende bedrijven	A760	F760
Controle IR screening bij tankopslag	A769	F769
Ondersteuning lokaal toezicht koelinstallaties	P773	F773
Controle AEA-stalsystemen	A908	F908

Routine

Eigen initiatief	R001	F001
Opdrachten hiërarchische meerderen	R002	F002
Controles milieuvergunningen en andere besluiten (erkenningen, weigeringen, ...)	R015	F015
Controles zelfcontrole (andere dan P/A)	R025	F025
Camera-inspecties in riolen en leidingen	R109	F109
Meetapparatuur VMM	R110	F110
Controles controle-inrichtingen afvalwater	R241	F241
Controles grondwaterwinningen	R519	F519
Inspecties afvalverwerkende bedrijven	R634	F634
Inspecties vergisters/mestverwerkers	R639	F639
Asbestgerelateerd inspecties (andere dan A660-A664)	R641	F641
Opslag/vh GRC's / afvalverwerkers	R645	F645
Geuronderzoeken	R740	F740
Benzinestations – damprecuperatie fase 2	R764	F764
Fijnstofemissies in 'hotspot gebieden'	R731	F731
Biomassa- en houtafvalverbranding	R735	F735
Beperking dioxineachtige PCB's schrootvw.	R738	F738
Controles VOS-emissies	R760	F760
SOF		F761
Lekverliezen koelinstallaties supermarkten	R772	F772
DMF emissies bij coating bedrijven	R780	F780
Ingeperkt gebruik GGO en pathogenen	R850	F850
Lichtverontreiniging	R904	F904
Klasse 1 bedrijven niet eerder gecontroleerd	R920	F920
Controle energieplanning en energieaudit	R961	F961
Verboden bestrijdingsmiddelen	R992	F992

Routinemonsternemingen en routinemetingen

Grondwater	M100	F100
Afvalwater	M200	F200
Geluids- en trillingsmetingen	M400	F400
Bodem	M500	F500
Afval	M600	F600
Dierlijke bijproducten	M620	F620
Emissiemetingen lucht	M700	F700
Immissiemetingen lucht	M750	F750
Mest	M900	F900
Grondstof	M950	F950
Breedbandmetingen EMS zendantennes	M980	F980

Ketentoezicht

Controles wegtransport afvalstromen	A650	F650
Controles uitvoer afvalstromen via zeehavens	A651	F651
Controles in het kader van ketentoezicht	A654	F654
Controles opmenging bunkerolie		F656
Controles op grensoverschrijdend grondverzet	A657	F657

Chemische stoffen

Controles op de naleving van REACH	A810	F810

Omgevingsveiligheid

Uitvoering Seveso programma	A316	F316
Controles veiligheidsaspecten NH3-koelinst.	R340	F340
Controle LPG-stations	R341	F341
Controle CNG-stations	R344	F344
Uitvoering net-niet-Sevesoprogramma	R345	F345

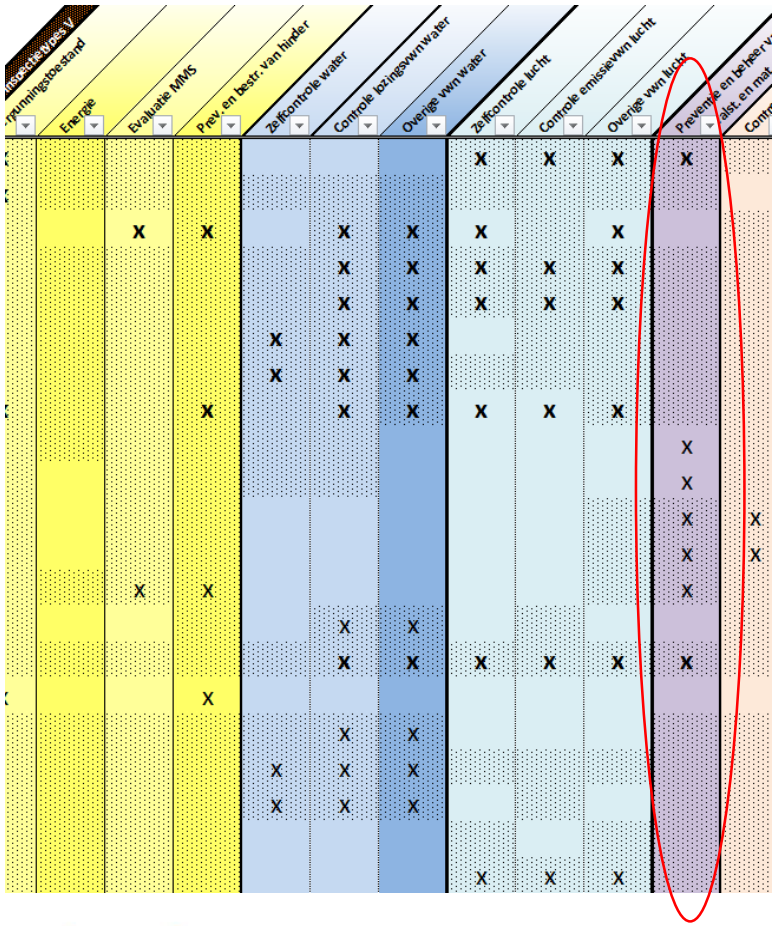
Reactieve controles

Klachten andere	R030	F030
Klachten particulier	R031	F031
Klachten burgemeester	R032	F032
Klachten gouverneur	R033	F033
Klachten kabinet	R034	F034
Klachten ombudsdienst	R035	F035
Klachten klachtenmanager	R036	F036
Voorvallen	R040	F040
Permanentie-oproep	R041	F041
Optreden bij smogalarm	R042	F042
Geluids- en trillingsonderzoeken	R407	F407
Evaluatieverslag proefvergunning	R050	F050
Evaluatie werkplan of andere documenten	R051	F051
Evaluatie nieuwe inrichting rubriek 2	R053	F053
Controles op vraag Vlaamse entiteiten	R055	F055
Controles op vraag andere binnenlandse overheden	R056	F056
Controles op vraag buitenlandse overheden	R057	F057
Controles op vraag gemeente in klasse 2	R058	F058
Controles op vraag van VMM	R123	F123
Vraag technische expertise	R061	F061
Kantschriften andere Pv's		F062
Kantschriften eigen niet-prioritaire Pv's		F063
Kantschriften eigen prioritaire Pv's		F064
Adviesverlening	R070	F070
Parlementaire vragen	R080	F080
Lozingen silosappen bij veehouderijen	R907	F907

- **Anual Inspection Program**

  - → Enforcement Campaigns
  - → Routine
  - → Sampling
  - → Chain inspection (on waste traffic)
  - → REACH
  - → SEVESO
  - → Reactive inspections

3. Organisation of Inspections



- **Inspection System on IPPC- installations**

  - → General
  - → Waste water
  - → Airpolution
  - → Prevention of waste and waste management
  - → Soil and groundwater

  All topics should be coverd in three years

Vlaanderen
is omgeving

4. Samples of Waste

- **Waste:**
  - → On landfills
  - → At waste producers

→ **Check the acceptance criteria of the landfill**

→ Wood waste
in case of incineration

Vlaanderen
is omgeving

Samples of End of Waste

- **When no raw material declaration is needed the intended raw materials may only be regarded as raw material**
  - → when the intended raw material is used for a particular area of application (fertilizer, soil, building material, artificial sealing coats, ..)

  And
  - → when the intended raw material meet specific criteria set out in our legislation

- **There are 4 big groups that don't need a raw material declaration**
  - → Soil improvers (from for example green waste, biodigested waste)
  - → Building materials (from for example destruction waste)
  - → Soil (from ground works)
  - → Waste used as artificial sealing coat utilizing water glass

Samples of End of Waste

- **We check if the application area is correct**

- **We check if the compostion meets the specific compositions criteria as listed in Flemish legislation**

  → Vlarema for waste and materials
  → Vlarebo for soil
  → Other directives for example Animal Byproducts)
  → Composition criteria for wood used for incineration
  → Criteria from the permits or the raw material declaration …

- **Composition criteria can be**
  → Chemical composition criteria
  → Fysical criteria
  → Bacterial criteria
  → Presence or absence of asbestos

Vlaanderen
is omgeving

Samples of end of waste in practice

- We take our samples ourselves or with technical support of a recognized and certified lab
- Depending on the type of waste, we follow a certain procedure, writen out in a quality manual of sampling which is composed by VITO (Flemish institute for technological research and development) on behalf of the EIS
- We all have had a technical training on how to take samples in according to the quality manual
  - → Of waste
  - → Of waste water
- Audits are organised to check that we follow and know the procedures

Vlaanderen
is omgeving

Samples of End of Waste

- **The analysis of the samples is performed by a recognised laboratory**

- **Samples are taken in double and both are sealed:**
  - → One for the company
  - → One for us → to the laboratory in at least 24h

- **Documents to fill in…**
  - → A report of sampling and measurements:
    - × Where, what, when, unique code
  - → Analysis bulletin
    - × Wich parameters
  - → Technical report of the sampling
    - × Wich steps we followed during the sampling

405, 406, 407 en 408 4.2.1800116

Vlaanderen
is omgeving

Afdeling Handhaving
Omgevingsinspectie Limburg
Koningin Astridlaan 50, bus 5
3500 HASSELT
Tel. 011 74 26 00
milieu-inspectie.lim@lne.vlaanderen.be

VERSLAG van MONSTERNEMING en METING in het kader van de technische controle op de eigenschappen en de samenstelling van AFVALSTOFFEN[1]

Op 19. / 06. /2018 heb ik, Liesbet Rommens, toezichthouder bij de afdeling Handhaving mij begeven naar
RENO NV, Koerselsedijk te 3530 Houthalen-Helchteren (178)
om een technische controle uit te voeren op de eigenschappen en de samenstelling van afvalstoffen overeenkomstig artikel 16.3.14 van het decreet van 5 april 1995 houdende algemene bepalingen inzake milieubeleid.
De heer / mevrouw Ruben Vermeersch
toezichthouder bij de afdeling Handhaving/
heeft de verrichtingen als getuige bijgewoond.

I. MONSTERNEMING

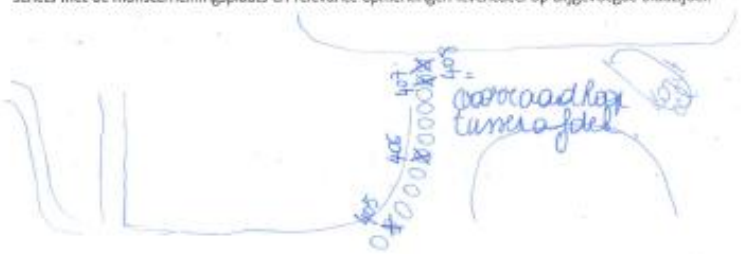
A. Ik heb volgende monsters laten nemen door Laboratorium ECCA NV:

Uur	Monsternummer (cfr. Analyseopdracht)	Aard monster[a]	Plaats monstername[b]	Aggregatietoestand[c]
9u15	L/A/2018/M600/405	baggerspecie	3811 11060 Suex	vast
9u30	L/A/2018/M600/406	filterkoek	6811 9992	vast
9u45	L/A/2018/M600/407	shredder	3781 3978 Stelinet vast	
10u00	L/A/2018/M600/408	shredder turbo afdek		

(a) : afvalstof / medium waarin een afvalstof vermoed wordt/ grondstof / tussenproduct / eindproduct / planten / andere (specifieer)
(b) : met eventueel een verwijzing naar de schets van de monsternameplaats onder punt C
(c) : vast / pasteus / vloeibaar / gas

B. Deze monsterneming werd uitgevoerd overeenkomstig de artikelen 46 tot en met 53 van het besluit van de Vlaamse regering van 12 december 2008 tot uitvoering van titel XVI van het decreet van 5 april 1995.
Elk deel van elk monster werd verzameld in de gepaste recipiënten, zo nodig voorzien van conserveringsmiddelen, noodzakelijk voor een goede analyse van het monster.

C. Schets met de monsternemingsplaats en relevante opmerkingen (eventueel op bijgevoegde bladzijde).



[1] Art. 8 van het besluit van de Vlaamse Regering van 12 december 2008 tot uitvoering van titel XVI van het decreet van 5 april 1995 houdende algemene bepalingen inzake het milieubeleid.

II. METINGEN OF BEPROEVINGEN TER PLAATSE

A. Ik heb de volgende meting(en) / beproeving(en) : .....
zelf uitgevoerd / laten uitvoeren door .....

Uur	Beschrijving bemeten of beproefde partij[a]	Plaats van monstername[b]	Aggregatietoestand[c]

(a) : monsternr. indien monster werd genomen / afvalstof / medium waarin een afvalstof vermoed wordt / grondstof / tussenproduct / eindproduct / (b) : met eventueel een verwijzing naar de schets van de monsternameplaats onder punt C (planten / andere (specifieer)
(c) : vast / pasteus / vloeibaar / gas

B. Deze meting(en) / beproeving(en) werd(en) uitgevoerd met behulp van (een) toestel(len) / materieel
- van de toezichthouders bij de afdeling Milieu-inspectie
- .....van de (rechts)persoon vermeld onder II.A van dit verslag:
- van de exploitant van het bedrijf of de inrichting .....
identificatie meettoestel(len) / materieel (aard, merk, type, identificatienummer, ...): .....
.....
.....
Ik heb volgende resultaten vastgesteld:
.....
.....

C. Schets met de plaats van meting en relevante opmerkingen (eventueel op bijgevoegde bladzijde).

III. COMMUNICATIE

Ik heb op 19/6/2018 de heer / mevrouw Robert Vranen
zijnde de vertegenwoordiger van de exploitant / de persoon tegen wie het resultaat van de monstername of meting kan worden ingeroepen / de persoon van wie de activiteit aanleiding geeft tot de monsterneming:

- in kennis gesteld van de monstername en metingen;
- een kopie van dit verslag en bijlagen overhandigd;
- ~~meegedeeld dat ik een kopie van dit verslag met bijlagen zal toezenden;~~
- laten weten dat het deel van de monsters dat bestemd is voor de eventuele tegenanalyse gedurende 10 werkdagen van 9u tot 17u voor hen ter beschikking wordt gehouden op volgend adres: Laboratorium ECCA NV, Ambachtsweg 3, 9820 Merelbeke (tel:09/252 64 44) en dat het binnen de 24u na afhalen aan een erkend laboratorium moet worden bezorgd[2];
- het deel van de monsters dat bestemd is voor de eventuele tegenanalyse ter plaatse overhandigd en meegedeeld dat het monster binnen de 24 u aan een erkend laboratorium moet worden bezorgd[2];
- meegedeeld dat de RVS monsterbussen, opvulblokken, isolatieplaatjes en afsluitkapjes – gebruikt voor de bemonstering in functie van de analyse van vluchtige componenten – moeten worden teruggezorgd aan de afdeling Milieu-inspectie.

Handtekening voor akkoord:	

IV. Tot staving waarvan ik onderhavig verslag heb opgesteld om naar recht te dienen

Handtekening van de toezichthouder,

Handtekening van de getuige,

[2] Voor parameters waarvan de houdbaarheid volgens het compendium voor analyse van water " WAC/I/A/010; conservering en behandeling van watermonsters" is overschreden, kan geen rechtsgeldige tegenanalyse meer worden uitgevoerd.

ANALYSEOPDRACHT AFVAL, BODEM en GRONDWATER

Stalen: 1
E-16-036468
Week 40
Ontvangst 03/10/16

Afdeling Milieu-inspectie

Laboratorium: .....

Monster : L/A / 2016 / M600 / 414

Datum en uur van de monsterneming :
3 / 10 / 16 om 9 u 15

Monsterspecificatie (meerdere vakjes mogelijk):

- ☐ Afval/grondstof → meststof/BVM
- ☐ Afval/grondstof → bouwstof
- ☐ Afval → verbranding
- ☒ Afval → stortplaats
- ☐ Afval → bestemming onbekend
- ☐ Bagger/ruimingsspecie → bodem
- ☐ Verwerkt dierlijk afval
- ☐ Uitgegraven bodem
- ☐ Grondwater
- ☐ Ander .....

Aggregatietoestand:
☒ Vast ☐ Vloeibaar ☐ Pasteus

Bedrijfssector : stortplaats
Dossiernr : 178
☒ monsterneemingsformulier ingevuld

Ik deponeer in het laboratoriumlokaal :
☒ het monster bestemd voor analyse
☐ het monster bestemd voor tegenanalyse
Op 3 / 10 / 16 om 12 u 00

De toezichthouder:
(handtekening)

☒ monster voor analyse meegenomen
☒ monsterneemingsformulier meegenomen
☐ monster voor tegenanalyse meegenomen

☒ alle monsters zijn verzegeld
Op 3 / 10 / 16 om 9 u 15

Naam vertegenwoordiger van het laboratorium:
Ruben Vanderlinden
(handtekening)

Instructies voor de laborant

- ☐ Uitzonderlijke spoedanalyse rapportering binnen ..... dagen
- ☐ Spoedanalyse (onmiddellijk starten, rapportering binnen 5 dagen)
- ☐ Neem, vóór u met de analyse begint, contact op met de toezichthouder die het monster nam op tel. nr. .....

Te analyseren parameterpakketten (bijlage 4 besluit LNE/MW/2010/AFVAL/ter)

- ☐ Aanv.crit. cat.1 stortplaatsen - **niet**-monolitisch - incl. baggerspecie
- ☐ (Aanv.crit. cat.1 stortplaatsen monolitisch afval)
- ☒ Aanv.crit. cat.2 stortplaatsen rubr. 2.3.6 b) 3 - incl. baggerspecie
- ☐ Aanv.crit. andere cat.2 - **niet**-monolitisch - incl. baggerspecie
- ☐ (Aanv.crit. andere cat.2 - monolitisch)
- ☐ Aanvaardingscriteria voor categorie 3 stortplaatsen (geen VOS)
- ☐ Vlarebo-parameters bodem (geen VOS)
- ☐ Beperkte Vlarebo-parameters bodem (geen VOS)
- ☐ Vlarebo-parameters grondwater
- ☐ Beperkte Vlarebo-parameters grondwater
- ☐ Vlarema-parameters meststof / bodemverbeterend middel (geen VOS)
- ☐ Vlarema-parameters niet-vormgegeven bouwstof (geen VOS)
- ☐ Vlarema-parameters bodem
- ☐ Eindproducten verwerkers dierlijk afval
- ☐ Verbrandingsparameters houtafval
- ☐ Vlarem-parameters grondwater
- ☐ Septisch materiaal
- ☐ Vluchtige organische stoffen (VOS) – **minimaal gecoerd monster!**

Te gebruiken methode: ☐ Kolomproef stortplaatsen

Te analyseren parameters:

- ☐ Fluoride
- ☐ Chloride
- ☐ Sulfaat
- ☐ Cyanide (totaal)
- ☐ Totaal Antimoon
- ☐ Totaal Arseen
- ☐ Totaal Barium
- ☐ Totaal Cadmium
- ☐ Totaal Chroom
- ☐ Chroom VI
- ☐ Totaal Koper
- ☐ Totaal Kwik
- ☐ Totaal Lood
- ☐ Totaal Molybdeen
- ☐ Totaal Nikkel
- ☐ Totaal Seleen
- ☐ Totaal Zink
- ☐ Zware metalen (Vlarebo)
- ☐ Screening metalen
- ☐ Asbestbepaling (puingran. – C2)
- ☐ Vrij asbest (stortplaats – C1)
- ☐ Niet-steenachtige materialen (monster min. 20 kg)
- ☐ Bodemvreemde materialen (monster min. 10 kg)
- ☐ Organisch materiaal
- ☐ Kleigehalte
- ☐ pH
- ☐ Gloeiverlies (LOI)
- ☐ Totaal org. koolstof (TOC)
- ☐ Opgeloste org. stof (DOC)
- ☐ Totaal opgel. vaste stof (TDS)
- ☐ Zuurbindend vermogen (ZBV)
- ☐ EOX
- ☐ Org. solventen (aspecifiek)
- ☐ Vluchtige Cl-solventen
- ☐ Matig-vluchtige Cl-solventen
- ☐ Chloorfenolen
- ☐ Organochloorpesticiden
- ☐ MAK
- ☐ PAK
- ☒ PCB
- ☐ Minerale olie GC/FID (< C40)
- ☐ (Minerale olie FT/IR) (< C40)
- ☐ GC/MS screening
- ☐ Identificatie indien GC/MS screening positief
- ☐ .....
- ☐ .....
- ☐ .....
- ☐ .....
- ☐ .....
- ☐ .....
- ☐ .....

Opmerkingen:

MI-FOR-A-003

DEPARTEMENT LEEFMILIEU NATUUR & ENERGIE	**AFVALBEMONSTERING: MONSTERNEMINGSFORMULIER**	Doc. nr. **MI-FOR-A-002** Versie: 05

A. VASTE STOFFEN

Monsternummer: L/A/2016/ H600 414 Datum monsterneming: 3/10/2016

Monsternemer (TH): Liesbet Rommens Ondersteuning labo ☒ Ja ○ Nee

Identificatie stof: shredder

Monsterneming

GPS-coördinaten *(facultatief)*: X: ..... Y: .....

Schatting dimensies partij:
Grondoppervlak: 5 m x 3 m
Hoogte: 1 m
Schatting volume: ☒ < 20 m³ ○ 20-500 m³ ○ 500-1000 m³

Gemengde partij? ○ Ja ○ Nee
Zo ja, geef op het VVM een schatting van de volumeverhouding van de verschillende partijen

Schatting maximale korrelgrootte D_{95}: 40 mm

Monsternemingstechniek:
○ Voorraadhoop met wiellader
Zo ja, aantal laadschoppen ○ 4 ○ 6 ○ 8 ○ Ander: .....
aantal grepen ○ 16 ○ 24 ○ 32 ○ Ander: .....
○ Voorraadhoop via doorboren
Zo ja, boringen ○ Horizontaal ○ Verticaal ○ Horizontaal + Verticaal
○ Container via doorboren (verticaal)
Zo ja, bovenoppervlak: ○ 10 m² ○ Ander: .....
aantal boringen (1/5m²) ○ 2 ○ Ander: .....
☒ Voorraadhoop via manueel grepen nemen
Zo ja, aantal grepen ○ 10 ○ 25 ○ 35 ☒ Ander: 20
○ Andere, specifieer: ○ CMA/1/A.15 ○ ander: .....
○ Ogenblikkelijk monster vast *(motiveer keuze bij opmerkingen/afwijkingen)*
Zo ja, situatie ○ Materiaalstroom ○ Silo ○ Container ○ Ander: .....
○ Puntmonster *(motiveer keuze bij opmerkingen/afwijkingen)*

Bemonsteringsapparatuur:
○ Gutsboor ○ Bemonsteringsschep met steel (opening 12 cm)
○ Edelmanboor ○ Schop
○ Steekboor met RVS monsterbus ○ Kleine steekboor met boorring 28 mm
○ Steriele apparatuur ○ Handschep 250 ml
○ Handschep 500 ml ○ Handschep 800 ml
○ Handschep 2500 ml ☒ Andere, specifieer: handschep 1L

Reduceren: ☒ Niet ○ Kwarteren ○ Spleetverdelen
→ Aantal reductiestappen: ○ 1 ○ 2 ○ Ander: .....

Verpakking

○ Polypropyleen emmer met deksel ○ 3 liter ○ 5 liter ☒ 10 liter (met plastic zak)
○ RVS monsterbus 35 mm (225 ml) ○ RVS boorring 28 mm (16 ml)
☒ Glazen monsterrecipiënt (1 liter) 0,9 L ○ Andere *(volume vermelden)*: .....

Afwijkingen / opmerkingen

Indien MI-PRO-A-005 (asbest): M_g (grove fractie + verzamelmonster – tarra emmers) = ...
M_f (fijne fractie – tarra emmers) = ...
.....
.....

Inspection report = internal document

Vlaamse overheid
Departement Omgeving
Afdeling Handhaving
Omgevingsinspectie Limburg

Controleverslag

L/2018/0908

178	Remo nv	Koerselsedijk 3530 Houthalen-Helchteren	

datum	19 jun 2018	TH 1	Liesbet Rommens
beginuur	09:00	TH 2	
einduur	10:50	TH 3	
type	dag	externe begeleider	ruben vermeersch
code MIP	M600	monstername meting	L/A/2018/M600/
aard	afval	nummer PV	

Voorgeschiedenis

Stortingstaalnames afval

Vaststellingen

De vaststellingen staan beschreven in het verslag van monsterneming en meting in het kader van de technische controle op de eigenschappen en de samenstelling van afvalstoffen met volgende nummers
L/A/2018/M600/405:
Baggerspecie Suez

L/A/2018/M600/406
Filterkoek

L/A/2018/M600/407
Fijn shreddermateriaal

L/A/2018/M600/408
Shreddermateriaal gebruikt als afdekmateriaal

Er wordt, in afwachting van de resultaten van de staalnames een nieuwe voorraadhoop aangelegd voor shreddermateriaal dat kan gebruikt worden als tussenafdek.

Tijdens mijn aanwezigheid op de stortplaats neem ik het begin met vlagen soms een chemische geur waar. De geur is niet permanent aanwezig. De geur van shredderafval is op de stortplaats aanwezig als achtergrondgeur.

Het vijn wordt ter plaatse gekopieerd. De analysebulletins en de monsternemingsformulieren worden meegegeven aan het labo.

Besluit

Analyseresultaten afwachten.

Opgemaakt op 22 juni 2018.

Voor gezien.

Liesbet Rommens
Milieu-inspecteur

Geert Ruysseveldt
Handhavingsmanager

Vlaanderen
is omgeving

Parameter	Resultaat	Eenheid	Doel Minimum	Norm	Beoordeling
EOX met koude extractie	<10	mg/kg DS			
Arseen (As)	<0.010	mg/l		1.0	Conform
Cadmium (Cd)	0.0017	mg/l		0.50	Conform
Koper (Cu)	0.079	mg/l		10	Conform
Kwik (Hg)	< 0.00015	mg/l		0.10	Conform
Lood (Pb)	<0.010	mg/l		2.0	Conform
Nikkel (Ni)	0.020	mg/l		2.0	Conform
Zink (Zn)	0.24	mg/l		10	Conform
Barium (Ba)	0.037	mg/l		30	Conform
Molybdeen (Mo)	0.066	mg/l		3.0	Conform
Antimoon (Sb)	0.0076	mg/l		0.50	Conform
Seleen (Se)	<0.0050	mg/l		0.70	Conform
pH	8.2		4.0	13.0	Conform
Temperatuur (pH meting)	20.0	°C			
LOI (verlies uitgloeiing)	27.2	% DS		10.0	Niet Conform
Nitriet (NO_2^-)	3.9	mg/l		30	Conform
Totaal anorganisch gebonden fluoride	1.8	mg/l		50	Conform
Ammonium (NH_4^+)	4.5	mg/l		1000	Conform
Chroom 6+	< 0.050	mg/l		0.50	Conform
Totaal cyanide	< 0.020	mg/l		1.0	Conform
Dichtheid van de Proctor	niet uitvoerbaar	kg/l			
Droge stof	70.2	%			
Fenolindex	0.039	mg/l		100	Conform
Water oplosbaar gedeelte	1.9	%		10	Conform
Afschuifsparming	niet uitvoerbaar	kN/m2	10		Conform
Ammonium (NH_4^+) (g/l)	0.0045	g/l		1.0	Conform
Totaal organische koolstof	14	% DS			

Examples of sampling

- Soil improver: compostingplant of green waste

Destruction Waste: (asbestos analysis)

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Soil: in quarries or on plants for temporary storage of soil

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is omgeving

5. Example of an inspection campaign

- **Enforcement Campaigns related to Waste and end of waste**
  - → 2018 = focus on asbestos
  - → Other years the focus can be different and the campaign of this year can become…

Animal Byproducts
Advices on asbestos inventarisation
Selective collection of waste streams on demolition plants
Asbestos in rural container parks
Asbestos in waste treatment installations
Inspections on asbestos removers

- **… Routine**

- **Samples of Waste and End of Waste**
  - → Soil, raw materials,
  - → compost, sludge, digestate waste from biogass installations,
  - → recycled building materials,
  - → Waste on landfills,

5. Inspection Campaign

- **Advices on asbestos inventary**
  - → Awarenes at installatation (a lot of old buildings)
  - → Removal plan
  - → Priority to unbound asbestos
  - → Awarenes for safety measures

Vlaanderen
is omgeving

5. Asbestos in demolished plants

- → Is there an inventary?
- → Is all hazardeous waste removed before demolition?
- → Is it properly removed
- → Who did the removal? Safety measures?
- → Where does the (other) waste go to?

Vlaanderen
is omgeving

5. Asbestos in raw materials intended to use as buildingmaterials in Waste treatment installations

- → Waste of demolished buildings → waste treatment installation
- → What is written in the permit? → what kind of waste are they allowed to treat?
- → Is there a register? Is this in accordance with the permit?
- → Is the product of the waste treatment proces certified? (in case of building materials: COPRO or Certipro)
- → Samples with asbestos analysis

Vlaanderen
is omgeving

5. asbestos on landfills

- **Permitted? Is it stabilized?**
- **Visual inspection at the entrance?**
- **Inspection of the transport documents?**
- **Registration?**
- **Is the asbestos properly packed when it arrives on the landfill?**
- **On the landfill itself:**
  - → Seperate area?
  - → Procedure to deposit the asbestoswaste, (open doors in safe area…)
  - → Measurements of asbestos on and around the landfill
  - → Spray with water during activities in the ‘asbestos area’
  - → Covered

Thank you for your attention

Contact:

DEPARTEMENT OMGEVING
Afdeling Handhaving
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DEPARTEMENT
OMGEVING

MAKE IT WORK

MiW – IMPEL Guidance – Chapter 2

Ilia Neudecker, Foxgloves Consultancy

Nicosia, Cyprus, 12 September, 2018

Introduction Chapter 2

- Relevant legislation:
  WFD, WSR, IED, REACH

- Key provisions, challenges (e.g. permits for innovations, end-of-waste decisions, balancing env. risks and benefits)

- Critical points for regulators

- Opportunities & challenges, suggested solutions, best practices

4 business situations

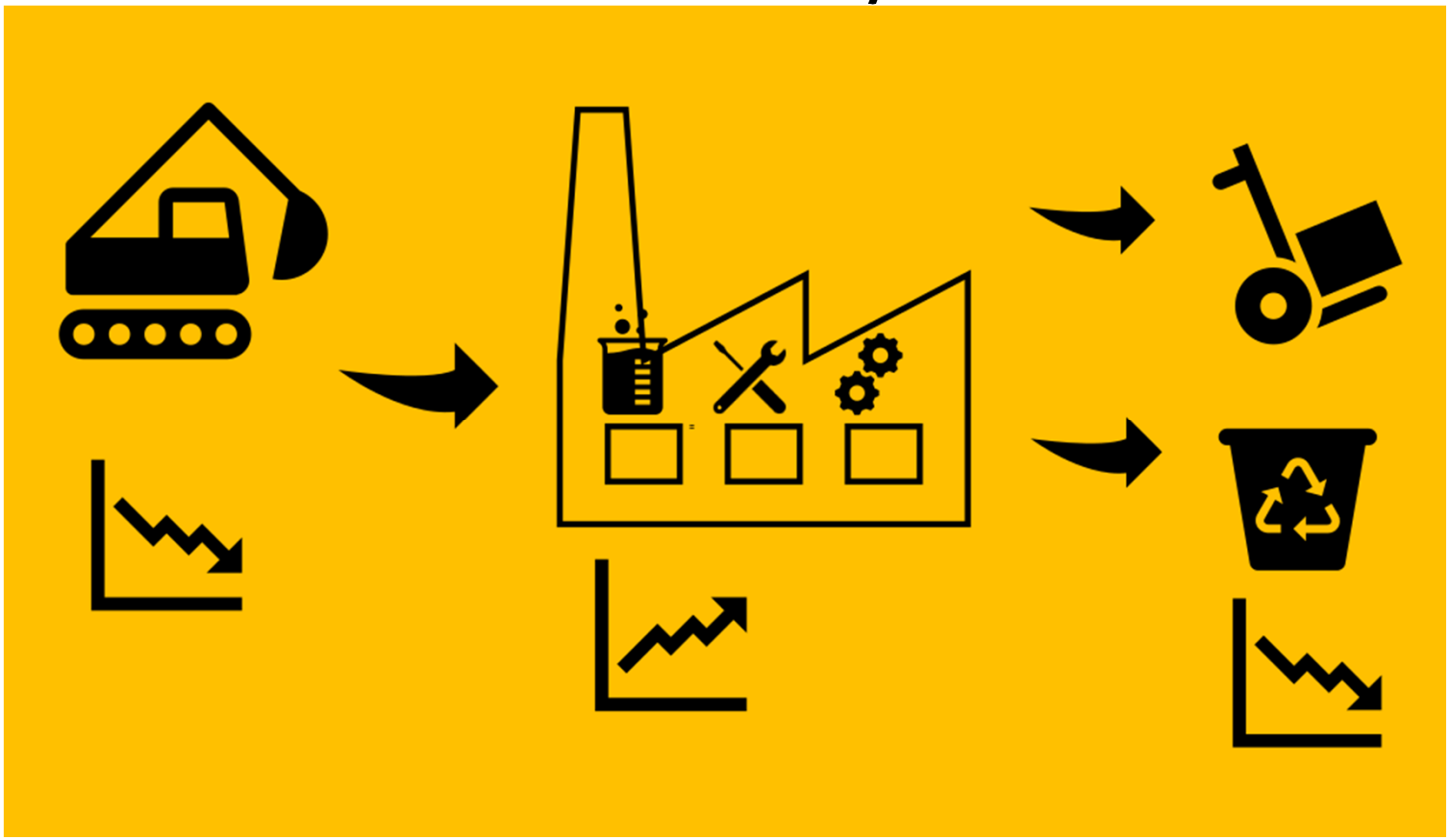
2.2. process optimisation, resource efficiency:
> IED: EMS, waste prevention

2.3. Producing or using secondary raw materials:
> IED, WFD, possibly also WSR, REACH

2.4. Redesigning the process: new value chains, products, & processes. > IED, possibly also WFD, WSR, REACH

2.5. Industrial symbiosis:
> IED (permitting), WFD (by-products). Also: spatial planning

2.2. Process optimisation/resource efficiency



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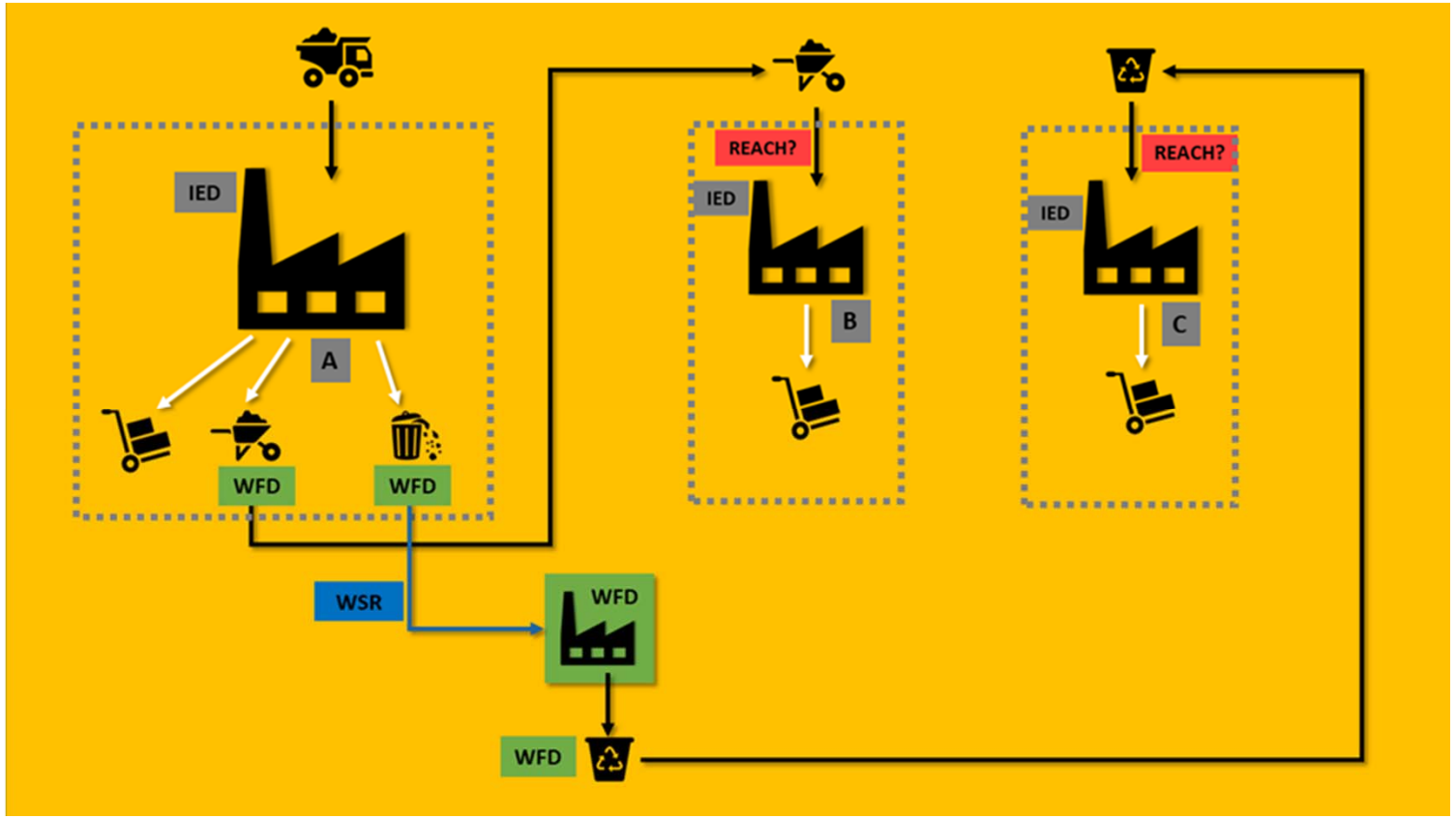
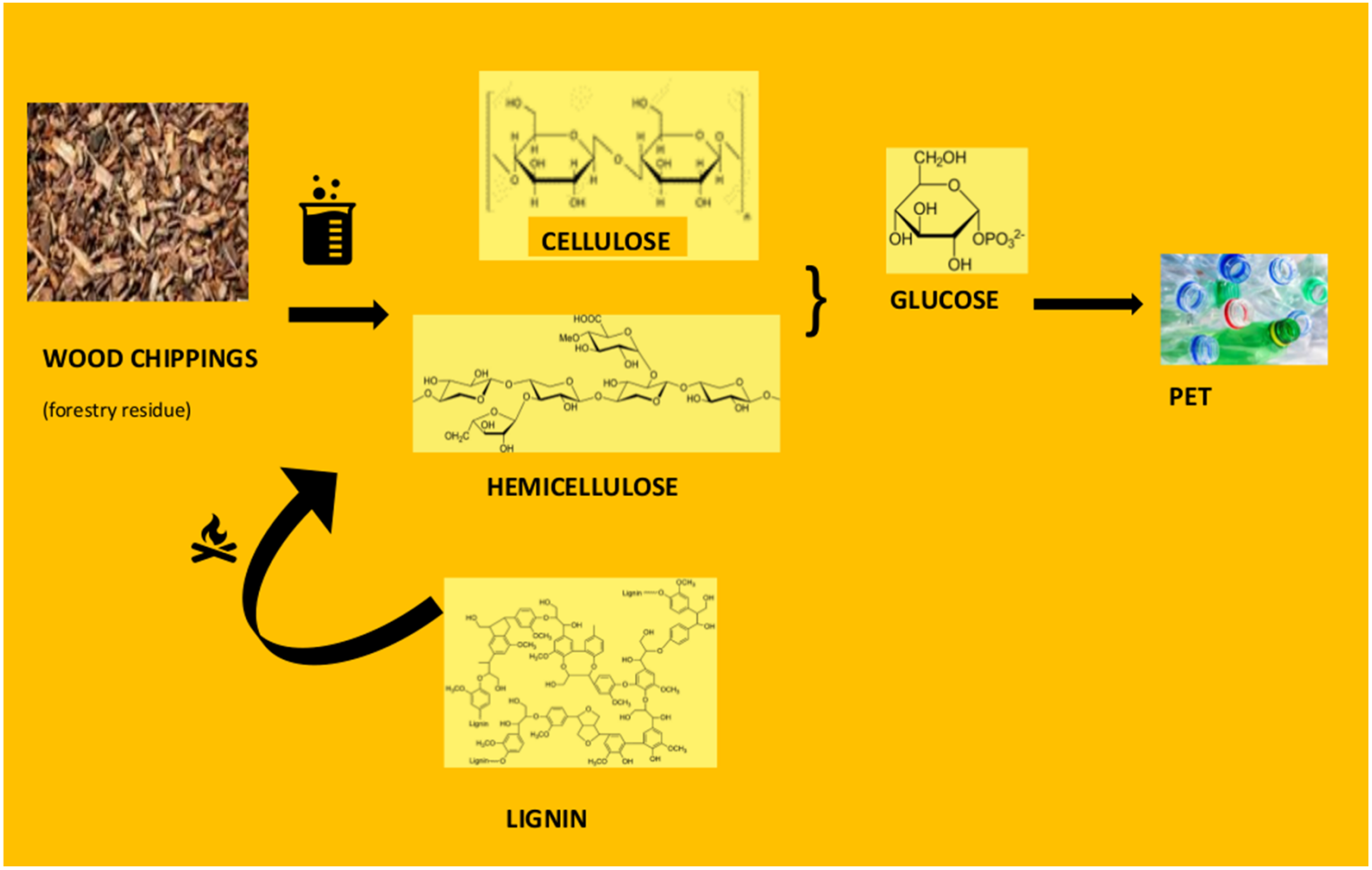
2.3.Producing or using secondary raw materials (recycling)



2.4. Redesigning (biorefinery)



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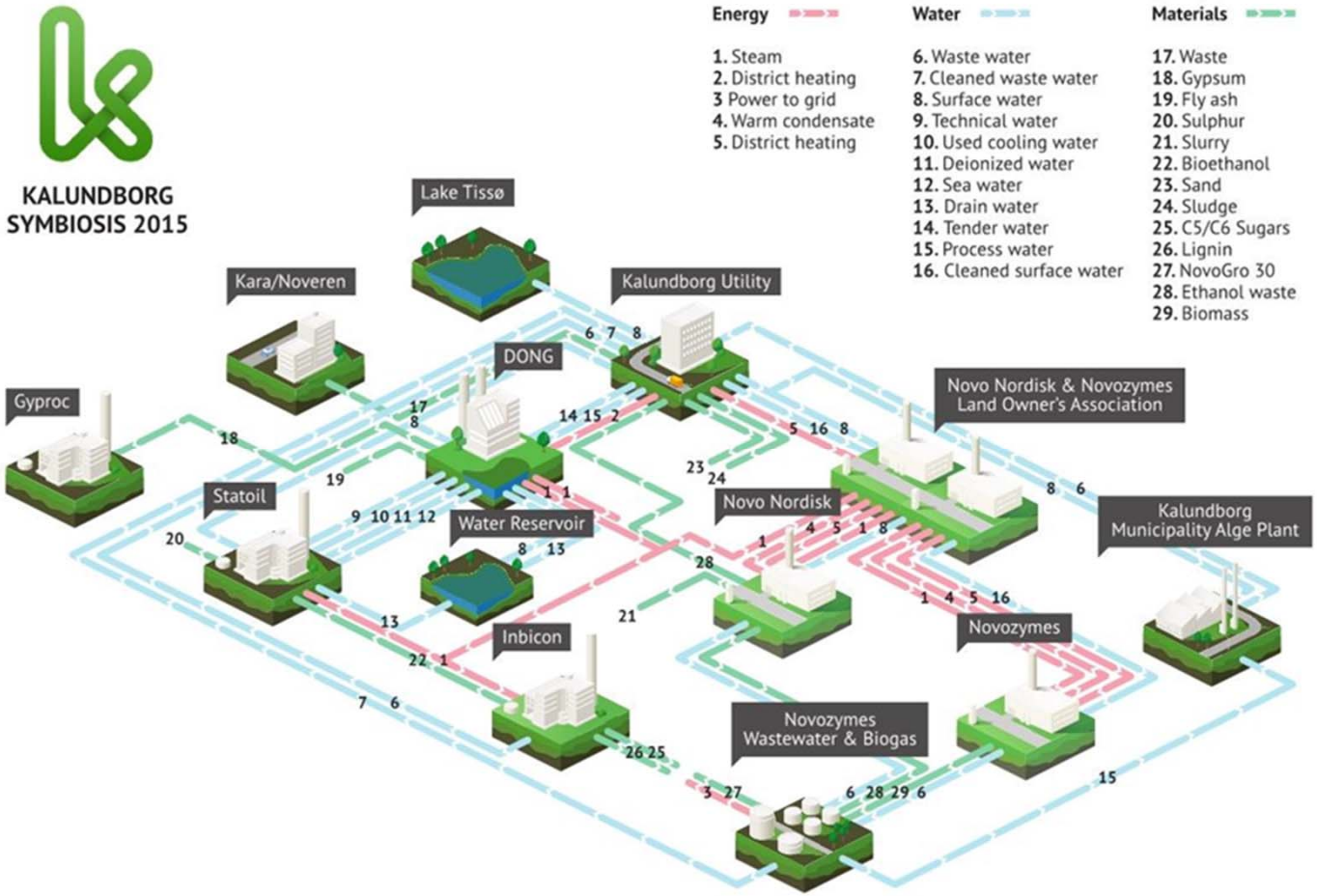
2.5. Industrial symbiosis/value chain



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Further input on drafts and cases welcomed!

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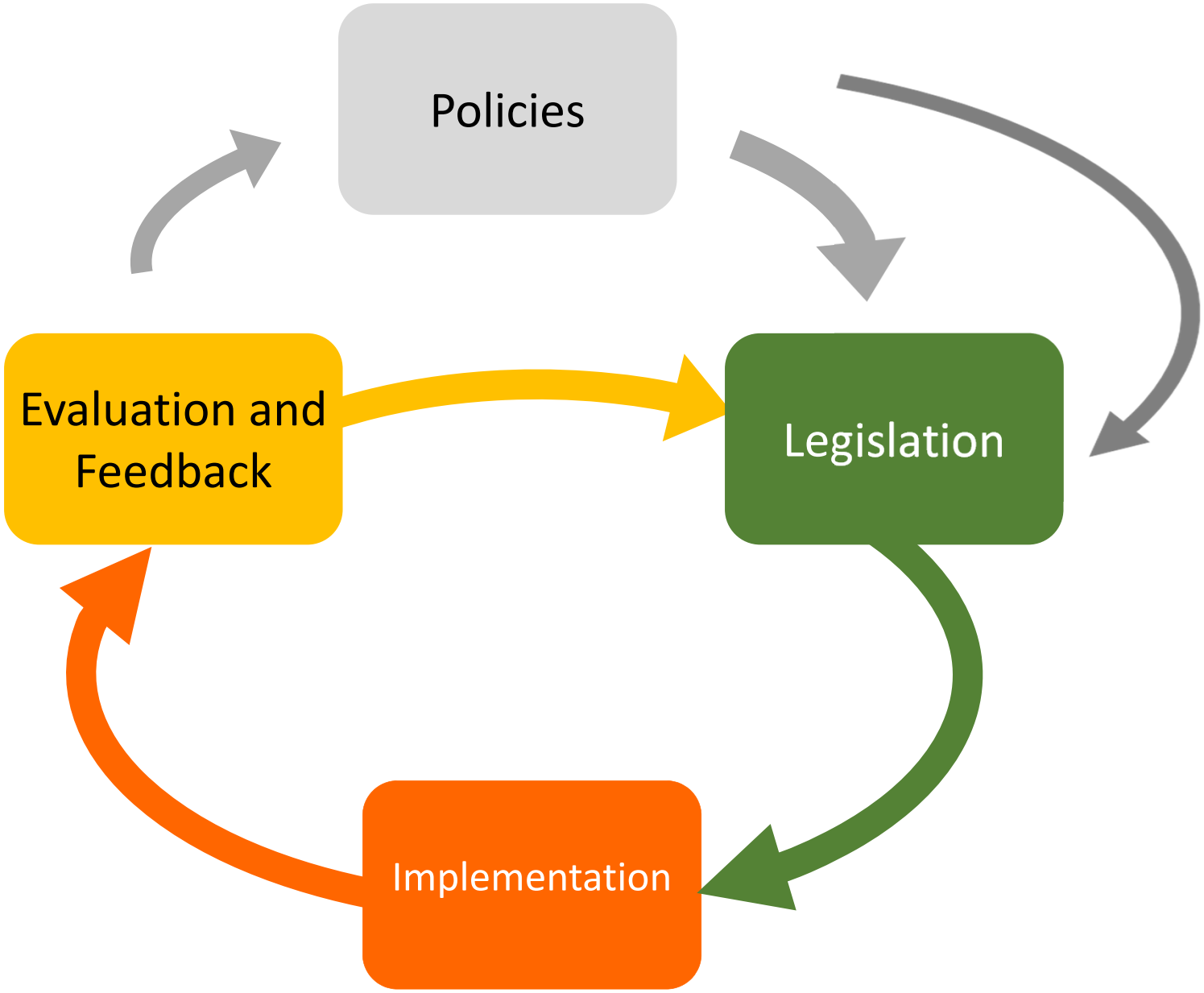
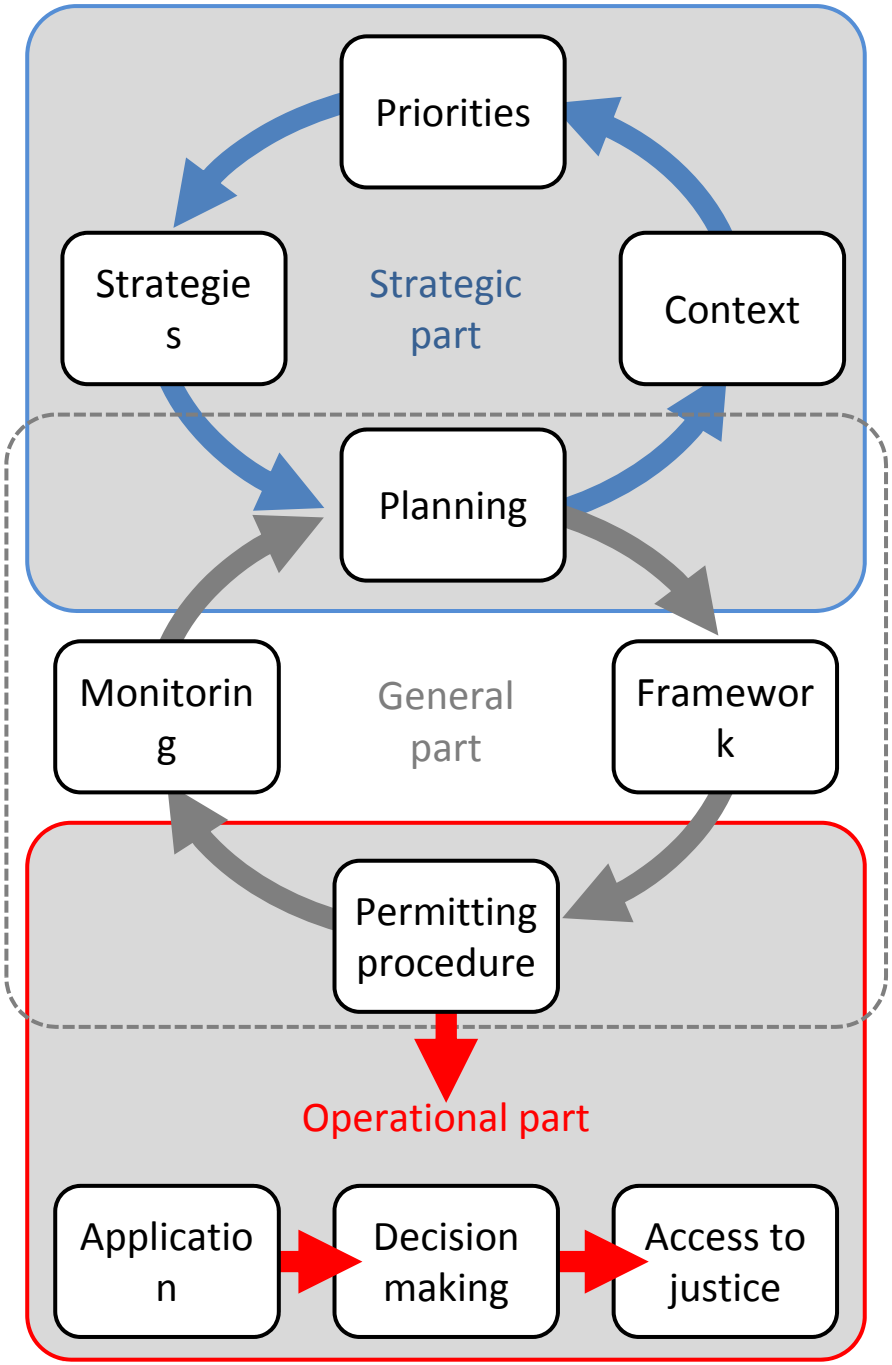
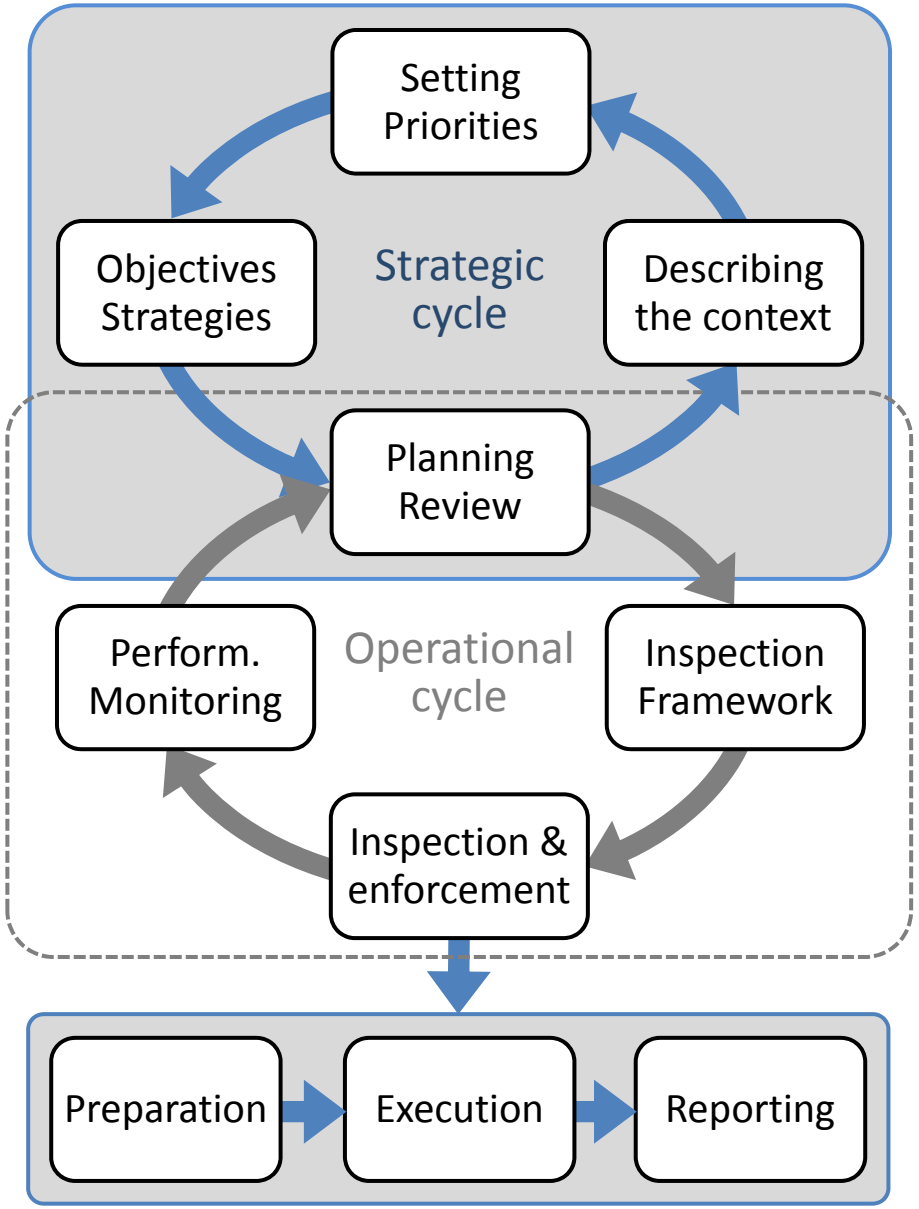
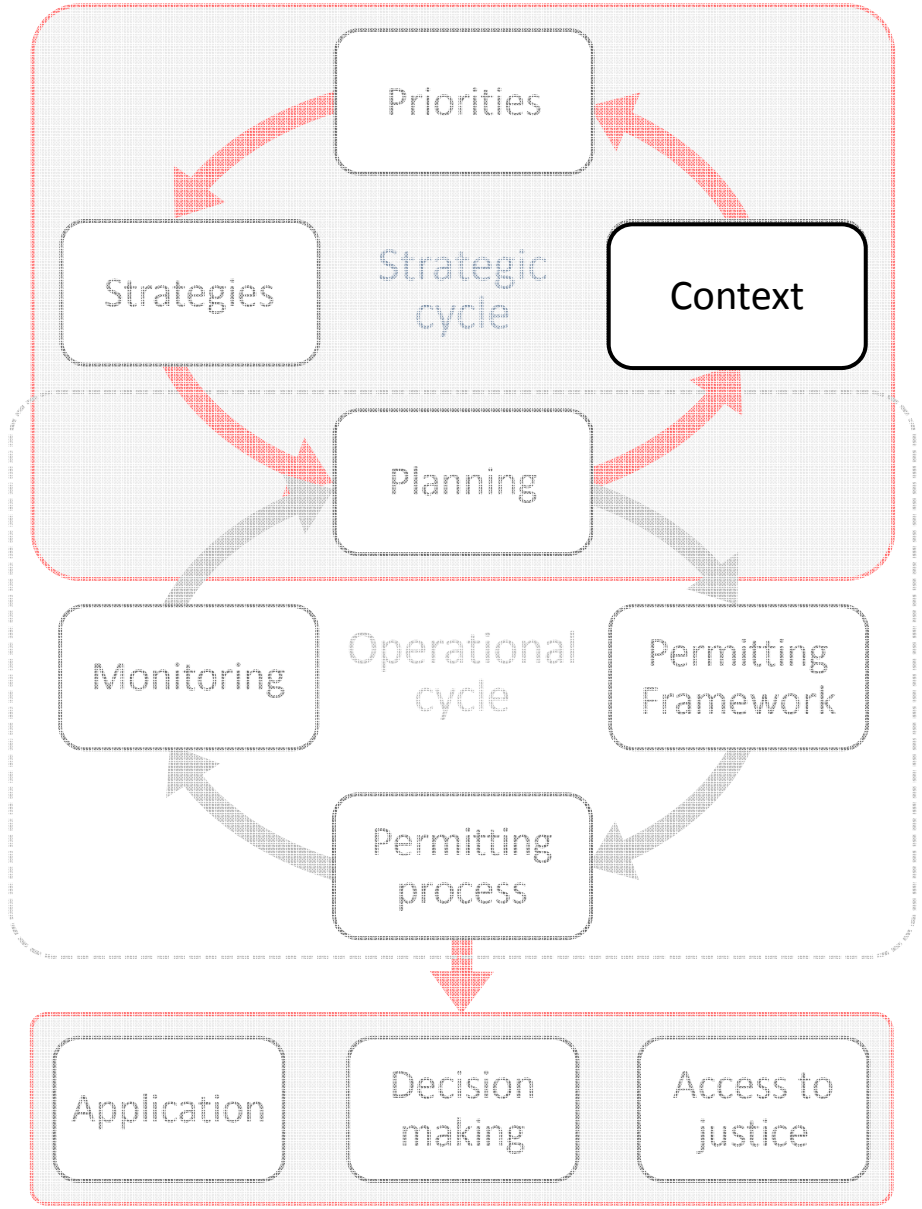
MiW-IMPEL Guidance

- Content in chapters and annexes
- Structure should reflect the way Environmental inspection and permitting agencies carry out tasks
- Within IMPEL the Environmental Inspection Cycle is well established
- Based on the Regulatory Cycle, used to assist environmental inspection and permitting agencies in charge of regulating the impact to the environment and to develop strategies.
- It helps to work systematically towards a permitting, compliance and enforcement programme, including structured feedback.
- Regulatory cycle for developing and executing CE policy
- Link content of the guidance to the regulatory cycle


Policies
Legislation
Implementation
Evaluation and Feedback


Priorities
Strategie s
Strategic part
Context
Planning
Monitorin g
General part
Framewor k
Permitting procedure
Operational part
Applicatio n
Decision making
Access to justice


Setting Priorities
Objectives Strategies
Strategic cycle
Describing the context
Planning Review
Perform. Monitoring
Operational cycle
Inspection Framework
Inspection & enforcement
Preparation
Execution
Reporting



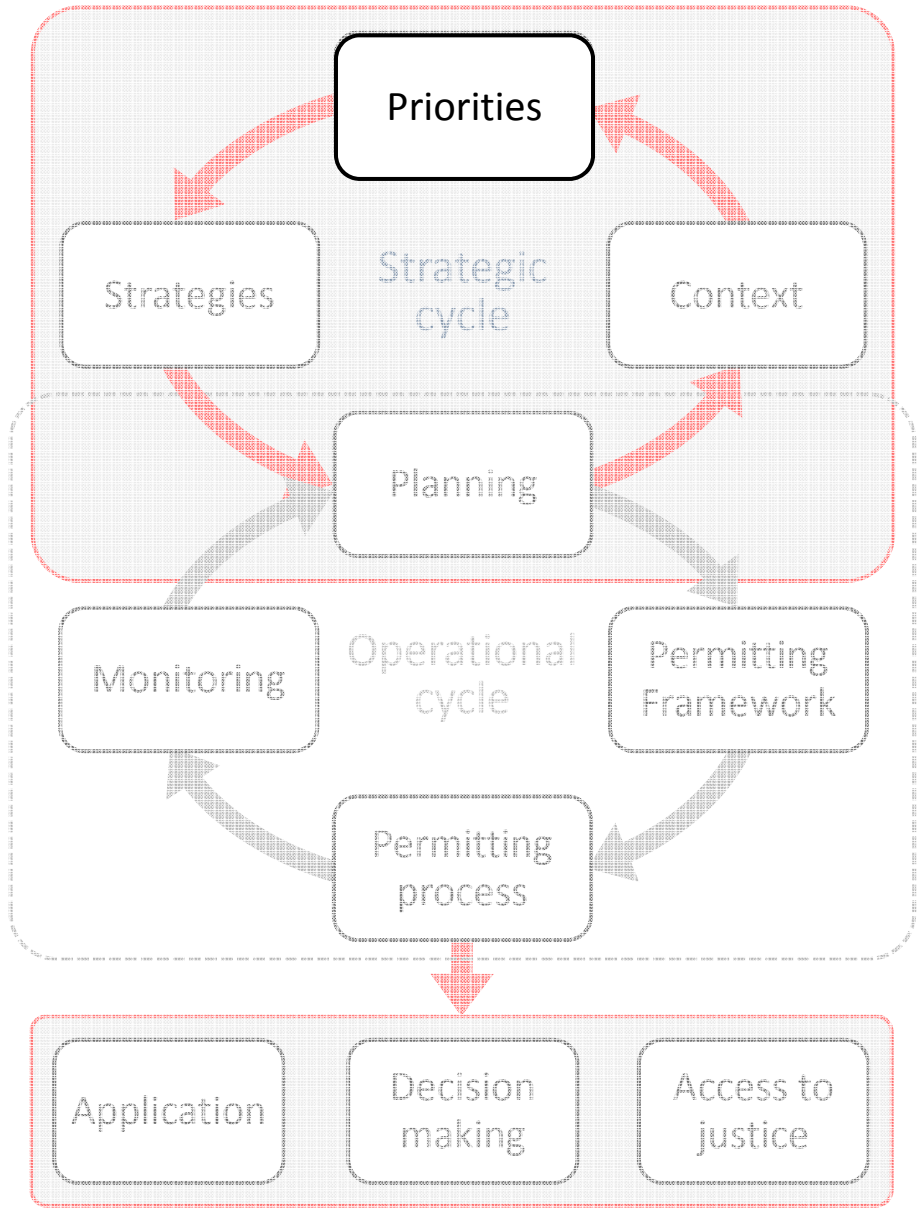
Context

Identifying the scope

- Area
- Mission and goals
- Tasks
- Legislation
- CE policy
- Stakeholders e.g CA REACH, WSR, etc

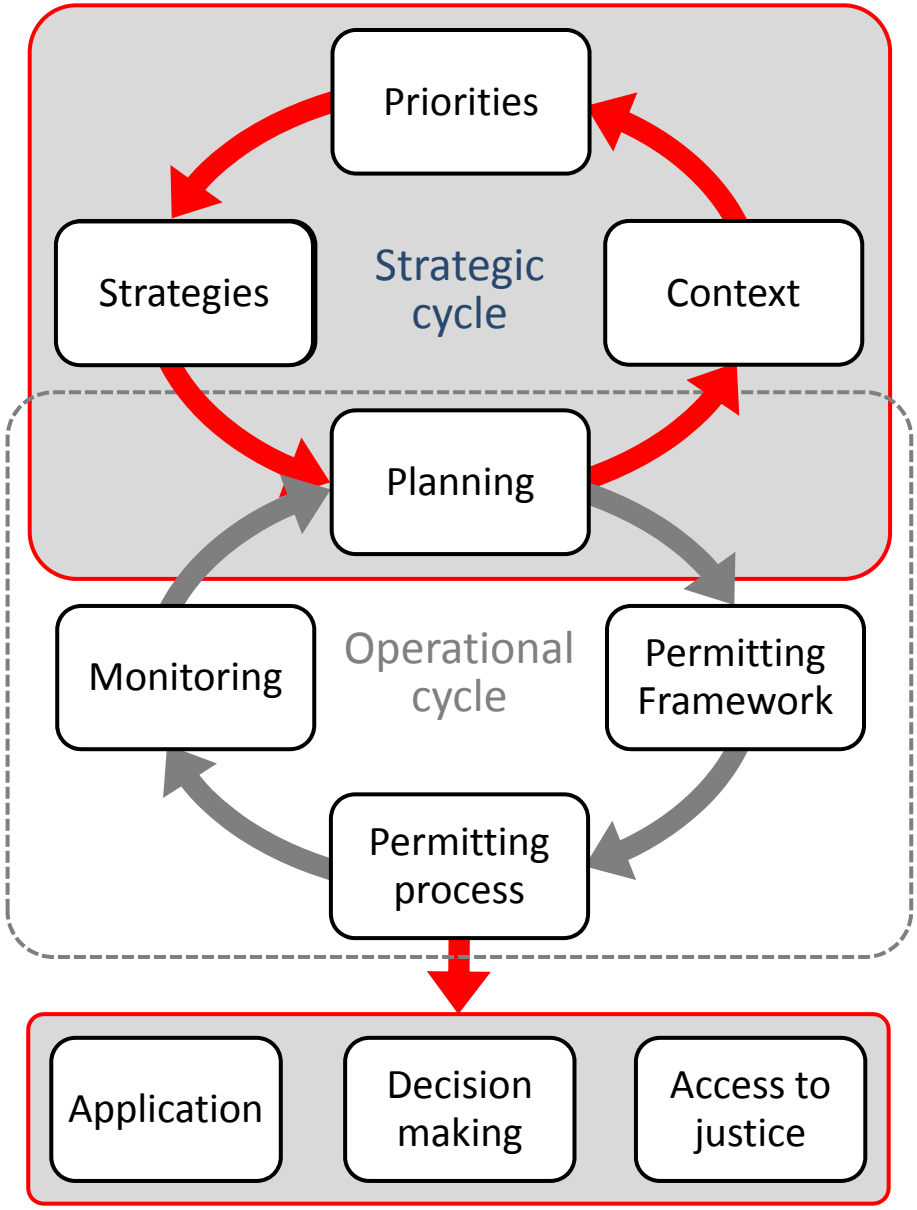
Gathering information

- On drivers, priority areas, opportunities for CE
- On installations and permit-situations
- Changes in BREFs and legislation



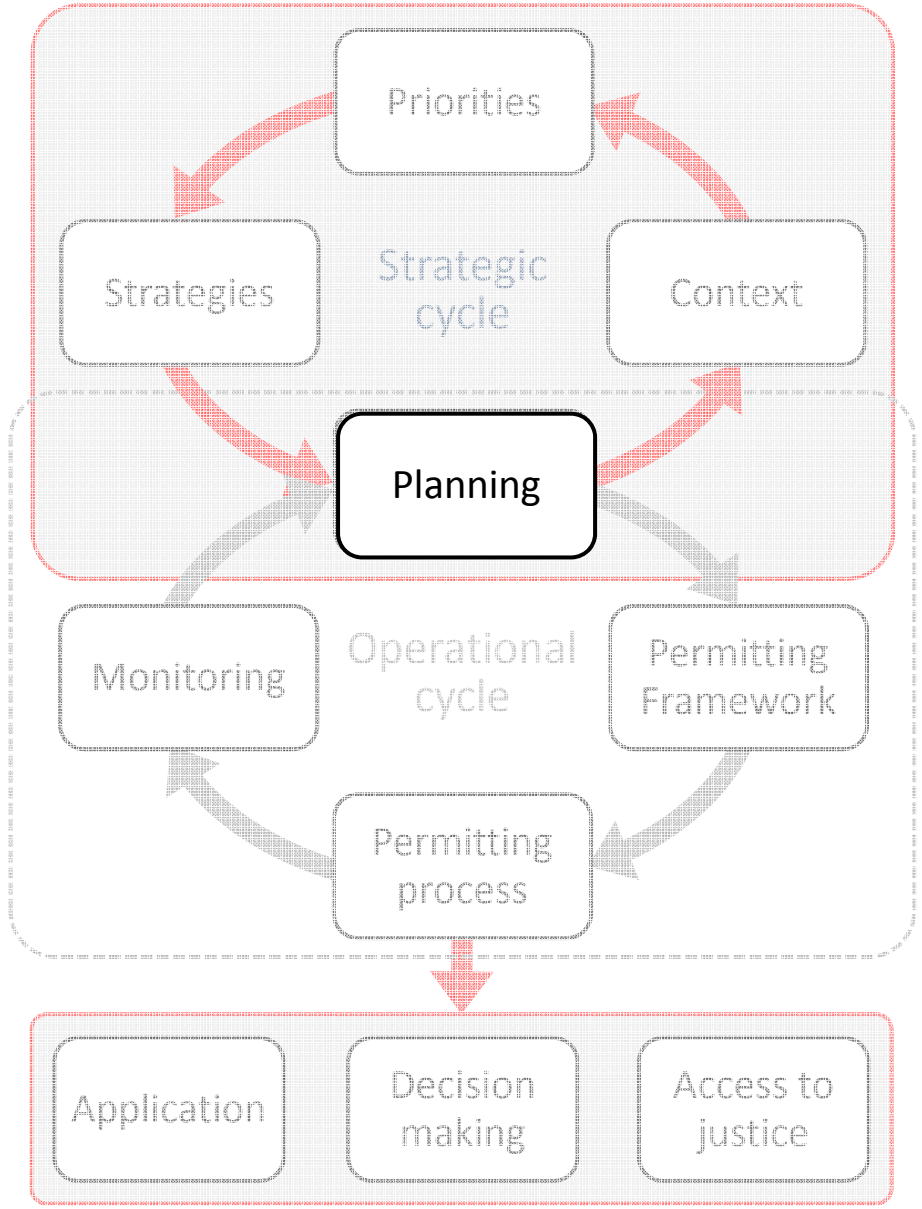
Priorities

- Sustainable use of resources
- Uptake secondary raw materials
- Innovative businesses
- Beyond compliance



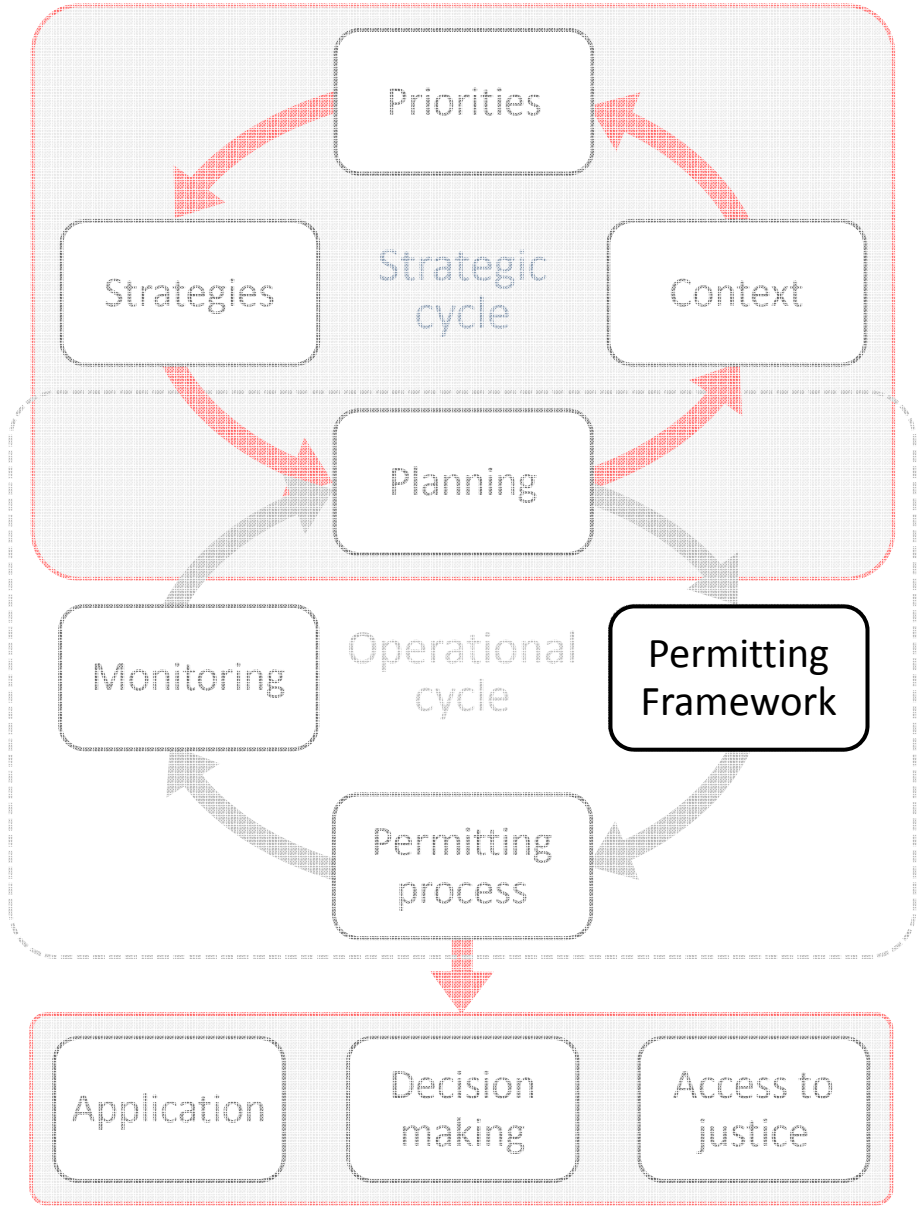
Strategies

- Sectoral approach
- Material approach
- EoW decisions
- Quality protocols
- Sustainable growth agreemeents
- Applying BAT for CE
- Emerging techniques
- Reviewing existing permits
- Industrial symbioses
- Cooperation (permitting and inspection)
- Cooperation (regions)
- Communication (Internal and external)



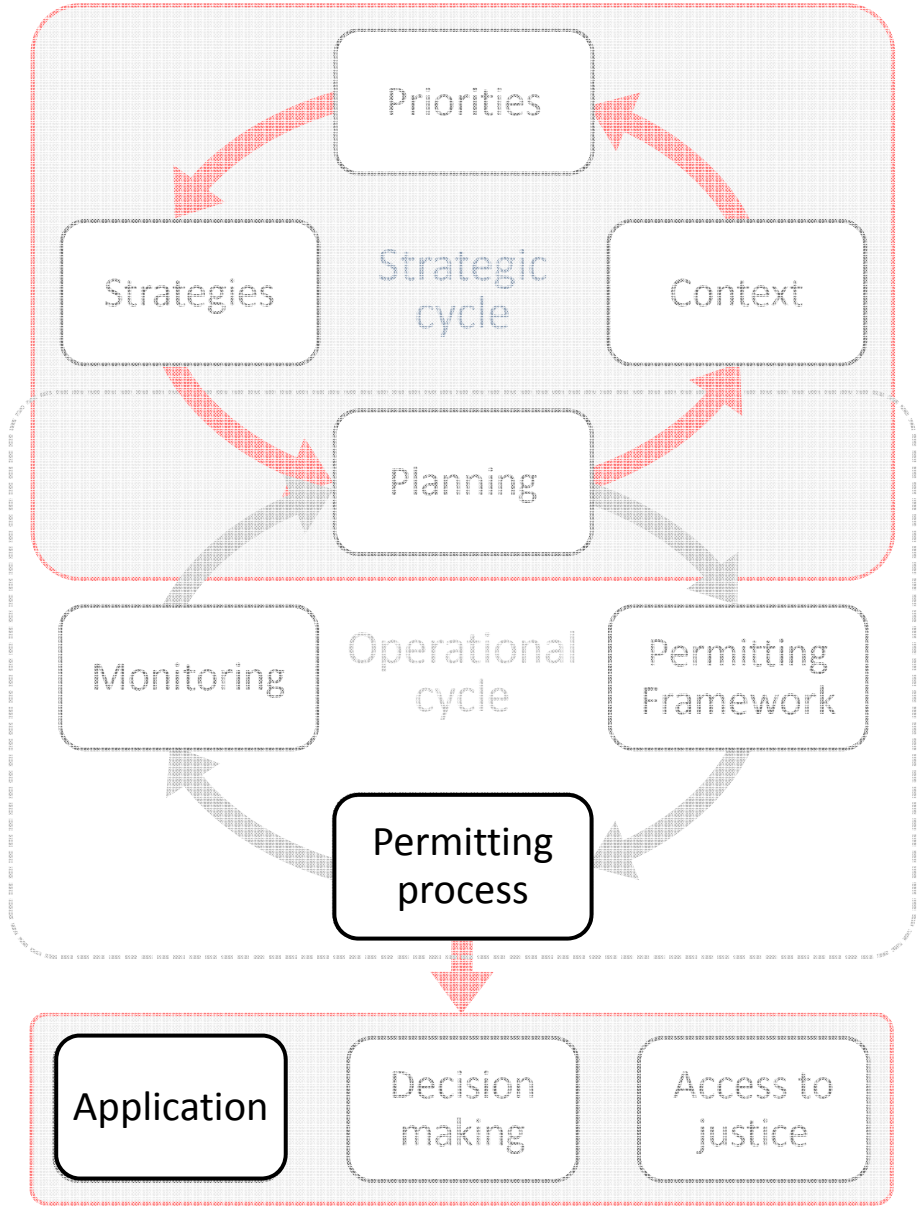
Planning

- Annual workplan for permitting
- Review of permits
- Permits on hand and to be expected
- Resources
- Priorities that have been set
- Key data on time spend
- Time allocation



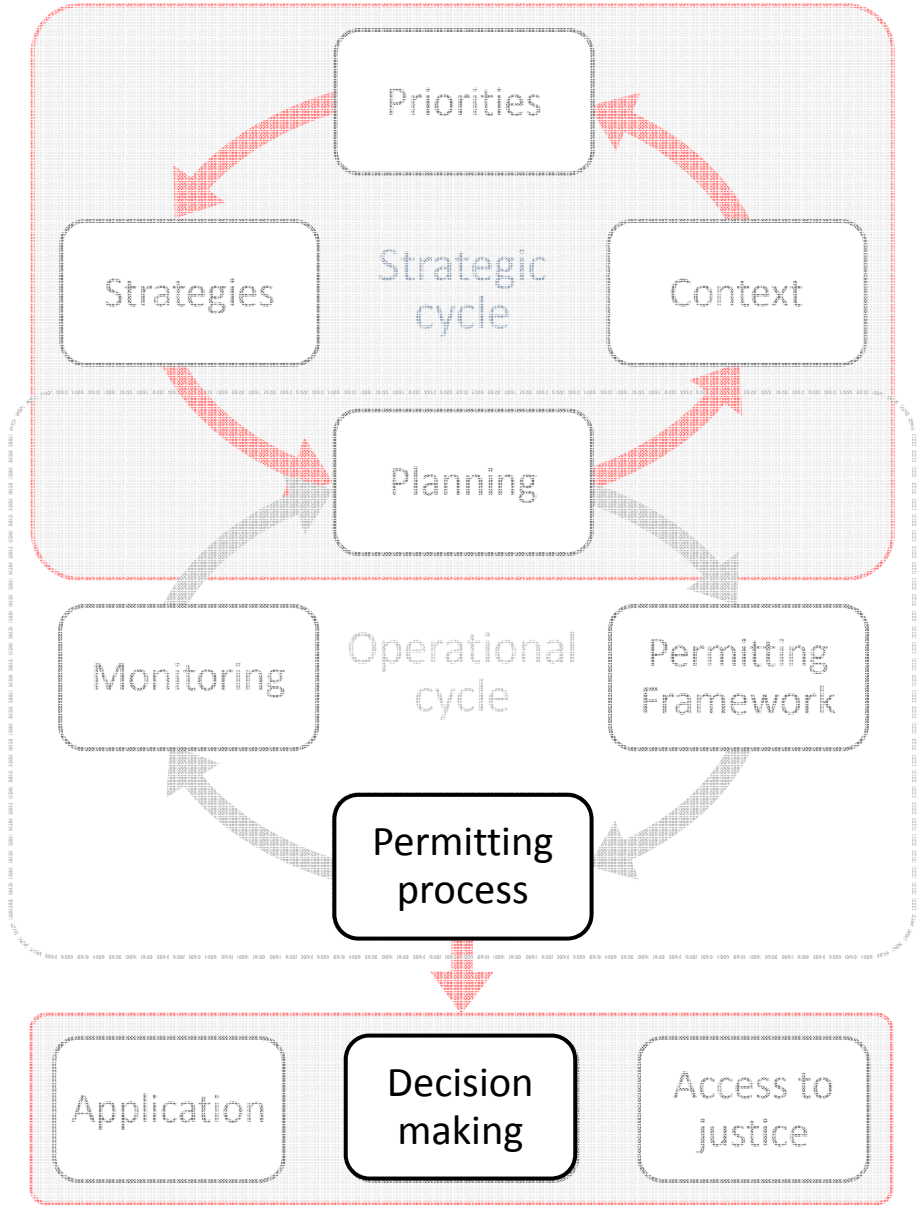
Permitting framework

- Adequate education and training
- Good guidance
- Organisation of conferences and information campaigns
- Clear procedures
- Checklists
- Technical literature
- Material passports/certification for materials
- IT systems
- Database EoW decisions
- Helpdesk for businessess
- Technical meetings with operators (sectorial or individual meetings)
- Self assessment checklist to help operator to be compliant with administrative procedures, deadlines, general technical requirements



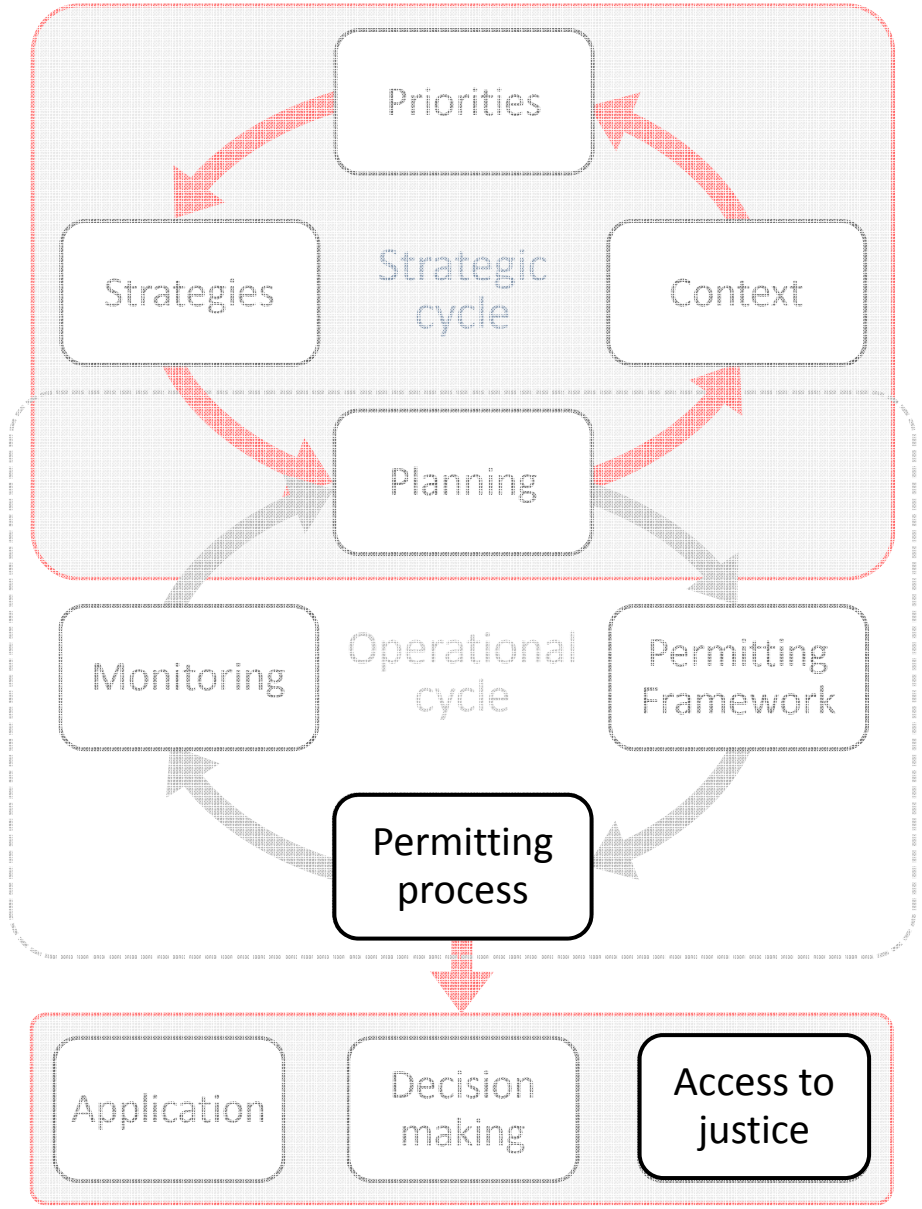
Application

Iniative
Pre-application discussion
Application form
Submission of application
Checking of application
Notification
Public participation
Type of permit procedure
Fees



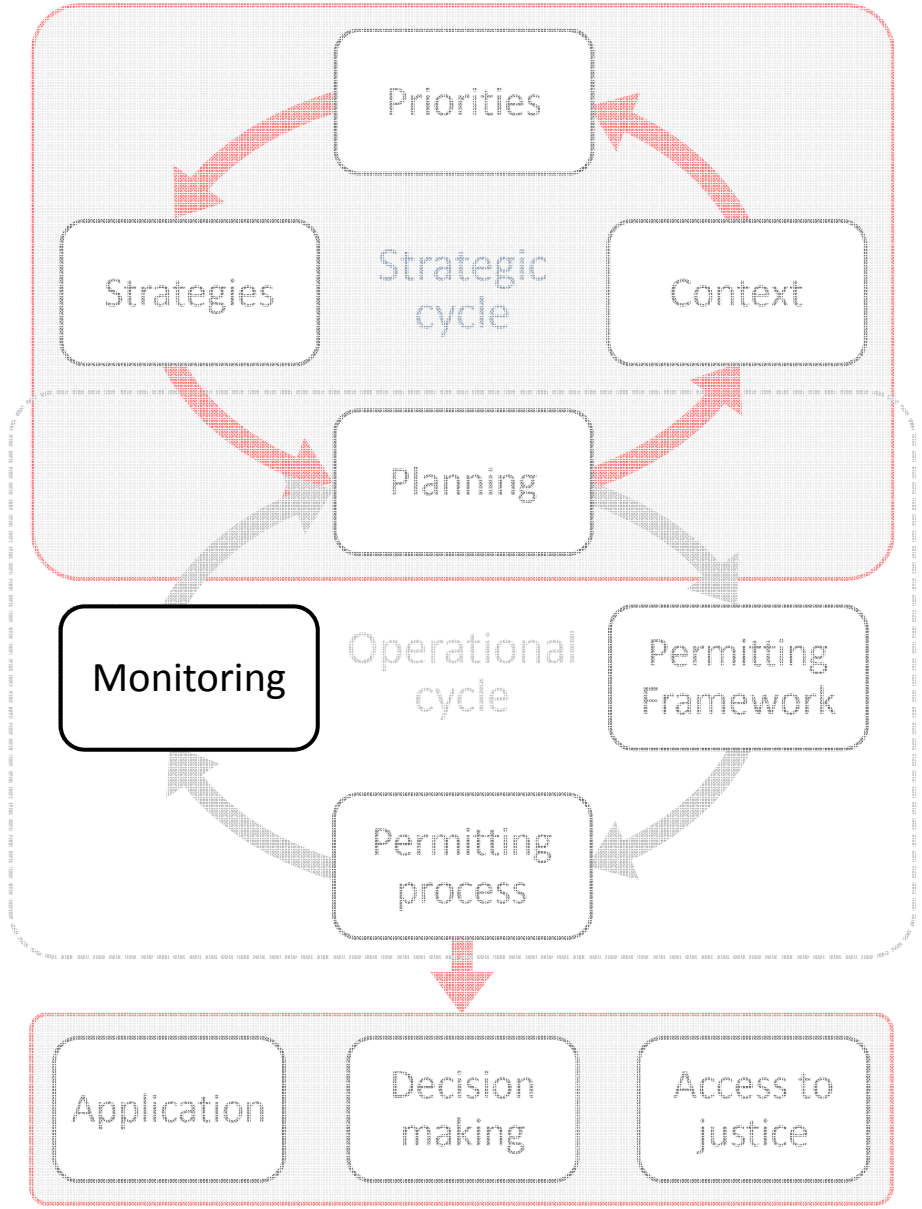
Decision making

Environmental Impact Assessment
Appropriate assessment
Advise and consultation
Boundaries of installations
BAT assessment
Cost-benefit assessment
Setting conditions
Use of GBR
Draft decision
Enforceability check
Notification
Public participation
(Fees)



Access to justice

- Objection
- Appeal
- Judging



Monitoring

- Quality of permits

MAKE IT WORK

European Union Network for the Implementation and Enforcement of Environmental Law

MiW – IMPEL Guidance – State of Play

Ilia Neudecker, Foxgloves Consultancy

Nicosia, Cyprus, 12 September, 2018

Make it Work and IMPEL

- MiW is a Member State initiative bringing together law-makers, policy-makers and regulators to produce recommendations for keeping EU environmental law and implementation practice fit for purpose and future-proof.

- IMPEL is a Network of regulators and authorities in European countries carrying out projects to support and improve the implementation and enforcement of EU environmental law.

FOXGLOVES

MAKE IT WORK

European Union Network for the Implementation and Enforcement of Environmental Law

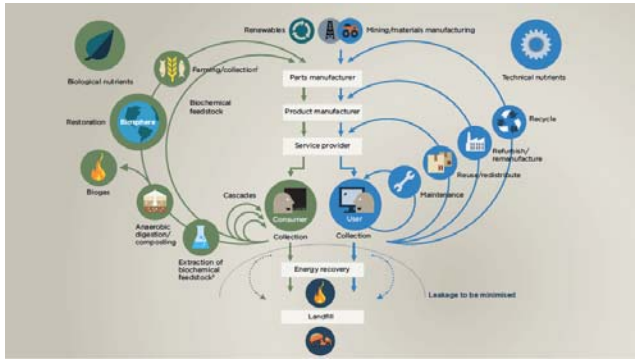
MiW & IMPEL - Enabling eco-innovations for the circular economy

Aim: to develop & provide guidance:

- For better use of EU environmental legislation
- To facilitate transition to circular economy

Background:

- 2015 EU Action Plan for the Circular Economy
- Keep materials & their value in the economy as long as possible
- Requires eco-innovation
- Challenge for businesses, policy-makers and regulators



Structure of guidance

Chapter 1 Introduction: context, aim, purpose, audiences

Chapter 2 Relevant legislation

Chapter 3 Governance (supporting regulators)

Chapter 4 Policy (suggestions for policy-makers)

Chapter 5 Business perspective (also NGOs to be included)

Chapter 6 Plastics (cross-cutting through Chs 2-5)

Annex I EoW-decisions

Annex II EoW-inspections

Annex III Proposal for a database on EoW-decisions

Workshops & Working Sessions

1st Workshop (The Hague, 14&15 December 2017)

- Broad, exploratory
- Perspectives from 22 MS

EC, IMPEL & EPA networks

- Discovering similarities

and differences across EU

Workshops & Working sessions

IMPEL Landfill & End-of-Waste, Treviso, 19&20 April, 2018)

- End-of-waste: cases & approaches in different MS

Working session with regulators (18 June, 2018):

- Exploring main issues & solutions > Chapter 3 on governance ('skeleton')

Working session with business (Brussels, 6 July, 2018):

- Exploring challenges, good practices > Chapter 5

Way forward

Cyprus workshop 12&13 Sep: input on current draft chapters

Policy session (October): input for Chapter 4

Plastics session (November): testcase for all the chapters

Edinburgh, 22/23 November 2018, 3rd workshop

to discuss complete draft guidance

Any questions or comments?

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REPUBLIC OF ESTONIA
MINISTRY OF THE ENVIRONMENT

End of Waste in Estonia

Kristel Lopsik
Ministry of the Environment / Senior Officer

12.09.2018

End of Waste in legislation

Estonia differs two types of EoW status:

1) EoW on narrow scale: EoW status is achieved by compliance with EoW criteria which is set on EU level or in a regulation of the Minister. *Example: compost, fuel additive, road construction material. Visually hard to differ is it waste or a product.*

2) EoW on broader scale: material recycling into products. No other treatment operation is necessary. *Example: plastic granulates, rubber mats. Does not include backfilling or use as fuels.*

EoW regulations of the Minister

Currently there are four regulations with EoW criteria established by the Minister in Estonia:

1) Requirements for production of compost from biodegradable waste. *In force: 08.04.2013*
2) Requirements for digestate from the production of biogas from biodegradable waste. *In force: 10.05.2016*
3) Requirements for product from sewage sludge. *In force: 19.07.2017*
4) Requirements for fuel additive from oil shale extraction and refining waste. *In force: 02.11.2015*

The requirements of regulations have been notified and compliance has been checked by the Commission.

EoW regulations currently being developed: fuel additive produced from hazardous waste oil, pre-treated tyres mixed with oil shale to produce oil shale oil. Planned EoW regulations: construction and demolition wood to be used as a fuel/material.

EoW in case of recycling

On broader scale recycling (R3o, R3m, R3f, R5m, R5o, R5c, R5f, R5l, R6) is accepted as EoW status, when:

1) It involves producing something through recycling which does not differ from raw materials (analysis or research is required).
2) Recycled material complies with legislation (analysis).
3) Recycled material complies with International or national standards (analysis and certificate of compliance).

This is proven through the process of permitting and the permit and decision to regard something as EoW recyclate goes through a process of verification (the permit is being coordinated within Waste Bureau).

Involved Parties in implementation

REPUBLIC OF ESTONIA
ENVIRONMENTAL BOARD

REPUBLIC OF ESTONIA
ENVIRONMENTAL INSPECTORATE

1) Environmental Board: issuing of permits, verification of conditions of EoW

- Waste Committee: involves members of different authorities, expertise knowledge, advisory body.

2) Environmental Inspectorate: checking permits for filling criterias for EoW status, sampling, guidelines, proposes to change the permit, enforcement.

Case studies

Permits- oil recovery operators

- According to permits oil recovery operators have been given recovery code **R3m**. The waste has to cease to be waste and REACH requirements have to be met. One permit has the requirement to send the copy of analysis reports to competent authority before selling the product.
- One is carrying out mechanical treatment (using chemicals to remove excess water, the goal is to lower water and mechanical particles), the other destillation and the third rectification.
- Parameters of the quality are set by the operators (so called tecnological chart has to be implemented). **No end-of-waste act has been issued, but will be adopted by the end of this year. Only case-by-case end of waste decisions.**
- All of recovery operators **use exemption** according to REACH article 2 (7) (d), one of them has applied PPORD notification.

Inspections

1) On-site visits, monitoring of waste movements, advising Tax and Customs Board.
2) General permit requirements (quality of waste, analysis and monitoring, produced waste, used water, fuel and other resources ect.)
3) Monitoring of the products quality (analysis acts and complience with technological charts)
4) Taking samples of waste and products. Last year discovered the production of excise goods (eg diesel, gasoline, fuel oil).
5) SDS and the use of exemption. In 2017 all the reports and evidence to be fit to use the excemption were investigated.
6) Material and waste balances were calculated.
7) Monitoring of waste movements (according to Reg. (EC) no1013/2006).
8) Monitoring of product movements (tracking the end-user).

„EoW cleansed fuel oil“ case study

M/T Purple Gem from Denmark (2017)

1) Vessel Purple Gem carried „Cleansed fuel oil“, CN 2710 19 99, SDS was present, but incomplete REACH nr was stated.
2) Danish competent authority explained that it had been produced from different hazardous waste. Later SDS was corrected and REACH reg.nr was replaced with exemption according Article 2(7)(d). It turned out that EoW status was given by local authority.
3) Estonia has decided that EoW criteria for waste oil has to be [illegible]f the Minister.

Compost and EoW: court case waiting for pre-decision of EUCourt (C-60/18)

- AS Tallinn Vesi applied R3o for sewage sludge treatment and EoW status to use treated sludge as a compost.
- Environmental Board grant a permit with R12o (lack of product standard).
- Estonian Circuit Court turned to European Court for preliminary ruling (not yet made) with 2 questions In the case where end-of-waste criteria have not been set at EU level :
- for a particular type of waste, should Article 6(4) of Directive 2008/98/EC interpreted to mean that a national legal act providing that end-of-waste status depends upon whether criteria set in a generally applicable national legal act exist for a particular type of waste is in keeping with that provision of Directive 2008/98/EC?
- Commision has agreed with Estonia´s approach (aswell Austria and Italy)

Compost and EoW: court case waiting for pre-decision of EUCourt (C-60/18)

- In the case where end-of-waste criteria have not been set at EU level for a particular type of waste, does the first sentence of Article 6(4) of Directive 2008/98/EC grant the waste holder the right to apply to the competent authority or to a court in a Member State for a decision on end-of-waste status in keeping with the applicable case-law of the Court of Justice of the European Union, irrespective of whether criteria set in a generally applicable national legal act exist for a particular type of waste?
- Commision has agreed with Estonia´s approach (aswell as Austria, Netherlands disagreed with both interpretations)

REPUBLIC OF ESTONIA
MINISTRY OF THE ENVIRONMENT

Thank you!

Kristel Lopsik
kristel.lopsik@envir.ee

Landfill Inspection

Solid Domestic Waste in Larnaca –Famagusta Districts

Ritianne Stellini Galea

Romano Ruggeri

Liesbet Rommens

Brief Description of the Installation

- The Installation has been operating since 2010
  - Treatment of domestic waste from Larnaca and Famagusta districts
- In the past 2 weeks, Nicosia district has been added (it is envisaged that incoming waste will increase from 110,000 Tonnes/year to 190, 000 Tonnes/year.)

- The installation consists of:
  1. Reception Hall of mixed household waste
  2. Mechanical Separation Facility
  3. Composting area (green waste, urban waste)
  4. Wastewater Treatment Station
  5. Landfill

1. Reception Hall of mixed household waste

1. Reception Hall of mixed household waste

Working Hours:

- Waste is received 24/7 at the Reception Hall
- It operates in 3 shifts from 6am until 11.30pm
- Maintenance and cleaning from 11.30 to 4am

- This area consists of TWO bunkers
- 8 shutters – the majority were closed at the time of inspection
- Trucks are washed as soon as they exit this area (by using the treated water)
- The unpermitted waste, bulky waste and metal are removed by the grabber and stored in a contained area

1. Reception Hall of mixed household waste

- Shredder equipment for bulky waste, mattresses, trees, and tyres.
- Shredded material is landfilled

2. Mechanical Separation Facility

2. Mechanical Separation Facility

- **Outbound materials / products:** ⟶ Main final destination: outside Cyprus
  Plastic and paper: Asia (problems with China bans)
- Plastic bags
- PET Packages
- PE/PP Packages
- Mixed paper-cardboard
- Ferrous metals
- Non-ferrous metals
- Glass
- RDF (Refuse Derived Fuel)
- Organic

- Residual waste (landfilled)
- Hazardous waste (removed)
- Waste exceeding plant process capacity: landfilled without treatment

Work Flow

- 1. Bag openers
- 2. Primary screening on site: three streams i.e. 130mm, 300mm and larger than 300mm
- 3. Secondary screening
- 4. Ballistic separation
- 5. Optical classifier (n.12)
- 6. Metals collected by magnetization
- 7. non ferrous separated by eddy current separators
- 8. Manual separation and cleaning
- 9. Baling process
- 10. Stored
- 11. Export

- Air treatment: sent to filter bag or biofilters

3. Composting Unit

- Organic waste from MSW and green waste is collected and transferred to intensive aerobic composting process for stabilisation
- Parameters are monitored and recorded
- Operator adjusts parameters such as temperature, oxygen concentration and air flow to ensure a successful and on-time completion of the process
- Air is sucked from the biocells and sent to thermal oxidation (ELV at the chimney)

3. Composting Unit

Compost from domestic waste

- After 15 days of composting in closed area, the composted material is stored in piles.
- Piles of compost are stored for five to six weeks and mechanically mixed by compost turner vehicle until maturation is completed

3. Composting Unit

Compost from green waste

Mature compost used for:

- Covering material (mixed with soil) for residual waste in landfill
- For restoration of old landfills

4. Wastewater Treatment Station

4. Wastewater Treatment Station

- Two-step wastewater-leachate treatment facility:
- Aerobic stabilisation
- Reverse Osmosis

- Capable of processing 200m3/day
- Used to cool heat exchangers used in composting process and for irrigation purposes within the installation (100% reused in the process).
- 65% clean water – 35% “residual” water (sprayed in the landfill surface)
- Sludge: sent to composting

5. Landfill

Biogas Unit

5. Landfill

- Landfill area is used for the residues of the mechanical treatment
- Equipped with leachate collection pipe network
- Covered by a biogas collection system (horizontal and vertical).The system is attached to a flare unit for the combustion of the produced biogas. However, this unit has never been used to date in view of low concentration of methane being produced.
- Soil and compost used for daily coverage

Good Practices

- Inspectors:
- Checklists for records and site inspection
- Thorough preparation before the inspection – review of permit (highlight the important conditions) and review the 3 previous inspection reports to cross check for any non-compliances.
- Summary of Inspection reports are uploaded on their website

- Operator
- The treated water and compost material is reused within the facility
- The installation provides a “complete” solution for the range of domestic waste by a variety of waste treatment techniques on one place
- Dumped waste is being covered → not smelly

Room for Improvement

- Inspectors:

- Air pollution should be included in inspections especially since it is included in the IPPC permit (biogas is not a business of the environmental inspector so far, as air pollution is a task of a different Ministry)
- Lack of technical support and legal competence
- Risk Assessment Matrix should be applied: inspection frequence is decided by inspectors
- Need to prioritize non routinary inspection (complaints)
- Suggestions to improve the permit
- Quantity vs quality of inspections
- We did’nt have the opportunity to see the real interaction between the inspector and the operator

- Operator:

- Lack of rainwater containment – directly discharged to the surrounding environment and the landfill – no reuse
- Reception Hall shutters should be closed as soon as the truck exits the area due to odour issues.
- Reduce the amount of waste stored to prevent risk of fires

THANK YOU!

European Union Network for the Implementation and Enforcement of Environmental Law

Training Programme 2018-2020

Landfill & Circular Economy Project

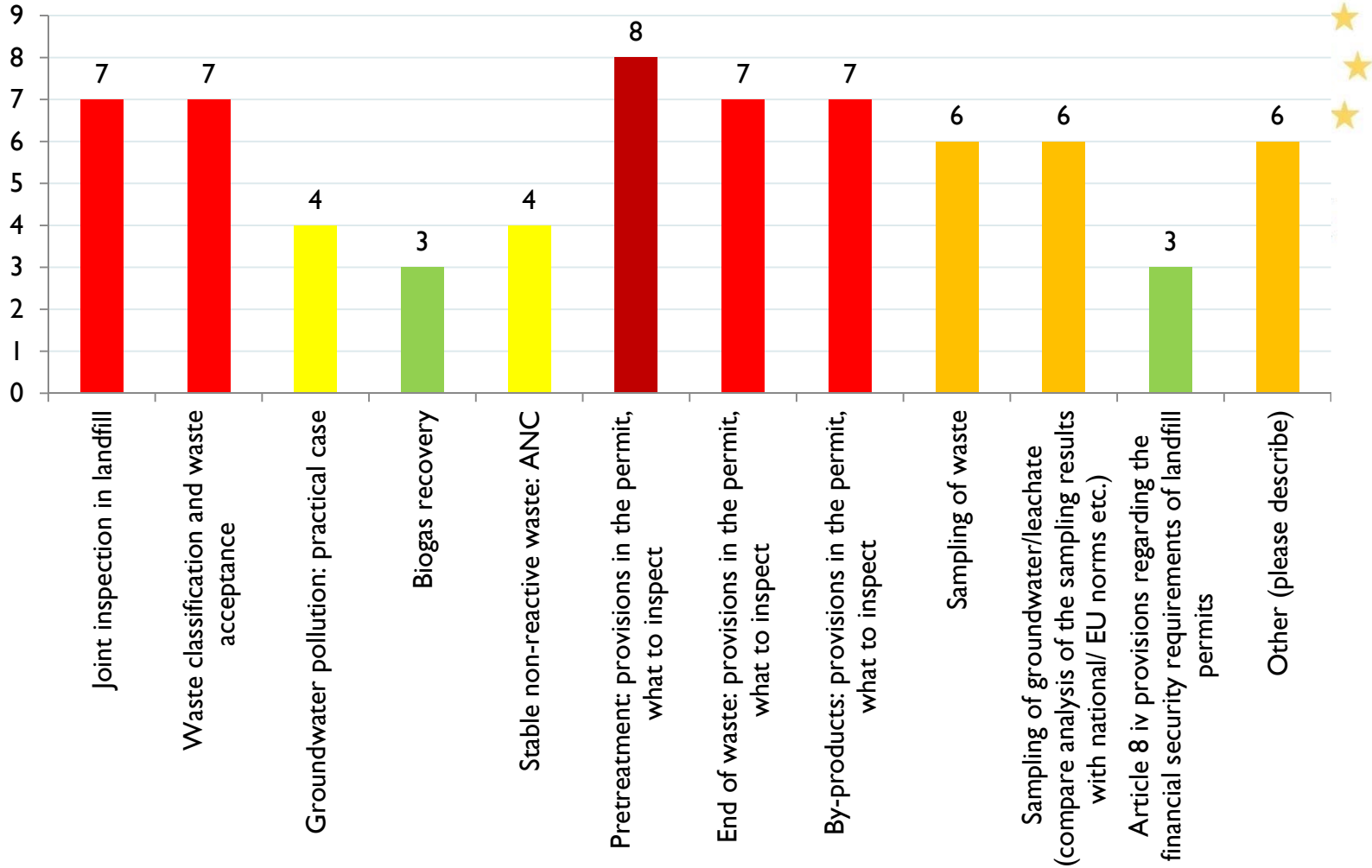
Results of the survey on the needs of capacity building and training

Anna Popławska

Main training programme's objectives are to:

- Strengthen skills and competencies in waste management companies / businesses inspections,
- Develop competences in planning and preparation to inspection,
- Strengthen skills in consideration of material or substance as: waste / by-product / cease to be waste etc.,
- Develop knowledge and analyze of waste management EU policy to give conclusions and feedback,
- In further perspective – increase efficiency of inspectors during performed inspections and permit writers in better quality of documents,
- Analyze EU and national law and work out the uniform interpretation and application of provisions in Member States (e.g. end of waste criteria)

Training need assessment:
the survey results



Training need assessment
joint inspection in landfill:

a) identification and interpretation of similarities and differences application on each country;

b) share information and practical experience in:
   - the way of covering all relevant environmental aspects during inspection,
   - using and complying with the checklist (if prepared),
   - wide range of tools used during inspection,
   - inspection form, frequency of inspections,
   - recording inspections, assessment of monitoring, emission monitoring (who? How? When?)

c) Pre-inspection planning/ Inspection planning according to risk assessment and local circumstances.

Training need assessment

Waste classification and waste acceptance:

- Edition of a correct waste classification/acceptance analysis report, which data and information must be presented in the an. Report;
- Information of the practical interpretation (how to read) a chemical analysis to check the correct classification;
- examples of waste classification for different hazardous properties;
- practical training for applying EU guideline for waste classification;
- Waste sampling in landfill (hazardous, non-hazardous or Inert) and generally as input in recovery/disposal plants;
- can be shown deficiency of legislation;
- the acceptance procedures in other countries;
- performing inspection in the area's with asbestos and checking out if there any specific procedures to accept asbestos and to deposit it;
- how to ensure a quality control for declaration and acceptance at landfill (characteristic /recurrent declaration an control analysis);
- policy of waste classification and waste acceptance;
- what is waste acceptance and why is it so important – practical information about inspection of these tasks, acceptance criteria for different classes of landfill, when testing is not required, how to deal with mirror codes

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Training need assessment

Pretreatment:

- provisions in the permit, pretreatment requirements and inspection items (what to inspect),
- what is a correct pretreatment fulfilling the waste acceptance,
- which kind of analysis have to be done to demonstrated that the waste has been treated or already comply with waste acceptance,

Training need assessment

End of waste:

- provisions in the permit, what to inspect,
- which documents have to be checked to demonstrate that the EoW status is achieved,
- practical cases of EoW documents and verification of the fulfillment of the 4 criteria,
- specifically for EoW case by case without a permit (self assessement),
- uniform interpretation of the criteria,when to consider (treated) waste as raw material

Training need assessment

By-products:

- provisions in the permit,
- what to inspect,
- uniform interpretation of the criteria,
- what documents have to be checked to demonstrate the by-product status of the material,
- practical cases of by-products documents and verification of the fulfillment of the 4 criteria

Issues rated as requiring training to a lesser extent:

a) Groundwater pollution:

- practical case – groundwater monitoring, how to check the compliance with the permit

b) Sampling of waste:

- Frequency of sampling, responsible entity, method of taking sample, how to choose the best place to take sample of waste,
- Who is responsible of taking samples of waste – how does it look in MS, requirements for sampling,
- Consider the situation when the results do not meet the acceptance of the landfill,

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Issues rated as requiring training to a lesser extent:

c) <u>Sampling of groundwater/leachate (compare analysis of the sampling results with national/ EU norms etc.)</u>:

- Is leachate treated/ cleaned/ reused,
- How to sample groundwater / leachate,
- Compare of results from time periods,Develop trigger thresholds “up-/downstream”,
- Develop action plan if thresholds are exceeded,leachate requirements in the permit.,
- Who is responsible for taking samples and checking the requirements,
- Objectives of Monitoring: how to design a monitoring, programme, key indicator parameters, assessment criteria, maintenance of monitoring points

Issues rated as requiring training to a lesser extent:

- <u>Biogas recovery:</u>
- inspection of biogas extraction plan, monitoring of biogas quality, treatment for biogas quality, use of biogas - when do we need to flare, monitoring,
- containment; engineered barriers, lining across base and up sides; capping recommendations,
- collection, wells, built up, retro-drilled, trenched, pin, sacrificial, horizontal, temporary, layout, spacing, connecting and delivery pipework, condensate.

Other ideas of training:

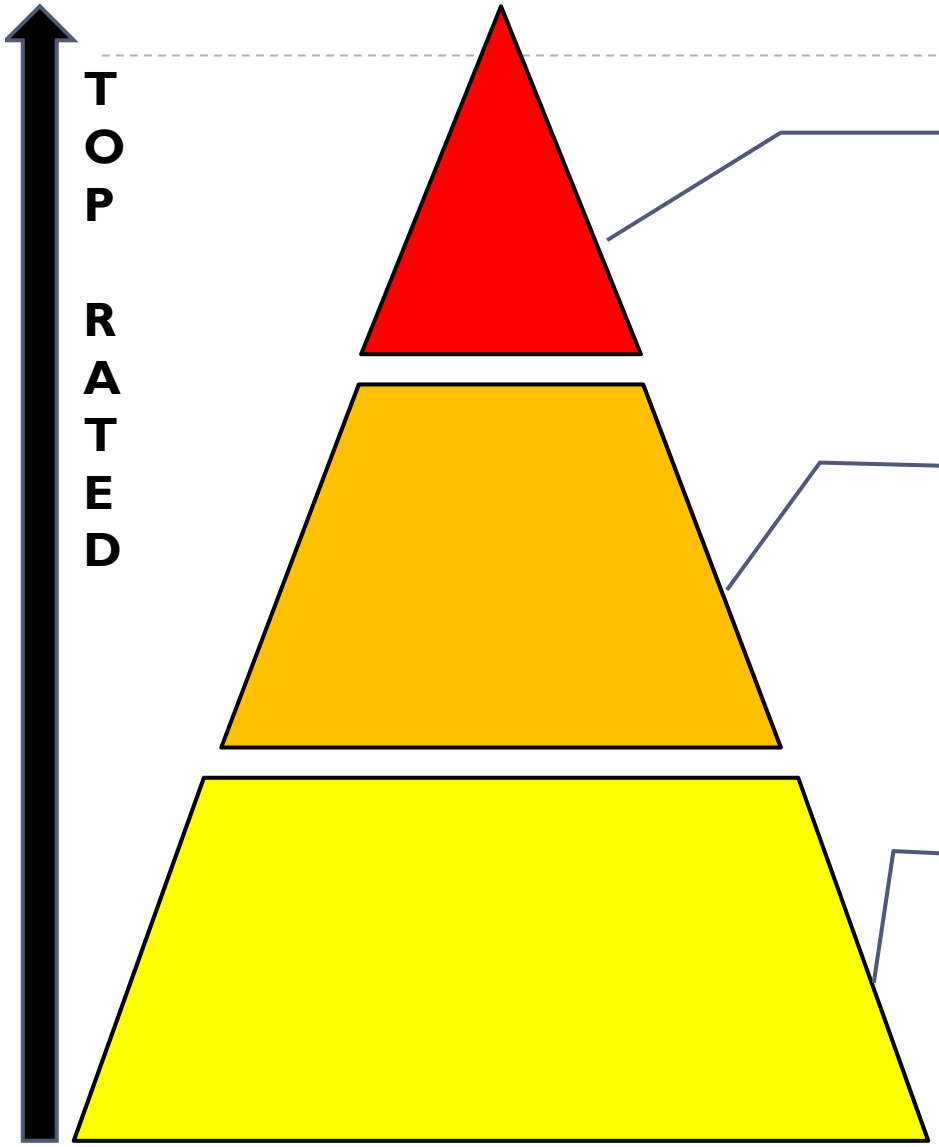
- Environmental Impact assessment of a waste management plant: evaluation of a new project, how to assess if the impact is acceptable or not
- Odors: Do other countries have troubles with odor-problems? What are the solutions?
- Implementing mandatory Landfill annual reports including the relevant data and an assessment/declaration of "landfill behavior" referring to the "objects of protection" /water/air/soil/
- Dust and or odor. Items to check in the permit,
- BAT in landfills. Waste recovery targets and achieving them in practice.

Define the target group

- the main target group are inspectors who conduct site inspection,
- the second group that should be taken into consideration while planning the training are permit writers,
- the training should also include the stakeholders (operators) and competent authority for after-care,

- other institution e.g. prosecutors, police etc.?

TOOLKITS



JOINT INSPECTION
SEMINARS
WORKSHOPS
EXCHANGE PROGRAMMES

TRAIN THE TRAINER
CASE STUDIES
REFERENCE MATERIALS

E-LEARNING
TRAINING VIDEOS
WEBINARS
QUZZES AND GAMES
VIDEOCONFERENCES

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Toolkits

Toolkit	Advantages	Disadvantages
JOINT INSPECTIONS top rated	• effective way to share knowledge with example (Turkey), • interpretation of requirements (Netherlands), • **wider view on the subject, possibility of learning from each other** (Belgium), • **practical case and practical training** (Italy, Malta)	• different requirements in Member States (Netherlands), • limited number of participants (Turkey, Malta), • different legislation, tasks that cannot be applicable in everyday work in different MS (Belgium), • more expensive (Italy)
SEMINARS	• great for learning and getting feedback (Finland), • case by case example to discuss (Netherlands), • **more effective if connected with joint inspecions** (Italy), • good dissemination of information (Malta)	• low attendance (Finland), • possibility of being too much theoretical (Italy), • not gaining practical experience on the ground (Malta)

Toolkit	Advantages	Disadvantages
WORKSHOPS	• discuss practical experience (Netherlands), • opportunity to discussnew issues/ methods (Turkey), • great for discussing and learning and developing the regulation and practices (Finland), • interesting to go in depth (Italy), • good dissemination of information & opportunity for discussion with other European colleagues (Malta)	• low attendance (Finland), • less practical, • not gaining practical experience on the ground (Malta)
WEBINARS	• possibility of higher attendance (Finland), • time saving (Italy), • good dissemination of information & opportunity for discussion with other European colleagues (Malta)	• less opportunity for discussion (Italy), • not gaining practical experience on the ground (Malta)
E-LEARNING	• possibility of higher attendance (Finland), • structured method of training (Malta)	• less opportunity for discussion (Italy, Malta)
TRAINING VIDEOS	• possibility of higher attendance (Finland), • very practical (Italy) • structured method of training (Malta)	• it could cover only practical phases of inspections, • Less opportunity for discussion (Malta)

Toolkit	Advantages	Disadvantages
EXCHANGE PROGRAMMES	• very effective in learning new practices (Finland), • share information and try to connect personal experience and to explore different work and inspection models from different states (Italy), • good method for on the ground training with opportunity for training on a range of issues (Malta)	• more expensive, • more time requiring, • may cause difficulty for travel for extended period of time (Malta)
TRAIN THE TRAINER	• effective way of providing information and guidance (Finland), • more effective for the trained trainer (Italy), • targeted training which can later be disseminated (Malta)	• less discussion, less sharing of information (Italy)
CASE STUDIES	• good way of sharing knowledge (Finland), • interesting (Italy), • good for possible comparisons with local cases. (Malta), • joint inter-MS work on selected case studies could provide permit writer with new pproaches at application assessment and condition setting. (Malta)	• could be more theoretical (Italy), • limited in scope from a compliance and enforcement perspective (Malta)

Toolkit	Advantages	Disadvantages
QUIZZES AND GAMES	• fun and easy (Finland), • funny (Italy)	less connected with everyday reality
REFERENCE MATERIALS	• possibility of higher attendance (Finland), • very practical (Italy), • good way in disseminating information (Malta)	• it could cover only practical phases of inspections, • limited in scope and no room for discussion and practical experience
EXCHANGE PROGRAMMES	• very effective in learning new practices (Finland), • share information and try to connect personal experience and to explore different work and inspection models from different states (Italy)	• more expensive, • more time requiring
VIDEOCONFERENCE	• good dissemination of information & opportunity for discussion with other European colleagues (Malta), • easy to attend to and easy way of learning (Finland), • promote discussion (Italy)	• not gaining practical experience on the ground (Malta)

Tasks to work on

- **IMPEL Position paper**
- **Commission staff working document: ECA**
- **A survey on practitioners (IMPEL)**
- **Human and economical resources -** *we need to:*
  - *indicate who and how involve people to give training.,*
  - *indicate the cost that should be faced for each of the initiatives of the programme*
- **Format and tools -** *we need to indicate the tools we need to perform a good training. For example:*
  - *template for reporting back from a joint inspection*
  - *organization of a videoconference*
  - *format of training materials*
  - *certificate of participation*
  - *reference materials*

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THANK YOU

FOR YOR ATTENTION

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